

3rd Edition of Global Conference on
**PHYSICAL MEDICINE
AND REHABILITATION**

&

3rd Edition of World
**ORTHOPEDICS
CONFERENCE**

SEPTEMBER 15-17, 2025

COME AND JOIN US IN
LONDON, UNITED KINGDOM OR VIRTUALLY

3rd Edition of Global Conference on
**Physical Medicine
and Rehabilitation**

3rd Edition of
**World Orthopedics
Conference**

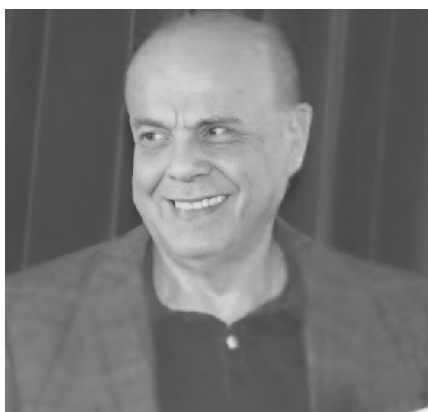
SEPT
15-17

**BOOK OF
ABSTRACTS**

Index

5	Keynote Speakers
8	Welcome Messages
20	About Magnus Group
21	About CPD Accreditation
22	Table of Contents
37	Keynote Presentations
81	Oral Presentations
291	Poster Presentations

Keynote Speakers



Ali Al Kaissi

National Ilizarov Medical Research Center for Traumatology and Orthopaedics, Russian Federation



Diana Hodgins

Dynamic Metrics Ltd, United Kingdom



Dimitrios Giotikas

LIPS Battersea Healthcare, United Kingdom



Igor Belenkiy

Saint Petersburg I.I. Dzhanelidze Research Institute of Emergency Medicine, Russian Federation



Marcos Leal Brioschi

American Academy of Thermology, United States



Matthew B Werd

American Academy of Podiatric Sports Medicine (AAPSM), United States



Shao-Min Shi

Medical College of Wisconsin, United States



W S El Masri

Keele University, United Kingdom



Youssef Masharawi

Tel Aviv University, Israel

Keynote Speakers



David Banes

Equitable AI Alliance, United Kingdom



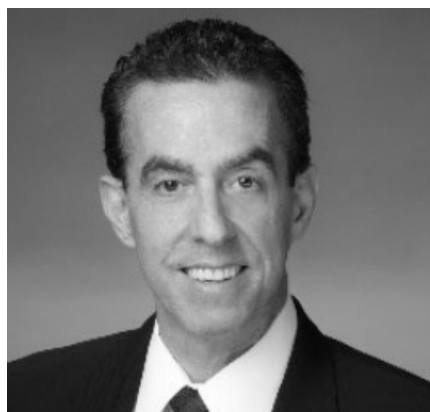
Elissa Charbonneau

Encompass Health, United States



Elizabeta Popova Ramova

MIT University, Republic of North Macedonia



Jay Spector

American Academy of Podiatric Sports Medicine (AAPSM), United States



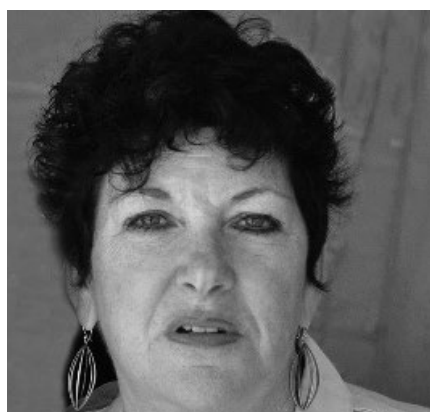
Marcia J Scherer

Institute for Matching Person and Technology, United States



Mel Glenn

Harvard Medical School, United States



Michel Janet Denes (Shelly)

Denes Physical therapy consulting LLC, United States



Ron Blehm

EEL Physio, LLC, United States



Subramanya Adiga

Middlemore Hospital, New Zealand

Keynote Speakers



*Thank You
All...*



Welcome Message

I am honoured to be speaking at the 3rd Edition of Global Conference on Physical Medicine and Rehabilitation (GCPR 2025). Experts from across the globe share knowledge on anatomical topics to help each other improve patient recovery and return to exercise or sport.

My background is in Sports Medicine Podiatry. Believe it or not, I chose my profession after having trained Standardbred race horses growing up and knew that I could help people with their gait issues. I am a 37 time marathoner and have experienced injuries and can relate to my athletes.

I look forward to hearing from the distinguished faculty that will be presenting the next few days. No matter how long or short you may be in your practice, the learning never stops and this is an opportunity to learn from the best!

Jay Spector

American Academy of Podiatric Sports Medicine
(AAPSM), United States



Welcome Message

Dear Colleagues and Friends,

It is with great enthusiasm that I welcome you all to the GCPR 2025 Conference. This event represents a unique opportunity to connect, learn, and collaborate with experts from around the world in the fields of physical medicine, rehabilitation, and pain research. The diversity of knowledge shared here will certainly contribute to advancing science and clinical practice. As we navigate the evolving landscape of health care and rehabilitation, meetings like this are essential to inspire innovation, foster multidisciplinary dialogue, and promote evidence-based approaches. I invite each of you to actively participate, exchange ideas, and build connections that will last beyond this conference. I look forward to engaging discussions and to the impactful insights that will emerge from our time together.

Prof. Marcos Leal Brioschi, MD, PhD

Chairman, American Academy of Thermology
Researcher, Harvard T.H. Chan School of Public Health,
United States



Welcome Message

Dear Colleagues and Friends,

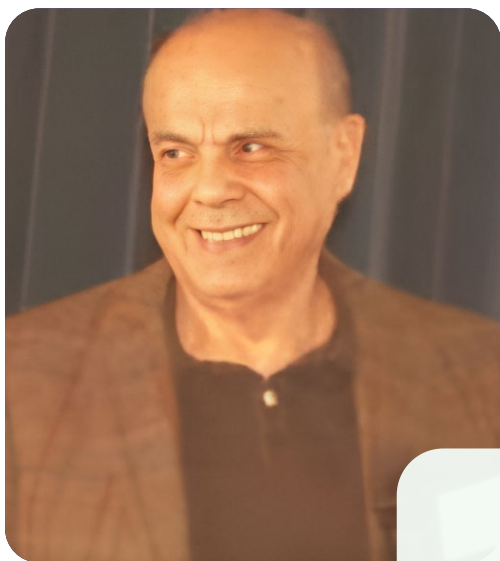
It is a great honor and pleasure to welcome you to the international orthopedic conference. We are delighted to bring together leading experts, researchers, and clinicians from around the globe who are united by a shared dedication to excellence in orthopedic science and patient care.

This conference offers a unique opportunity to exchange ideas, explore the latest advances, and foster international collaboration in our ever-evolving field. We are confident that the presentations, discussions, and networking opportunities will be both inspiring and enriching for all participants.

Thank you for being part of this important gathering. We wish you a successful and rewarding experience.

Shao-Min Shi, MD

Distinguished Professor, Department of Orthopedic Surgery, Medical College of Wisconsin, United States



Welcome Message

Dear Conference Attendees

It is my finest opportunity to express my enthusiasm with you through writing a brief message of welcome to the session entitled congenital bone disorders. Firstly, as much of my work is centred on one simple rule that every long term skeletal deformity/abnormality must have an underlying causality that needs to be explored and addressed. This stems from the conviction that the vast majority of the skeletal deformities - if not all- do not occur randomly. Secondly, where many physicians fall into the pitfall of deeming a countless number of diseases idiopathic, as no clear connection has been established between the onset of the deformity and other inexplicit abnormal features that the patient or their immediate families or relatives carry, my work focuses on uncovering and emphasizing these connections, and reiterating the fundamental rule that etiological understanding is paramount to successful management and treatment.

Ali Al Kaissi MD, MSc, Dsc (Hon)

Former Consultant and Expert for Bone Diseases, Paediatric
Department of the Orthopaedic Hospital, Speising Vienna, Austria;
Currently Honorary Professor Ilizarov Institute, Traumatology and
Orthopedics, Kurgan, Russia



Welcome Message

Dear Conference Attendees,

I am delighted to share a few welcome notes for our session on Implementing AI and Assistive Technologies for people with disabilities: Opportunities and challenges. During this session, we will explore in detail the impact that AI is having on supporting people with disabilities, examining practical examples of positive impact and some of the challenges for designing products and services in the future. The development of AI has been described as the fourth industrial revolution, and even during this early phase, we can already see a significant impact on daily life. This is felt not only in the provision of healthcare, but in education, employment and the promotion of independent living. During the session, we will explore the key issues that AI developers should consider, as well as the recommended questions and approaches for those implementing AI to ensure that the result is both inclusive and avoids bias and discrimination. Unlocking the potential of AI for individuals with disabilities requires careful planning and consideration, as well as the involvement of people with disabilities in a co-design process. Through this session, attendees will leave with practical actions to take in the future.

David Banes

Equitable AI Alliance, United Kingdom and Austria



Welcome Message

Dear Conference Attendees,

It is my pleasure to welcome you to my session entitled Technological Advances in Rehabilitation. During this session, we will explore an efficient system of vetting the ever-expanding world of technology, and how we can better select and use technology to improve patient outcomes in rehabilitation. Patients admitted to inpatient rehabilitation hospitals frequently present with significant functional deficits that impair their ability to care for themselves and re-integrate into society. We will show examples of patients with various medical diagnoses and how technology can be used to facilitate neural recovery after a significant medical event, such as a stroke. In addition, we will discuss the International Classification of Function and the importance of sustainability in the healthcare setting.

Dr. Elissa Charbonneau

Chief Medical Officer, Encompass Health, United States



Welcome Message

It is my great pleasure to write a welcome note for the 3rd Edition of World Orthopaedic Conference in London. Orthopaedic conditions affect people globally and have far reaching impacts on all aspects of health and quality of life, with corresponding high costs to health services. This international conference brings together experts from a wide range of disciplines, providing insights in to their specific areas of research. The global challenges in Public Health will be presented alongside a wide range of topics. These include: pediatric and geriatric orthopaedics; treatment techniques and rehabilitation; regenerative medicine and how AI is being applied in this sector. It will be an excellent opportunity for researchers, clinicians, scientists and academics to gain knowledge with the up to date research in orthopaedics.

Diana Hodgins

Dynamic Metrics Ltd, United Kingdom



Welcome Message

Dear Colleagues,

It is a privilege to connect with so many of you from diverse corners of the world, all dedicated to advancing rehabilitation policy and services for individuals of all ages and backgrounds with disabilities and chronic health conditions. We are living in a time of extraordinary technological growth and capability, offering remarkable opportunities to enhance our service delivery and enrich lives. My keynote will delve into precisely how we can harness these advancements to make a tangible, positive difference. I look forward to sharing these insights with you.

Marcia J. Scherer, Ph.D., MPH

President, Institute for Matching Person & Technology;
Professor of Physical Medicine & Rehabilitation, University of
Rochester School of Medicine & Dentistry, USA



Welcome Message

Dear Conference Attendees,

It is an honor and great pleasure to write a few welcome notes for the session entitled Super Shoes and Athletics: Update 2025 – What Does the Evidence Say?. Super Shoes - also referred to as Advanced Footwear Technology - continue to be a hot topic in athletics and sports medicine but are not without some controversy and misunderstanding- amongst both athletes and healthcare providers. Benefits have been documented to be performance-enhancing, but risks have been documented to include reports of lower extremity injuries. A thorough review and discussion of this new technology should be both relevant and interesting to attendees. A contemporaneous update will be presented, including applicable research and evidence- based studies. Rules for appropriate use of Super Shoes in competition are now in effect through governing organizations and will be discussed. Presentation will include a brief historical discussion, current concepts, and possible future emerging concepts.

Matt Werd, DPM, FACSM

American Academy of Podiatric Sports Medicine,
Past-President and Fellow, United States of America



Welcome Message

Dear Conference Attendees,

It is my great pleasure to welcome you to attend the session entitled Pharmacologic Approaches to Attention and Alertness after Traumatic Brain Injury. People with Traumatic Brain Injury (TBI) often have disorders of attention and alertness that can have major ramifications for daily function. Before prescribing medications for attention and alertness after brain injury, possible contributing agents should be withdrawn if possible. Other therapeutic approaches such as treatment of sleep disorders and cognitive rehabilitation should be undertaken. The evidence will be presented for stimulant drugs such as methylphenidate, amphetamine, and modafinil; acetylcholinesterase inhibitors such as donepezil, rivastigmine and galantamine; medications for sleep disorders such as melatonin and trazodone; and other drugs such as amantadine in the treatment of disorders of attention and alertness following brain injury. This session will provide an opportunity for participants of all disciplines to gain knowledge of these various agents, their benefits and potential side effects.

Mel B. Glenn, MD

Associate Professor, Dept. of Physical Medicine &
Rehabilitation, Harvard Medical School;
Staff Physician, Spaulding Rehabilitation Hospital;
National Medical Director NeuroRestorative, United States



Welcome Message

Dear Conference Attendees,

It is an honor and great pleasure to invite & welcome you to this 3rd Edition of Global Conference on Physical Medicine and Rehabilitation. With great advances in acute care as well as significant improvements in the living standard of people all over the world, life expectancy has been improving steadily, along with an increase in the prevalence of physical and cognitive disability. There are concurrent improvements and advances our therapeutic ability, including genetic manipulation, biologic agents, rehab technology, use of AI as well as better preventive strategies with focus on maintaining good health instead of disease management.

It is great to see that we have delegates & faculty coming from multiple countries across the globe, including all 6 continents and discussing a wide variety of subjects relating to above mentioned areas in this 3rd edition of GCPR. There is something for everyone here, including researchers, scientists, academicians as well as clinicians from various disciplines including physical medicine & rehabilitation (Physiatry), orthopaedics, neurology and various allied health disciplines.

I am eagerly anticipating this knowledge feast and hope that you too are anticipating this as with the same enthusiasm.

Dr. Subramanya Adiga

Middlemore Hospital & University of Auckland,
New Zealand



Welcome Message

Dear Conference Attendees,

It is a great honor and sincere pleasure to welcome you to the session dedicated to lumbar spinal disorders, with a special focus on patient-centered decision-making in Lumbar Spinal Stenosis (LSS). LSS is one of the most common degenerative spinal conditions affecting adults worldwide. The decision to undergo surgery is complex, influenced not only by radiological or clinical findings but also by the patient's individual perception of disability, expectations, and quality of life. In our recent study, titled *The Clinical Status of Patients With Lumbar Spinal Stenosis Reflects Their Individual Decision to Undergo or Defer Lumbar Spinal Surgery*, we explored how patients' subjective experience aligns with their treatment choices, providing valuable insights into the dynamics between clinical status and decision-making.

This session offers an important opportunity to discuss how evidence-based data and patient preferences can be integrated into spine care. We hope the presentations and discussions will promote better understanding, empathy, and innovation in spinal health management.

Professor Youssef Masharawi

Spinal Researcher and Physiotherapist, Gray Faculty of
Medical and Health Sciences, Tel Aviv University, Israel



ABOUT MAGNUS GROUP

Magnus Group, a distinguished scientific event organizer, has been at the forefront of fostering knowledge exchange and collaboration since its inception in 2015. With a steadfast commitment to the ethos of Share, receive, grow, Magnus Group has successfully organized over 200 conferences spanning diverse fields, including Healthcare, Medical, Pharmaceuticals, Chemistry, Nursing, Agriculture, and Plant Sciences.

The core philosophy of Magnus Group revolves around creating dynamic platforms that facilitate the exchange of cutting-edge research, insights, and innovations within the global scientific community. By bringing together experts, scholars, and professionals from various disciplines, Magnus Group cultivates an environment conducive to intellectual discourse, networking, and interdisciplinary collaboration.

Magnus Group's unwavering dedication to organizing impactful scientific events has positioned it as a key player in the global scientific community. By adhering to the motto of Share, receive, grow, Magnus Group continues to contribute significantly to the advancement of knowledge and the development of innovative solutions in various scientific domains.



ABOUT CPD Accreditation



Continuing Professional Development (CPD) credits are valuable for GCPR & Ortho 2025 attendees as they provide recognition and validation of their ongoing learning and professional development. The number of CPD credits that can be earned is typically based on the number of sessions attended. You have an opportunity to avail 1 CPD credit for each hour of Attendance. Some benefits of CPD credits include:

Career advancement: CPD credits demonstrate a commitment to ongoing learning and professional development, which can enhance one's reputation and increase chances of career advancement.

Maintenance of professional credentials: Many professions require a minimum number of CPD credits to maintain their certification or license.

Increased knowledge: Attending GCPR & Ortho 2025 and earning CPD credits can help attendees stay current with the latest developments and advancements in their field.

Networking opportunities: This conference provide opportunities for attendees to network with peers and experts, expanding their professional network and building relationships with potential collaborators.

Note: Each conference attendee will receive 30+ CPD credits.

Table of Contents

Title: Surgical versus non-surgical management of displaced midshaft clavicle fractures: A systematic review and meta-analysis	82
Abdelfatah Elsenosy, University Hospitals Dorset NHS Foundation Trust, United Kingdom	
Title: 3D-printed Patient-Specific Instrumentation (PSI) versus conventional techniques in Total Knee Arthroplasty (TKA): A systematic review and meta-analysis	83
Abdelfatah Elsenosy, University Hospitals Dorset NHS Foundation Trust, United Kingdom	
Title: Efficacy and safety of negative pressure wound therapy in managing lower limb amputation; An updated systematic review and meta-analysis with individual patients data meta-analysis and GRADE assessment	85
Abdullah Elrefae, Northwick Park Hospital, United Kingdom	
Title: Outcomes of periprosthetic distal femur fractures managed surgically with fixation or revision to Distal Femoral Replacement (DFR)	87
Adam Truss, Liverpool University Hospital Foundation Trust, United Kingdom	
Title: PeriProsthetic Fractures (PPF) of the proximal femur – Defining the true patient impact	88
Adam Truss, Liverpool University Hospital Foundation Trust, United Kingdom	
Title: Artificial intelligence in spine surgery: A paradigm shift from diagnosis to rehabilitation – A meta-analysis and future roadmap	89
Agustin Tellez Duarte, Arthritis and Orthopaedic Clinic Cozumel, Mexico	
Title: Posterolateral rotatory instability of the elbow: Current concepts and the overlooked role of cubitus varus	91
Ahmad Quzli, NorthWest Health Education England NHS, United Kingdom	
Title: Quadriceps tendon ruptures: Current concepts in diagnosis and management	92
Ahmad Quzli, NorthWest Health Education England NHS, United Kingdom	
Title: Influence of contralateral knee status on Quality of Life (QoL) after Total Knee Replacement (TKR): Retrospective study	93
Ahmed Zainy, London Northwest Trust, United Kingdom	
Title: Robotic-assisted Kinematic Alignment(KA) in Total Knee Arthroplasty (TKA)	94
Ahmed Zainy, London Northwest Trust, United Kingdom	
Title: Leveraging technology in physical medicine and rehabilitation in care homes/ assisted living facilities for seniors	95
Akankunda Veronicah Karuhanga, Golden Age Elderly Homes Uganda, Kampala, Uganda	
Title: Rare case of osseous hydatid cyst disease	98
Alaa H Alghareeb, Alhassan Teaching Hospital, Iraq	
Title: The etiological diagnosis of torticollis	38
Ali Al Kaissi, National Ilizarov Medical Research Center for Traumatology and Orthopaedics, Russian Federation	

Table of Contents

Title: Clinical value of routine follow-up radiographs in total joint arthroplasty	99
Ali Rajab, University Hospitals Bristol and Weston NHS Foundation Trust, United Kingdom	
Title: Temporal analysis of the epidemiology of upper extremity amputations in the United States: An analysis of the global burden of disease database from 1990-2019	292
Ambrose Loc Thanh Ngo, Kansas City University, United States	
Title: Epidemiology of shoulder dislocations in the United States from 1990 to 2019: A temporal study using the global burden of disease database	294
Ambrose Loc Thanh Ngo, Kansas City University, United States	
Title: Comparison of open broström-gould repair and arthroscopic anatomical repair of the anterior talofibular ligament in the management of chronic lateral ankle instability	100
Amgalankhuu Orkhontuul, National Trauma and Orthopedic Research Center, Mongolia	
Title: Defining optimal follow-up for computer-navigated total knee arthroplasty: A 10-year analysis of implant survivorship, outcomes, and patient factors in 1,677 cases	102
Amin Bolourchi, Golden Jubilee National Hospital, United Kingdom	
Title: Paediatric cervical spine development and ethnic variation: A CT based study from a New Zealand cohort	296
Ampili Elizabeth Mathews, Te Whatu Ora Hawke's Bay Hospital, New Zealand	
Title: Assessing the accuracy of preoperative templating in Hip Hemi Arthroplasty (HHA) : A retrospective audit	104
Amr Mohamed Foad Mohamed, Herfordshire NHS Trust, United Kingdom	
Title: Role of true axial X-ray in management of ACJ Injuries - QIP	106
Amr Mohamed Foad Mohamed, Herfordshire NHS Trust, United Kingdom	
Title: Effects of cyriax manipulation and kinesio taping in premenstrual syndrome pain in younger females	108
Ankit Bhargava, Jayoti Vidyapeeth Women's University, India	
Title: To investigate the effect of relaxation and breathing exercises and cyriax manipulation on the stress management in female with leucorrhea	110
Ankit Bhargava, Jayoti Vidyapeeth Women's University, India	
Title: Giant calf mass as a late manifestation of total knee arthroplasty failure - A case report and surgical approach	111
Ansaba Naseer, North Cumbria Integrated Care NHS Foundation Trust, United Kingdom	
Title: Silent breakdown: Spontaneous tendon ruptures in hemodialysis patients	112
Ansaba Naseer, North Cumbria Integrated Care NHS Foundation Trust, United Kingdom	
Title: Are all large rotator cuff tears created equal? Prognostic factors in surgically repaired large rotator cuff tears from the New Zealand rotator cuff cohort	114
Anthony Maher, Waikato Hospital, New Zealand	

Table of Contents

Title: Integrating holistic early rehabilitation in acute care: Evidence-based strategies for enhancing patient outcomes and optimizing costs	116
Archana Vatwani, University of St. Augustine Health Sciences, United States	
Title: Data-driven decisions: Enhancing patient outcomes through effective outcome measures	118
Archana Vatwani, University of St. Augustine Health Sciences, United States	
Title: Iatrogenic hypercalcaemia secondary to antibiotic-eluting absorbable calcium sulphate beads in orthopaedic surgery	120
Arit Akiba, James cook University Hospital, United Kingdom	
Title: Optimizing acute soft tissue knee injury management: A retrospective study on protocol implementation	122
Ashmitha Vindya, St Peter's and Ashford Hospital NHS Trust, United Kingdom	
Siddesh Bhushan G Nagabhushan, St Peter's and Ashford Hospital NHS Trust, United Kingdom	
Title: The folly of thinking: I am smarter therefore I know better- Moral reasoning for pre-professional health and professional medical students	124
Aubrey Hope Shaw, University of Idaho, United States	
Title: A challenge for you from a person with a physical disability	125
Aubrey Hope Shaw, University of Idaho, United States	
Title: Fixed angle locking plate in patellar fractures: A prospective evaluation of functional and radiological outcomes	126
Balu Ravi, The Royal Wolverhampton NHS Trust, United Kingdom	
Title: Outcomes of Total Knee Arthroplasty (TKA) without rehabilitation using a midvastus approach with complete synovectomy and subperiosteal posteromedial release	128
Bulent Kilic, Istanbul Kanuni Sultan Suleyman Training and Research Hospital, Turkey	
Title: Six month Shoulder Instability-Return To Sport after Injury (SIRSI) scale predicts return to sport and Patient-Reported Outcomes (PROs) at 1-year after arthroscopic shoulder surgery in adolescent athletes	298
Carolina Pavlenco, University of Washington, United States	
Title: Feasibility of an augmented reality novel approach for the rehabilitation of chronic low back pain patients with kinesiophobia	130
Catalina Vidal, Pontificia Universidad Catolica De Chile, Chile	
Title: Digitising multidisciplinary documentation to improve clinical communication and patient flow: A quality improvement initiative at a high-performing district general hospital	132
Chiara Jade Vedi, London North West University Healthcare NHS Trust, United Kingdom	

Table of Contents

Title: Implementing AI and assistive technologies for people with disabilities: Opportunities and challenges	40
David Banes, Equitable AI Alliance, United Kingdom	
Title: A data driven approach to prehabilitation and rehabilitation for hip and knee replacement patients	42
Diana Hodgins, Dynamic Metrics Ltd, United Kingdom	
Title: Safety and efficacy of distraction osteogenesis for height dysphoria	44
Dimitrios Giotikas, LIPS Battersea Healthcare, United Kingdom	
Title: Exploring the use of technology in inpatient rehabilitation hospitals	45
Elissa Charbonneau, Encompass Health, United States	
Title: Physical therapy modalities and its effect in cosmetology clients treatment	46
Elizabeta Popova Ramova, MIT University, Republic of North Macedonia	
Title: Radial head arthroplasty versus open reduction and internal fixation for mason type III and IV fractures: A systematic review and meta-analysis	134
Eslam Hassan, University Hospitals Dorset NHS Foundation Trust, United Kingdom	
Title: Incidence of nonsimultaneous contralateral neck of femur fractures: A single-center retrospective cohort study	135
Eslam Hassan, University Hospitals Dorset NHS Foundation Trust, United Kingdom	
Title: Post operative blood check on patients had knee or hip replacement audit	136
Ezaldeen Abu Shareah, Derriford Hospital, United Kingdom	
Title: Second cycle of distal radius fracture audit (BOAST guidelines)	137
Ezaldeen Abu Shareah, Derriford Hospital, United Kingdom	
Title: Foraminotomy versus ACDF for proximal foraminal stenosis project	139
Ezaldeen Abu Shareah, Derriford Hospital, United Kingdom	
Title: Bone health check in patients attended fracture clinic with fragility fractures audit	141
Ezaldeen Abu Shareah, Derriford Hospital, United Kingdom	
Title: Bilateral tibial tuberosity avulsion fractures in an adolescent rugby player	143
Faliq Abdullah, University Hospital of Wales, United Kingdom	
Title: Nine years too late? A rare case of very late diagnosed bilateral developmental dysplasia of the hip	145
Faliq Abdullah, University Hospital of Wales, United Kingdom	
Title: Perioperative low eosinophil count as a predictor of poor outcomes in patients with a hip fracture	147
Fathima Insaaf Zahir Ahamed, Canberra Health Services, Australia	
Title: MIS TN arthrodesis: Technique and results	148
Felix Werneburg, Martin Luther University Halle Wittenberg, Germany	

Table of Contents

Title: Use of vibrational optical coherence tomography to noninvasively evaluate the properties of tissues	150
Frederick Silver, Rutgers University, United States	
Title: Ultrasound quadriceps depth and sit-to-stand power as biomarkers of muscle function and quality	157
Garcia Ruiz Michelle Guadalupe, National Rehabilitation Institute, Mexico	
Title: Determination of morphological and functional muscle quality in an open population over 65 years	151
Garcia Ruiz Michelle Guadalupe, National Rehabilitation Institute, Mexico	
Title: Reconstructing the ischaemic forearm: Synergistic role of Ilizarov Technique (IT) and soft tissue procedures in volkmann contracture	154
Gaurav Verma, Jaipur National University Institute for Medical Science and Research, India	
Title: Association between arthropathy and peripheral neuropathies in adults with hemophilia	302
Gibraltar Conde Aidee, National Autonomous University of Mexico, Mexico	
Title: Advances in hemophilia rehabilitation	304
Gibraltar Conde Aidee, National Autonomous University of Mexico, Mexico	
Title: Unilaterally extrapedicular versus transpedicular kyphoplasty in treating osteoporotic lumbar fractures: A randomized controlled study	306
Hao Hong, Chongqing Orthopedic Hospital of Traditional Chinese Medicine, China	
Title: Incidence of postoperative progressive segment degeneration at decompression and adjacent segments after minimally invasive lumbar decompression surgery: A 5-year follow-up study	156
Hasibullah Habibi, Osaka Metropolitan University, Japan	
Title: Comparing measurement techniques for posterior tibial slope	307
Hemanth Senthilnathan, Te Whatu Ora New Zealand, New Zealand	
Title: Intramedullary nailing of trochanteric fractures: The analysis of the radiological anatomy	48
Igor Belenkiy, Saint Petersburg I.I. Dzhanelidze Research Institute of Emergency Medicine, Russian Federation	
Title: Indications for shockwave in teenage athletes	50
Jay Spector, American Academy of Podiatric Sports Medicine (AAPSM), United States	
Title: Improving documentation of post-operative review via a proforma in trauma and orthopaedics: A 2-cycle audit	158
Jeremy Lee Jun Shern, NHS Tayside, United Kingdom	

Table of Contents

Title: Genetic engineering of VHH-with-multiple-paratopes (Single domain with multidomain antibody megabody) Targeting Multiple (TM) cytokines in the osteoarthritis joints as a potential of DMOAD	160
Johan, Doctor Link International Pte Ltd, Singapore	
Title: Combination of static bike, TENS and unloader knee brace in alleviating knee pain, delay knee arthroplasty and improve activity daily living in knee OA patients	161
Johan, Doctor Link International Pte Ltd, Singapore	
Title: Short-term clinical outcomes on a new dual-taper wedge femoral stem in total hip replacement	162
Jonathan Courtney, Orthopedic Surgery Associates, United States	
Title: Factors affecting transfusion and haemoglobin drop following IM tibial nails	308
Joseph McAuley, Glasgow Royal Infirmary, United Kingdom	
Title: Injectable synthetic bone graft substitute (GeneX) in the surgical management of benign bone tumours: Further experiences from a tertiary musculoskeletal oncology centre	310
Joseph McAuley, Glasgow Royal Infirmary, United Kingdom	
Title: Functional outcomes and imaging-related factors in Distal Radius Fractures(DRF) among older adults: A comprehensive review	312
Joseph Salem Hernandez, University of Puerto Rico School of Medicine, Puerto Rico	
Title: Cross-cultural adaptation and validation of the Spanish version of the Early-Onset Scoliosis Self Report Questionnaire (EOSQ-SELF)	314
Joseph Salem Hernandez, University of Puerto Rico School of Medicine, Puerto Rico	
Title: Prosthetic embodiment in lower limb loss	163
Joshua Graham, Royal College of Surgeons in Ireland (RCSI), Ireland	
Title: Motion analysis technology in children with disabilities	164
Juan Carlos Perez Moreno, Federico Gomez Children's Hospital of Mexico, Mexico	
Title: It's better for me to live positively: Experiences of persons with aphasia participating in an online choir group in Singapore	316
Julia Wong, Singapore Institute of Technology, Singapore	
Title: From chronic low back pain to vitality and joy: A qualitative study of people's experiences with Esoteric Connective Tissue Therapy (ECTT)	166
Katharine Greenaway, Charles Sturt University, Australia	
Title: Core decompression of the femoral head for treating a bone marrow lesion with Intraosseous Bioplasty® (IOBP®) technique – Case report	168
Konstantin Mitev, Zan Mitrev Clinic, North Macedonia	
Title: Auto cart in the knee cartilage repair	170
Konstantin Mitev, Zan Mitrev Clinic, North Macedonia	

Table of Contents

Title: Retrospective Study of 50 cases of sprengel deformity operated according to modified woodward	172
Labadi Saber, Private Orthopedic Surgeon, Algeria	
Title: Improving the management of First-Time and Recurrent Lateral Patellar Dislocations (FTRLPD) in acute orthopaedic care: A clinical audit against BOAST and ESSKA guidelines	173
Lewis Patrick, National Health Service (NHS), United Kingdom	
Title: One-stage hybrid surgery for limb closed fracture concomitant with major vascular injury	174
Li Li Shenghua, Chongqing University Three Gorges Hospital, China	
Title: The missing link in hip fracture timelines: Impact of full admission work-up on time to theatre	176
Lisa Kells, Shrewsbury and Telford Hospital Trust, United Kingdom	
Title: Enhancing well-being and self-directed engagement through therapeutic environmental design for ageing individuals with intellectual disability – A pilot study	178
Macy Leung May Sze, The Salvation Army, Hong Kong	
Title: Evaluating the effectiveness of information technology in rehabilitation training for individuals with intellectual and physical disabilities- Single case study with multiple-baseline design	318
Macy Leung May Sze, The Salvation Army, Hong Kong	
Title: Comparison of intra-articular haematoma block and procedural sedation for the manipulation of closed ankle fracture dislocations: A cross-sectional study	180
Mahmoud Elmesalmi, St George's Hospital, United Kingdom	
Title: Do routine postoperative radiographs influence the management of distal radius fractures following volar locking plate fixation?	181
Mahmoud Elmesalmi, St George's Hospital, United Kingdom	
Title: Reliability of bridge tests in adults: A systematic review and meta-analysis	182
Mansha Bhiryani, Countess of Chester Hospital, United Kingdom	
Title: Adherence to guidelines and patient factors in diabetic foot disease	183
Mansha Bhiryani, Countess of Chester Hospital, United Kingdom	
Title: The technology we have, the technology we use, the technology we want	51
Marcia J Scherer, Institute for Matching Person and Technology, United States	
Title: Infrared imaging in physical rehabilitation: A technological approach for veterans and military medicine	53
Marcos Leal Brioschi, American Academy of Thermology, United States	
Title: AI-Driven infrared imaging and telerobotics in orthopedics: Enhancing diagnostics, surgical precision, and postoperative care	55
Marcos Leal Brioschi, American Academy of Thermology, United States	

Table of Contents

Title: Rehabilitation management of a pediatric patient with mixed bone and soft tissue arteriovenous malformation of the lower extremity: A case report	320
Maria Jonnalín C Santos, University of the Philippines, Philippines	
Title: Lars synthetic ligaments: A new frontier?	184
Massimo Piracci, Medcare Orthopedic and Spine Hospital, United Arab Emirates	
Title: Ozone therapy in disc herniation as advance treatment	186
Massimo Piracci, Medcare Orthopedic and Spine Hospital, United Arab Emirates	
Title: Super shoes and athletics: Update 2025 – What does the evidence say?	57
Matthew B Werd, American Academy of Podiatric Sports Medicine (AAPSM), United States	
Title: Sports medicine pearls of the foot and ankle	59
Matthew B Werd, American Academy of Podiatric Sports Medicine (AAPSM), United States	
Title: PFNA vs TFNA osteosynthesis in neck of femur fractures: Comparison of helical blade proximal fixation failure	188
Matthew Farrugia, National Health Service (NHS), United Kingdom	
Title: Are longer metatarsal lengths ubiquitous in patients with primary metatarsalgia?	190
Matthew Farrugia, National Health Service (NHS), United Kingdom	
Title: Pharmacologic approaches to attention and alertness after traumatic brain injury	61
Mel Glenn, Harvard Medical School, United States	
Title: Role of biofeedback pelvic floor training in elderly patients with obstructed defecation	192
Mervat Sheta Ali Gawdat Elsayy, Alexandria University, Egypt	
Title: Understanding Postural Orthostatic Tachycardia Syndrome (POTS) in the World of Physiotherapy	62
Michel Janet Denes (Shelly), Denes Physical Therapy Consulting LLC, United States	
Title: The sleep fall Connection: The Impact on older adults	63
Michel Janet Denes (Shelly), Denes Physical Therapy Consulting LLC, United States	
Title: Hyperuricemia-induced proinflammatory and immunosuppressive dysregulation in circulating immune cells	321
Michelle Ho, ILab Research Institute, United States	
Title: Psoriasis as an independent risk factor for postoperative infections and revision surgeries in joint arthroplasty: A systematic review and meta-analysis	193
Miqdad Qandawl, Northwick Park Hospital, United Kingdom	

Table of Contents

Title: Service evaluation of urgent spinal MRI requests for back pain patients in an orthopaedic department	195
Mohammed Al-Kubaisi, Rotherham NHS Foundation Trust, United Kingdom	
Title: Management of open fractures: Assessment of adherence to BOA guidelines regarding duration of antibiotics and timing of administration	197
Mohamed Farag, Nottingham University Hospitals, United Kingdom	
Title: Imaging modalities for diagnosis of occult neck of femur fractures: Current practice of NHS district general hospital	199
Mohamed Mahmoud, Dorset County Hospital Foundation Trust (DCHFT), United Kingdom	
Title: Antegrade rush nailing for fractures of the distal humerus	200
Mohammad W Chaarani, Hamad Medical Corporation/Weill Cornell Medical School, Qatar	
Title: Outcomes of measure resected vs gap balance sized TKR local service evaluation	201
Mohamed Wahb, Frimley Health NHS Foundation Trust, United Kingdom	
Title: Compliancy rate of GP Referral's to the WPH trauma & orthopaedic service	203
Mohamed Wahb, Frimley Health NHS Foundation Trust, United Kingdom	
Title: Efficacy of Platelet-Rich Plasma (PRP) in treating plantar fasciitis	213
Muhammad Mannan, University Hospital Birmingham NHS Trust, United Kingdom	
Title: Functional outcomes of Distal Tibia Fractures (DTFs) treated With Minimally Invasive Percutaneous Plate Osteosynthesis (MIPPO)	215
Muhammad Mannan, University Hospital Birmingham NHS Trust, United Kingdom	
Title: Management of femoral periprosthetic fractures: An institutional experience at a district general hospital	205
Muhammad Muneeb Safdar, Musgrove Park Hospital, United Kingdom	
Title: Does delayed surgical intervention for ankle fractures affect patient outcomes?	207
Muhammad Muneeb Safdar, Musgrove Park Hospital, United Kingdom	
Title: A clinical audit assessing patients presenting with a supracondylar fracture	209
Muhammad Muneeb Safdar, Musgrove Park Hospital, United Kingdom	
Title: A clinical audit reviewing the operation notes	211
Muhammad Muneeb Safdar, Musgrove Park Hospital, United Kingdom	
Title: Percutaneous laser microdiscectomy in the treatment of thoracic intervertebral disc protrusions: Difficulties and dangers	323
Mykola Zorin, Dnipro State Medical University, Ukraine	

Table of Contents

Title: Evaluation of functional and radiological outcomes of percutaneous herbert screw fixation in jones fractures: A prospective study	217
Navdeep Singh Keer, Sports Injury Centre, VMMC and Safdarjung Hospital, Delhi, India	
Title: Incidence and functional impact of malrotation following intramedullary nailing of femoral fractures: A prospective CT-based study	219
Navdeep Singh Keer, Sports Injury Centre, VMMC and Safdarjung Hospital, Delhi, India	
Title: External fixation vs. calcaneal pin traction in staged management of pilon fractures with low-grade soft tissue injury: A prospective comparative analysis	221
Navdeep Singh Keer, Sports Injury Centre, VMMC and Safdarjung Hospital, Delhi, India	
Title: Effects of Dexteria app therapy on hand function in subacute stroke survivors	223
Neha Sawant, University Hospitals Coventry and Warwickshire NHS Trust, United Kingdom	
Title: Transforming orthopaedics: Harnessing the metaverse for enhanced patient care, education, and collaboration	224
Nicholas Tin Lik Wong, The Chinese University of Hong Kong, Hong Kong	
Title: Leveraging chatgpt and large language models in orthopaedics: Enhancing patient care, diagnostics, and research	226
Nicholas Tin Lik Wong, The Chinese University of Hong Kong, Hong Kong	
Title: Comparative assessment of diagnostic modalities in retrospective cases of necrotizing fasciitis in a district general hospital	228
Nirav Valand, Barking, Havering and Redbridge University Hospitals NHS Trust, United Kingdom	
Title: A longitudinal study of attachment, illness representations, and trust in physician as recovery promoters following hip fracture surgery in older adults	230
Ola Abu Halawa, Bar-Ilan University: Wolfson Medical Center, Israel	
Title: A meta-analysis of proportions of single-arm studies comparing tibiototalcalcaneal nailing to open reduction & internal fixation in ankle fractures in the elderly	232
Oliver Darwin, East Sussex Healthcare NHS Trust, United Kingdom	
Title: Principles for antibiotic prophylaxis in joint replacement surgery	234
Omar Taha, Frimley Park Hospital, United Kingdom	
Title: Could it be brucella melitensis? Recognizing and managing a rare pathogen in periprosthetic infections among patients from anatolia	235
Omer Faruk Sevim, Kartal Dr. Lutfi Kirdar Hospital, Turkey	
Title: Weight bearing status after peri-prosthetic proximal femur fracture orif or revision arthroplasty: A clinical audit	236
Owen Mitchell, Dorset County Hospital, United Kingdom	

Table of Contents

Title: CONSORT compliance of randomised controlled trials in elective hand surgery: A systematic review	238
Panagiotis Bompolas, Buckinghamshire Healthcare NHS Trust, United Kingdom	
Title: Resolution of bigeminy PVCs and desaturation following cardiac rehabilitation in alcoholic cardiomyopathy and heart failure: A case report	240
Panida Poolpipat, Maharat Nakhon Ratchasima Hospital, Thailand	
Title: Effects of proprioceptive sensitivity stimulation via the sura electrodevice on kinematics, kinetics and spatiotemporal parameters of gait. Pilot study patient survivors of stroke	325
Pedro Victor Lopez Plaza, Ramon Llull University FCS, Spain	
Title: Setting up a TBI outpatient clinic	242
Pradeep Deshpande, Hull University Teaching Hospitals, United Kingdom	
Title: Setting up of a pediatrics complex neuro-disability transition service	243
Pradeep Deshpande, Hull University Teaching Hospitals, United Kingdom	
Title: Controversies in orthopaedics, tips tricks and solution	244
Pramod Lamichhane, Alive Hospital & Trauma Centre, Nepal	
Title: Complex orthopaedic trauma, our experience of management	245
Pramod Lamichhane, Alive Hospital & Trauma Centre, Nepal	
Title: Why are patients without identifiable etiology of failure dissatisfied following total knee arthroplasty: A systematic review and meta-analysis	246
Prashant Awasthi, William Harvey Hospital, United Kingdom	
Title: Why do primary total hip arthroplasties fail in patients under 65 years of age? A systematic review and meta-analysis	247
Prashant Awasthi, William Harvey Hospital, United Kingdom	
Title: Growth disturbances following paediatric anterior cruciate ligament reconstruction: A systematic review	248
Praveen Rajan, Basildon University Hospital, United Kingdom	
Title: Management of olecranon fractures in the elderly – Literature review and proposal of a treatment algorithm	249
Praveen Rajan, Basildon University Hospital, United Kingdom	
Title: Suzuki frame fixation in proximal interphalangeal joint fractures: Systematic review and meta-analysis	250
Priya Parekh, Wirral University Teaching Hospital NHS Foundation Trust, United Kingdom	
Title: A novel computed tomography-based three-column MLP classification of intertrochanteric fracture	326
Qilong Jiang, Chongqing Orthopedic Hospital of Traditional Chinese Medicine, China	

Table of Contents

Title: Evaluating surgical strategies for adolescent idiopathic scoliosis: A meta-analysis of posterior spinal fusion and vertebral body tethering	252
Rahim Nawaz Hussain, South Warwickshire Foundation Trust, United Kingdom	
Title: Improving Weight Bearing Status (WBS) documentation compliance as per British Orthopaedic Association (BOA) guidelines in a North West London district general hospital: A 2-cycle closed-loop audit	254
Rama Jha, London North West Hospital Trust, United Kingdom	
Title: A retrospective cohort study of postoperative complications in Mako robot arm-assisted and conventional knee arthroplasty	256
Rida Lakho, Humanitas University, Italy	
Title: Ways to promote the inclusion of students with mental illness in Universities	258
Ron Shor, The Hebrew University of Jerusalem, Israel	
Title: EMG guided chemodenervation for post-laminectomy syndrome and rotator cuff repair	259
Roger H Coletti, Interventional Health, United States	
Title: Treatment of chronic muscle spasm and pain with the CMECD® procedure	261
Roger H Coletti, Interventional Health, United States	
Title: Fibula nail fixation versus open reduction and internal fixation for distal fibula fractures	262
Rohit Ravindran Nair, Blackpool Teaching Hospitals NHS Foundation Trust, United Kingdom	
Title: Short-to-medium term functional and radiological outcomes of intra-articular calcaneum fracture fixation using sinus tarsi approach	263
Rohit Ravindran Nair, Blackpool Teaching Hospitals NHS Foundation Trust, United Kingdom	
Title: Identifying functional 'red flags' in the 40 to 65 year old patient	264
Ron Blehm, EEI Physio LLC, United States	
Title: Silos of specialized care: A cautionary tale	64
Ron Blehm, EEI Physio LLC, United States	
Title: Acute traumatic complete rupture of the muscular body of the biceps brachii case presentation	327
Sadat Mazreku, GHOL Nyon Hospital, Switzerland	
Title: Evaluation of autograft contamination in Anterior Cruciate Ligament (ACL) reconstruction and its clinical impact; A systematic review and meta-analysis	265
Sai Viswan Thiagarajah, Northern Care Alliance, United Kingdom	

Table of Contents

Title: Local implementation of girft guidance can reduced cauda equina syndrome related service pressures without negatively impacting diagnosis-retrospective observational study at a district general hospital	266
Sai Viswan Thiagarajah, Northern Care Alliance, United Kingdom	
Title: Placement of reference electrode position in motor nerve conduction study of ulnar nerve	267
Salim Hirani, Ysbyty Gwynedd Hospital, United Kingdom	
Title: Neurophysiological grading tool of ulnar nerve entrapment across wrist and across elbow with case presentation	269
Salim Hirani, Ysbyty Gwynedd Hospital, United Kingdom	
Title: Injectability analysis of an alginate-based hydrogel for stem cell therapy in Inter Vertebral Disc (IVD) injury treatment	329
Samer Elhoushy, Washington University in St. Louis, United States	
Title: Immersive virtual reality: A new direction in the management of neuropathic pain in spinal cord injury	270
Samson Selvaraj J, Poovanthi Institute of Rehabilitation and Elder Care, India	
Title: Neurorehabilitation services in a South Indian rehabilitation institute – Issues and challenges	272
Samson Selvaraj J, Poovanthi Institute of Rehabilitation and Elder Care, India	
Title: 3D-planned corrective osteotomy for the treatment of Distal RadioUlnar Joint (DRUJ) instability in diaphyseal forearm malunion	274
Sebastiaan Fischer, Erasmus Medical Center, Netherlands	
Title: Selective denervation for persistent knee pain after total knee arthroplasty: Long-term outcomes	65
Shao-Min Shi, Medical College of Wisconsin, United States	
Title: A breakthrough in post-operative care: Differentiating statin-induced necrotising autoimmune myopathy from sepsis in orthopaedic surgery	275
Sharlet Shabu Pappachan, The Princess Alexandra Hospital Trust, United Kingdom	
Title: Microscopic changes in the multifidus muscle in people with low back pain associated with lumbar disc herniation	277
Shilpa Purushotham, University of Birmingham, United Kingdom	
Title: Predictors Associated with Failing to Achieve a Patient Acceptable Symptom State (PASS) in the Oxford Knee Score (OKS) following Total Knee Arthroplasty (TKA)	279
Steve Robins, University of Sunderland, United Kingdom	
Title: Collateral Sprouting (CS) in the Peripheral Nervous System (PNS) - The silent savior	67
Subramanya Adiga, Middlemore Hospital, New Zealand	

Table of Contents

Title: Acute nerve compression syndromes	68
Subramanya Adiga, Middlemore Hospital, New Zealand	
Title: Assessment of compliance with BOAST Guidelines on weightbearing following lower limb trauma surgery at Arrowe Park Hospital	281
Surayya Mamun, Arrowe Park Hospital, Wirral University Teaching Hospitals , United Kingdom	
Ali Ilyas, Arrowe Park Hospital, Wirral University Teaching Hospitals, United Kingdom	
Title: Standardising microbiology result tracking to reduce missed cultures in a district general hospital orthopaedic department: A quality improvement initiative	283
Surayya Mamun, Arrowe Park Hospital, Wirral University Teaching Hospitals , United Kingdom	
Ali Ilyas, Arrowe Park Hospital, Wirral University Teaching Hospitals, United Kingdom	
Title: Fractures under the lens: How smart are our machines?	331
Syed Umar Hasan, Nottingham University Hospitals NHS Trust, United Kingdom	
Title: A prospective observational study to assess the functional outcomes of open Latarjet procedure for recurrent anterior shoulder dislocations in a tertiary care setting	285
Tathagath Tiwary, SRM Medical College Hospital and Research Centre, India	
Title: Functional outcomes and quality of life scores of angle blade plate in pertrochanteric femur fracture	287
Trishul Sonoji Dhumal, Indra Gandhi Government Medical College, India	
Title: Functional and radiological outcome of U- shaped sacral fracture in 9 year old male child a rare case	288
Trishul Sonoji Dhumal, Indra Gandhi Government Medical College, India	
Title: Acute traumatic spinal cord injuries impact of the model of service delivery comprehensive Active Physiological Conservative Management (APCM) and rehabilitation on the range of outcomes	70
Wagih El Masri, Keele University, United Kingdom	
Title: Acute traumatic spinal cord injuries: Expected neurological outcomes following Active Physiological Conservative Management (APCM) and rehabilitation are the claims for interventions on the injured spine evidence based?	73
Wagih El Masri, Keele University, United Kingdom	
Title: A Study on management of neglected shaft femur fractures by open intramedullary nailing	289
Wazir Fahad Jan, Department of Health and Medical Education, Jammu & Kashmir, India	
Title: Improving efficiency in elective hand surgery: A check and consent clinic model to reduce day-of-surgery cancellations	290
Yahya Abu Seido, National Health Service (NHS), United Kingdom	

Table of Contents

Title: Biportal endoscopic spinal surgery for lumbar spinal stenosis	333
Yong Cheol Jun, Pride Hospital, South Korea	
Title: The clinical status of patients with Lumbar Spinal Stenosis(LSS) reflects their individual decision to undergo or defer Lumbar Spinal Surgery (LSS)	76
Youssef Masharawi, Tel Aviv University, Israel	
Title: Patient-specific versus oxford microplasty instrumentation in unicompartmental knee arthroplasty	334
Yu Deng, Chongqing Orthopedic Hospital of Traditional Chinese Medicine, China	
Title: A novel approach to hallux varus repair	335
Zachary Shih, University of Arizona, United States	
Title: Study scalp electroacupuncture therapy for Autism Spectrum Disorder (ASD)	78
Zhenhuan LIU, Guangzhou University of Chinese Medicine, China	

3rd Edition of Global Conference on
**Physical Medicine
and Rehabilitation**

3rd Edition of
**World Orthopedics
Conference**

SEPT
15-17

**KEYNOTE
PRESENTATIONS**

Ali Al Kaissi

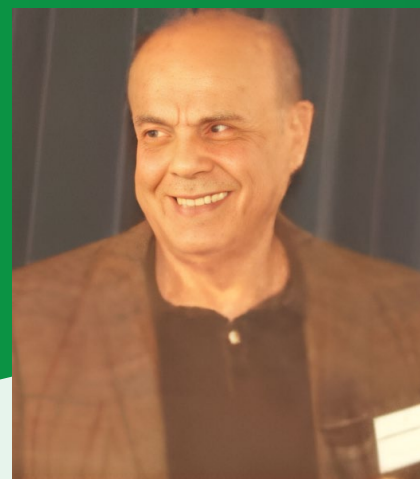
Former consultant and expert for bone diseases Paediatric Department of the orthopaedic Hospital Speising Vienna, Austria

Currently Honorary Professor Ilizarov Institute Traumatology and Orthopedics, Kurgan, Russia

The etiological diagnosis of torticollis

Congenital bony abnormalities of the spine is not of uncommon occurrence. Failure of successive sessions of physiotherapy to re-align the deviated head is a distinctive sign that the problem is not muscular. Conventional radiographs of the cranio-cervical junction can assist early diagnosis, though sometimes are difficult to interpret because of the anatomical overlap. In this study we discussed various forms of congenital bony abnormalities in correlation with certain syndromic entities as the main causation of torticollis. The aetiology understanding of torticollis can be accomplished via the clinical and radiological phenotype, as these are the baseline tools in any diagnostic process in children/adults with complex deformities. In some children/adults we refer to 3DCT scan to further localize the abnormalities with precision. In our patients, torticollis has been presented as a symptom complex rather than a diagnostic clinical entity. We subdivided our findings in accordance with the underlying syndromic association into the following groups. Torticollis in connection with Pathologic aberration of the spine cartilaginous stage as in Spondylomegepiphyseal dysplasia; Torticollis stemmed from congenital vertebral defects that result from disruption of the induction and formation of the axial skeleton as in VATER/VACTERL association; Torticollis resulted from MURCS association (Müllerian duct aplasia/renal agenesis/cervicothoracic dysplasia).

Biography



Ali Al Kaissi, MD, MSc, DSc (Hon), has dedicated much of his work to one simple rule: Every skeletal deformity or abnormality must have an underlying causality that needs to be explored and addressed. He is driven by the conviction that the vast majority of skeletal deformities—if not all—do not occur randomly.

His clinical experience has resulted in more than 220 published papers in peer-reviewed medical journals and five breakthroughs in medicine, including: Al Kaissi Syndrome (OMIM: 617694); Al Kaissi et al., 3MC Syndrome (OMIM: 257920); Al Kaissi Novel Type of Desbuquois Syndrome (AJMG, 2005); Al Kaissi Novel Conception of Wormian Bones Diagnostics (J. Basel, 2023)

The purpose of this presentation is to signify the importance of the precise diagnosis of the underlying etiologies in children presented with congenital torticollis. The prevailing misconception among the vast majority of orthopaedic surgeons that congenital muscular torticollis is the most common was the reason behind the development of morbid consequences. Unfortunately, on the basis of muscular torticollis, most children received extensive physical therapy and stretching exercises which might lead to unpleasant outcomes. Comprehensive understanding of the clinical phenotype in these children is the baseline tool to achieve proper management.

Biography

David Banes

Equitable AI Alliance, Vienna, Austria

Implementing AI and assistive technologies for people with disabilities: Opportunities and challenges

Artificial intelligence is transforming the landscape for access and inclusion for disabled persons, bringing exciting opportunities and new challenges. In this session, we present the reality of the implementation of AI in the design and development of new assistive technologies to meet the needs of people with a disability. We recognise that Artificial intelligence (AI) is revolutionising traditional practices and enabling new capabilities. Whilst people with disabilities experience this change and disruption alongside the wider population, the changes may have more significant consequences for those with disabilities. An example is the use of AI as a core component for autonomous vehicles. Such innovation enhances the safety and use of vehicles for any citizen. However, for a person with a disability, these innovations bring the prospect of fully independent travel for the first time. Across multiple domains and sectors, we see how AI is making a difference. For instance:

- **Assistive Technologies:** AI-powered devices like voice assistants (e.g., Amazon Echo, Google Home) help individuals with mobility or speech impairments to control their environment, communicate, and access information more easily.
- **Enhanced Communication:** AI-driven applications, such as speech-to-text and text-to-speech software, enable people with hearing or speech disabilities to communicate more effectively. Eye-tracking and



David Banes has a masters in Education and has worked for 40 years in the field of disability and technology. He is General Secretary of DATEurope the European Digital Assistive Technology Industry Association and Chairs the Equitable AI Alliance based in Vienna. He works globally as a consultant and advisor in the field of innovation and technology with building access through technology and innovation from policy to practice. Recent projects include the development of a response to disruptive innovation in the access industry, identifying solutions to meeting the needs of refugees with a disability, and building a business case for public investment in assistive technology, whilst supporting entrepreneurs to bring products and services to market.

voice-recognition technologies also facilitate communication for those with severe physical disabilities.

- **Personal Mobility:** AI is revolutionising personal mobility through smart wheelchairs and navigation systems that help individuals with mobility impairments navigate their surroundings safely and independently.
- **Inclusive Design:** AI encourages the development of inclusive products and services that cater to a wide range of abilities, ensuring that technology is accessible to everyone.

However, the full implementation of inclusive AI for the whole population requires careful consideration of inclusive design built upon sound ethical principles and techniques. Experience has suggested that AI-based solutions can be severely biased against people with disabilities for several reasons. This would include a lack of diverse training data that amplifies historical bias. Ongoing design and development exclusion, algorithmic bias and a lack of accessibility standards: Addressing these issues requires a concerted effort to include people with disabilities in the AI development process, ensure diverse and representative training data, and implement robust fairness and accessibility standards. By doing so, we can create AI solutions that are more inclusive and equitable.

Biography

Diana Hodgins^{1*}, Professor Iain Mc-Namara²

¹Dynamic Metrics Ltd, Codicote, Herts, UK

²Norfolk and Norwich University Hospital (NNUH), Norwich, Norfolk, UK

A data driven approach to prehabilitation and rehabilitation for hip and knee replacement patients

A patient's ability to walk has a profound effect on their health, functional ability and independence. Patients with late stage hip or knee Osteoarthritis (OA) undergo joint replacement surgery so that they can walk normally again without pain. However, patients will have adapted their gait kinematics to minimize pain, which results in certain muscles being weakened. GaitSmart, a sensor based technology that accurately measures gait kinematics in a clinic was used to collect data in a number of studies on hip and knee replacement patients. For hip OA the range of motion at the hip joint is affected, whilst for knee OA the range of motion in swing and stance are affected. Data also shows that one year post op, only 50% of patients return to a normal gait, suggesting that rehabilitation is not optimized.

Prehabilitation prior to surgery is designed to help patients strengthen their weakened muscles in preparation for surgery, whilst rehabilitation is to strengthen weakened muscles once the joint pain has been replaced.

Identifying gait abnormalities and providing corrective exercises is conventionally performed by physiotherapists and outcomes are subjective questionnaires, such as Oxford Hip Score (OHS) or Oxford Knee Score (OKS) and EQ5D.



Diana obtained her degree in Mechanical Engineering and her PhD in solid state gyroscopes from the University of Hertfordshire (UH). Diana has 28 patents granted on solid state sensors and more recently on medical applications relating to the use of these sensors and more than 50 publications to her name. In 2000 Diana was awarded an MBE for services to SMEs in the region. Diana works with healthcare providers to deliver high quality care for falls prevention and joint replacement rehabilitation. This has led to NICE Guidance in the UK for their product, GaitSmart.

This paper describes an alternative, fully automated, data driven approach using GaitSmart. The range of motion for both hips and knees are presented in an easy to understand report, using traffic light coding and scoring for the clinician and patient. This data is used to generate a musculoskeletal model from which weakened muscles are identified and an optimal set of exercises determined. Patients receive their report with the exercises and ask to perform the exercises daily at home. In rehabilitation, this process is repeated 4 times, each with a 4 week interval to give time for the muscles to strengthen.

A pilot randomized control trial on post op hip and knee replacement patients was carried out at NNUH, comparing physiotherapy led rehabilitation with this novel data driven approach. The results improvements in gait kinematics for hip and knee patients combined were greater in the GaitSmart intervention group than the physiotherapy group. This resulted in a clinically meaningful increase in gait speed, which was statistically significant. For the patient reported outcomes, the change in OKS was statically significant for the intervention group whilst for the OHS it was greater for the control group. For the EQ5D-5L there was no clear distinction between the two groups. Thus, the intervention programme was more effective than physiotherapy in meeting the primary goal of helping patients to walk better.

A new study is currently underway offering patients a prehabilitation programme, so that their muscles are stronger before surgery. Preliminary findings on this will also be presented.

Dimitrios Giotikas MD, PhD Consultant Surgeon in Trauma & Orthopaedics

LIPS Battersea Healthcare Clinic, London, United Kingdom

Mediterraneo Hospital, Athens, Greece

Safety and efficacy of distraction osteogenesis for height dysphoria

Distraction osteogenesis for stature increase treatment really pushes patients, treating teams and implants to their limits.

This is because distraction osteogenesis for stature increase is done simultaneously bilaterally, and involves longer lengthening compared to its other clinical applications. Patient's personality traits like symptoms of depression, anxiety and obsession, can hinder the patient's compliance during the course treatment as well as their ability to realistically appreciate the clinical outcome. These symptoms are all part of the condition of height dysphoria, which is part of the spectrum of Body Dysmorphic Disorders (BDD).

In addition to the above, stature increase is marketed and advertised heavily as a cosmetic procedure and this type of marketing often creates false or non-realistic expectations.

For these reasons, in our opinion, success and failure of distraction osteogenesis in stature increase treatments should be measured with different standards than its other clinical applications.

In this study, we present the most common modes of failure and dissatisfaction of distraction osteogenesis in stature increase treatments, and how the efficacy should be measured with regard to the improvement of BDD symptoms, restoration of normal limb function and subjective patient satisfaction.

Biography



Dr. Dimitrios Giotikas is the founder and Clinical director of Giotikas Clinic in London, UK and Athens, Greece. His clinical expertise is focused on limb reconstruction (including limb lengthening, the management of bone infections and limb deformities), knee osteotomy surgery for arthritis and complex orthopaedic trauma. Dimitrios started his career as medical officer of the Greek Army. He later worked as specialist and consultant in Cambridge and Oxford University hospitals in the UK, where he specialized in limb reconstruction. He has a PhD on knee surgery and has published and presented numerous studies in the fields of his clinical expertise.

Biography

Elissa J. Charbonneau

Chief Medical Officer, Encompass Health,
Birmingham, AL, USA

Exploring the use of technology in inpatient rehabilitation hospitals

Encompass Health is the USA's largest provider of inpatient rehabilitation, discharging over 230,000 patients per year from our over 170 inpatient rehabilitation hospitals across the country. In this presentation, we will share how rehabilitation professionals implement, sustain, and use innovative technologies to improve patient engagement and outcomes. The focus will be on how innovative technologies may impact patients' functional independence, instrumental activities of daily living, and quality of life. Using neural plasticity and translating knowledge into practice results in improved outcomes for our patients. We have developed a system of ongoing technology evaluation and implementation that benefits our patients. Examples of current technology and videos will be shared with the attendees.



Dr. Charbonneau studied Biological Sciences at Cornell University, USA, then attended the State University of New York, where she graduated with an MS in 1984, focusing on Epidemiology and Natural Sciences. She attended medical school at the New York Institute of Technology College of Osteopathic Medicine, graduating in 1988 and went on to complete a residency in Physical Medicine and Rehabilitation at Temple University/Moss Rehab, where she was Chief Resident in her final year. She has over 30 years of experience as a board-certified physiatrist and currently oversees the quality of clinical care at Encompass Health, where she has been Chief Medical Officer since 2015. She holds an academic appointment as an associate professor at Tufts University, Dept. of Physical Medicine and Rehabilitation.

Biography

Elizabeta Popova Ramova

Faculty for Medical Sciences, MIT University
Skopje, Republic of North Macedonia

Physical therapy modalities and its effect in cosmetology clients treatment

The use of devices in skin treatment in cosmetology and body shaping has explicitly grown in line with the progress of the application of physical procedures with software programs. The principles of operation of these devices are primarily their biophysical effect on the human organism.

Material and Method: The physiatrist and dermatologist, the physiotherapist and the cosmetologist should have education about the physical effects on the organism, the biological effect, the indications and the side effects that could occur. In addition to the application, they should also know the selection of clients, so that the client is not harmed. The physical modalities light, heat, cold, vibration, ultrasound, electrostimulation, ozone therapy, cryolipolysis, shock wave therapy as well as radiofrequency therapy are part of the therapies that are used.

Results: The application of clients should go through the process of approval for use and safety at work for the therapist and the client. The therapist should be a medical professional who has a certificate and competences for application according to the level of education, unlike students without medical education.

Discussion: Cosmetology today has great importance in anti-aging treatments for the skin, but also in body shaping treatments. In every modern country, the application is carried out by medical personnel, who know the mechanism of action, indications and contraindications for treatment.



Elizabeta Popova Ramova has completed her PhD in Medicine at the Department of PM&Reha, Faculty of Medicine Nis, University of Nis, R.Serbia in 2010. She has been engaged in educational activity since 2005. She worked as a professor at the Medical School from 2007 to 2018. In 2020, she was selected as an Assistant Professor at MIT University, in the scientific field of PM&Reha. Scientific activity: Published 210 studies, 17 of which have an impact factor. She was on a visiting study in Germany in 1997, 2000 and in ISICO, Italy in 2016. Foreign language uses: Serbian, English, German. She has several certificates for active participation in international congresses, conferences, a license for doctor's practice, for low energy laser treatment, musculoskeletal echosonography, aromatherapy and nutrition. Scientific opus: spinal deformities, pain management, alternative methods based on medical evidence, non-pharmacological treatment. Member of ISPRM, Cochran Rehabilitation, Editorial Board of 14 sciences journals abroad.

Conclusion: High knowledge of the biophysiological effect of physical modalities such as light, electricity, heat light, etc. is part of the educational process of every modern cosmetologist, accurately determining the levels of competence.

Keywords: Physical Modalities, Cosmetology, Education.

Biography

Igor G. Belen'kiy^{1,2*}, Boris A. Maiorov^{1,2}, Gennadii D. Sergeev^{1,2}, David A. Isakhanyan¹

¹Department of traumatology and orthopedics, St. Petersburg I.I. Dzhanelidze Research Institute of Emergency Medicine, St. Petersburg, Russia

²Department of traumatology and orthopedics, St. Petersburg State University, St. Petersburg, Russia

Intramedullary nailing of trochanteric fractures: The analysis of the radiological anatomy

The incidence of implant-associated complications after the intramedullary osteosynthesis of proximal femur fractures exceeds 50%. Poor reduction and incorrect implant positioning significantly increase the risk of mechanical complications and the frequency of unsatisfactory treatment outcomes.

The aim of the study was to evaluate reduction after the intramedullary nailing of proximal femur fractures using the developed radiological criteria, and to determine the association between the quality of the reduction, implant position and fracture type.

Methods: In a retrospective single-center study we analyzed the primary X-rays of 108 patients with type 31A fractures. The position of the fragments and implants was considered satisfactory if the value of the neck-diaphyseal angle was more than 125°, anteversion did not exceed 20°, medial diastasis was not more than 10 mm, and there was no negative medial support, no femoral neck lengthening of more than 10 mm compared with the healthy side, and no penetration of the blade into the joint. Patients were divided into three groups



Dr. Belen'kiy studied medicine at Kursk State Medical Institute (Kursk, Russia) and graduated in 1985. After completing his residency in trauma surgery and orthopedics, he moved to Saint Petersburg, Russia, and began working as a trauma surgeon at general hospital. In 1992, he was transferred to the position of head of the traumatology department, which he held until 2021. Since 2021, he has been the head of the Department of Traumatology and Orthopedics, at the St. Petersburg I.I. Dzhanelidze Research Institute of Emergency Medicine. In 1999, he obtained his PhD and in 2013, he defended his doctoral thesis. He has published more than 120 research articles, 35 of which are in WoS or Scopus journals.

according to the fracture type. We analyzed and compared the proportions of satisfactory and unsatisfactory radiological results within the groups and between them.

Results: Satisfactory reduction was noted in 83 patients (76.9%) out of 108, unsatisfactory — in 25 patients (23.1%), and 16 patients (14.8%) had incorrect implant position. Patients with type 31A1 fractures were 3.5 times less likely to have an unsatisfactory reduction than patients with type 31A2 fractures (OR 3.511, 95% CI 1.202–10.261) and 6.7 times less likely to have an unsatisfactory reduction than patients with type 31A3 fractures (OR 6.714, 95% CI 1.685–26.752). The probability of incorrect implant positioning was 6 times higher in type 31A3 fractures than in type 31A1 fractures (OR 6,000, 95% CI 1,410–25,528).

Conclusion: Types A2 and A3 fractures of the proximal femur were the most challenging in terms of achieving accurate reduction and correct implant positioning. Erroneous implant selection led to complications, reducing patients' quality of life. Using specific criteria for intraoperative radiological assessment of proximal femur reduction quality may help to improve clinical outcomes.

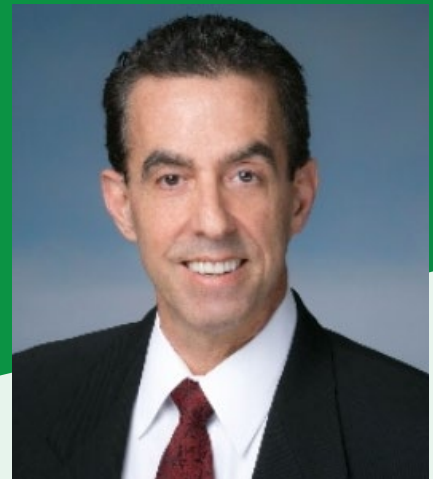
Jay E. Spector, DPM, FAAPSM, CAQ in Sports Medicine

American Academy of Podiatric Sports Medicine (AAPSM), United States

Indications for shockwave in teenage athletes

To understand the treatment, you first must understand the science behind the use of shockwave therapy. Young athletes are specializing in sport at an early age and their physical training demands often get in the way of their natural development during adolescent and teen years, thus leading to injuries. This discussion will help the practitioner have the tools to keep these young athletes training and competing without having to tell them that they need to shut down for a season.

Biography



Dr. Spector studied Economics at McGill University, Montreal, Canada and graduated in 1986. He went to the New York College of Podiatric Medicine and graduated in 1992. He completed a surgical residency at the Georgia Podiatric Surgical Residency in Atlanta, GA. He is immediate past president of the American Academy of Podiatric Sports Medicine and is the Scientific Director of their yearly Stand Alone Meeting in Sports Medicine. He has published several papers and is a frequent lecturer both in the United States and Europe. Dr Spector is in private practice at Atlanta Sports Podiatry in Johns Creek, GA, USA.

Marcia J. Scherer, PhD, MPH, CRC, FACRM

President, Institute for Matching Person & Technology

Professor of Physical Medicine and Rehabilitation

University of Rochester School of Medicine & Dentistry

Editor, Disability and Rehabilitation: Assistive Technology

Co-Editor, The Rehabilitation Science in Practice Series, CRC Press, United States

The technology we have, the technology we use, the technology we want

Technology is evolving and having a colossal and important impact on rehabilitation. From artificial intelligence summaries of electronic medical records to precision diagnostic tools to therapeutic advances, the daily routine and toolkit of the rehabilitation provider has changed drastically over a very short time. Options presented to the recipients of our rehabilitation services have also greatly expanded and have enabled individuals of all ages with disabilities and chronic conditions to have products and services tailored to their unique situations to enable lives of quality to an extent not possible until recently. In this context, we can be seen as moving from an information age to include an age of individuality where ever more abundant technology options can make meeting individual needs and preferences more achievable. However, with choice can come choice overload. And with so many options available, it is crucial to select the option that meets the

Biography



Dr. Scherer is founding President of the Institute for Matching Person & Technology. She is also Professor of Physical Medicine and Rehabilitation, University of Rochester Medical Center, Editor-in-Chief of the journal Disability and Rehabilitation: Assistive Technology and Co-Editor of the CRC Press book series, Rehabilitation Science in Practice Series. Dr. Scherer developed the Matching Person and Technology model and assessments that are used globally to guide technology selection and outcomes measurement. Marcia authored a trilogy of books describing the impact of various categories of technology devices and services on people's life quality. She has authored, edited, or co-edited ten other books. She and her collaborators have published 98 articles on disability and rehabilitation in peer-reviewed scientific journals, 58 published proceedings papers, and 43 book chapters. She served as co-convenor of the World Health Organization's 2017 global assistive technology summit which led to a set of journal articles fundamental in the World Health

unique person's needs and preferences while accounting for both constraints and supports in the physical and social environment as well as the available technology characteristics. While this is true for the individuals we serve, it is also true for us as professionals and providers. Individualization within wider collaboration and integrative service delivery will largely determine our success.

Organization's General Assembly
2018 resolution to improve global
access to assistive technology.

Marcos Brioschi

American Academy of Thermology, Chairman,
Greenville, South Caroline, USA

PPCR, Harvard T.H. Chan School of Public
Health, Boston, MA, USA

Infrared imaging in physical rehabilitation: A technological approach for veterans and military medicine

Infrared imaging has emerged as a cutting-edge technology in physical medicine and rehabilitation, offering a non-invasive, real-time, and quantitative assessment of physiological and biomechanical dysfunctions. This presentation will explore its role in early detection of musculoskeletal injuries, chronic pain syndromes, and post-traumatic conditions, particularly in military personnel and war veterans. In the military field, infrared imaging is transforming rehabilitation strategies by identifying vascular and neuromuscular dysfunctions resulting from high-impact injuries, combat trauma, and prolonged physical exertion. This technology enhances the monitoring of post-operative recovery, neuropathies, myofascial syndromes, and thermoregulatory imbalances in veterans. Furthermore, infrared imaging allows for a precision-guided rehabilitation approach, optimizing neuromodulation protocols, physiotherapy interventions, and biomechanical adjustments. Its integration with AI-based analytics is revolutionizing rehabilitation by providing predictive modeling for injury recovery, reducing long-term disability risks. The presentation will discuss clinical cases, research applications, and practical protocols for incorporating infrared imaging into rehabilitation workflows. Attendees will gain insights into evidence-based methodologies, advantages over

Biography



Marcos Brioschi is the Chairman of the American Academy of Thermology and a Fellow in Clinical Research at Harvard University. He is a surgeon who earned his degree from the Federal University of Paraná (1996), a Master's degree in Medicine from Evangelical University of Paraná (2000), a Ph.D. in Surgery (2003), and a Ph.D. in Mechanical Engineering (Biothermodynamics) from the Federal University of Paraná (2010). He also completed a postdoctoral position in the Neurology Department at the Faculty of Medicine, Hospital de Clínicas, University of São Paulo. His areas of expertise include Surgery, Forensic Medicine, and Clinical Thermology (infrared imaging, thermography). His research interests focus on pain treatment, telemedicine, health technology, and surgery. He has authored over 391 scientific papers, which have been cited in more than 294 articles in the medical community. He currently serves as a reviewer for more than 16 international medical journals and as the coordinator of the Medical Thermography Committees for the Brazilian Association of Physical Medicine

traditional diagnostic tools, and its future role in preventive rehabilitation for high-risk populations, including soldiers and first responders.

and Rehabilitation, the Brazilian Society for the Study of Pain, the Brazilian Association of Forensic Medicine, and the Brazilian Society of Tissue Regeneration. He also holds the position of President of the PanAmerican Thermology Society and the Brazilian Thermology Medical Association, and he is an honorary member of the American Academy of Thermology.

Biography

Prof. Marcos Leal Brioschi MD PhD

Chairman, American Academy of Thermology,
Researcher, Harvard T.H. Chan School of
Public Health

AI-driven infrared imaging and telerobotics in orthopedics: Enhancing diagnostics, surgical precision, and postoperative care

This presentation explores the transformative potential of AI-driven infrared imaging in orthopedic practice, alongside emerging applications of telerobotics and tele rounding for postoperative evaluation. Infrared imaging, augmented by machine learning algorithms, enables non-invasive detection of musculoskeletal pathologies through circulatory pattern analysis. Case studies highlight its utility in:

- **Sports Medicine:** Early identification of ACL and meniscal injuries via inflammatory anomalies, achieving diagnostic sensitivity of 91.67% and specificity of 85.71% in preliminary trials.
- **Oncology:** Delineating metabolic activity in bone and soft-tissue tumors, aiding preoperative planning and recurrence monitoring.
- **Rheumatology:** Quantifying joint inflammation in rheumatoid arthritis, correlating inflammatory asymmetry with disease progression.
- **Wound Care:** Predicting surgical incision healing dynamics through real-time metabolic gradients, with promising integration into AI-driven decision systems.

Concurrently, tele robotic platforms enhance surgical precision through real-time intraoperative feedback, reducing complications in arthroplasty and spinal procedures. Postoperatively, telerounding—supported



Marcos Brioschi is the Chairman of the American Academy of Thermology and a Fellow in Clinical Research at Harvard University. He is a surgeon who earned his degree from the Federal University of Paraná (1996), a Master's degree in Medicine from Evangelical University of Paraná (2000), a Ph.D. in Surgery (2003), and a Ph.D. in Mechanical Engineering (Biothermodynamics) from the Federal University of Paraná (2010). He also completed a postdoctoral position in the Neurology Department at the Faculty of Medicine, Hospital de Clínicas, University of São Paulo. His areas of expertise include Surgery, Forensic Medicine, and Clinical Thermology (infrared imaging, thermography). His research interests focus on pain treatment, telemedicine, health technology, and surgery. He has authored over 391 scientific papers, which have been cited in more than 294 articles in the medical community. He currently serves as a reviewer for more than 16 international medical journals and as the coordinator of the Medical Thermography Committees for the Brazilian Association of Physical Medicine and Rehabilitation, the Brazilian

by wearable sensors and telehealth interfaces—facilitates remote monitoring of rehabilitation progress, vital signs, and early complication detection. Data from robotic post-operative demonstrate 30% shorter hospital stays and accelerated return to daily activities when combined with AI-guided recovery protocols.

Future directions emphasize hybrid models integrating infrared imaging biomarkers with digital twins for personalized treatment simulations. Ethical considerations, including AI transparency and equitable access to robotic technologies, are critically addressed.

Keywords: AI-Driven Infrared Imaging, Thermography, Telerobotics, Telerounding, Orthopedic Diagnostics, Postoperative Care.

Society for the Study of Pain, the Brazilian Association of Forensic Medicine, and the Brazilian Society of Tissue Regeneration. He also holds the position of President of the PanAmerican Thermology Society and the Brazilian Thermology Medical Association, and he is an honorary member of the American Academy of Thermology.

Biography

Matt Werd, DPM, FACSM

American Academy of Podiatric Sports
Medicine, Lakeland, Florida, USA

Super shoes and athletics: Update 2025 – What does the evidence say?

Super shoes - also referred to as advanced footwear technology - continue to be a hot topic in athletics and sports medicine but are not without some controversy and misunderstanding amongst both athletes and healthcare providers. Benefits have been documented to be performance-enhancing, but risks have been documented to include reports of lower extremity injuries.

A thorough review and discussion of this new technology should be both relevant and interesting to attendees. A contemporaneous update will be presented, including applicable research and evidence-based studies.

Rules for appropriate use of super shoes in competition are now in effect through governing organizations and will be discussed.

Presentation will include a brief historical discussion, current concepts, and possible future emerging concepts.



Dr. Werd has led a distinguished career in sports medicine and surgery of the foot and ankle and he continues to serve his profession with distinction at the highest level in Lakeland, Florida. He is Past-President and Fellow, American Academy of Podiatric Sports Medicine (AAPSM). He serves as a team physician for youth, high school, collegiate, and professional athletes. Former NCAA Division 1 collegiate athlete. He won Robert Barnes Distinguished Service Award Recipient, AAPSM, 2014. Lifetime Achievement Award Recipient, AAPSM, 2024. Lead Author and Editor: Athletic Footwear and Orthoses in Sports Medicine, Springer, NYC. He earned his Doctor of Podiatric Medicine from Scholl College of Podiatric Medicine, Chicago, in May 1993, graduating Magna Cum Laude with a 3.9 GPA and ranking in the top 7% of his class. He holds an Honors Bachelor of Arts in Biology and a Bachelor of Arts in Chemistry, both awarded in May 1989 from Indiana University, Bloomington. In 1987, he completed a Pre-Med Biology Summer Session at Harvard College, Cambridge. Since July 1995, he has owned

and practiced at Odro, Fazekas, and Werd, PA. Licensed in Florida (PO 2458) since 1994, he is a diplomate of the American Board of Foot and Ankle Surgery, certified in Foot Surgery (1997, recertified through 2027) and Reconstructive Rearfoot, Ankle, and Leg Surgery (1998, recertified through 2028). Dr. Werd has held medical staff privileges at Lakeland Regional Health since 1995, where he was Chief of Podiatric Surgery and a member of the Operating Room Committee from 2000 to 2017. He has also served at Lakeland Surgical and Diagnostic Center since 1998, including on the Medical Advisory Committee from 2007 to 2009. Dr. Werd is a nationally recognized leader in podiatric sports medicine, twice named among the Top 25 Most Influential Podiatrists in America by PMNews (2010, 2017). He received the AAPSM Lifetime Achievement Award in 2024 and the Dr. Robert Barnes Distinguished Service Award in 2014. A Past-President of the American Academy of Podiatric Sports Medicine (2007–2008), he is also a Fellow of the ACSM, ACFAP, and AAPP. He has served as Team Podiatrist for Florida Southern College since 2000 and has been an active member of the ABFAS Certification Exam Committee and NBPME panel. Dr. Werd is Lead Editor of Athletic Footwear and Orthoses in Sports Medicine (2010, 2017) and serves on the American Medical Athletic Association Clinic Advisory Board. He is a graduate of Leadership Lakeland (Class XX) and Leadership Polk (Class IV). The largest Physical Medicine Conferences in the Asia Pacific region is happening on September 15-17, 2025 at London, UK. It is the meeting place of all international Physiatrists.

Biography

Matt Werd, DPM, FACSM

American Academy of Podiatric Sports
Medicine, Lakeland, Florida, USA

Sports medicine pearls of the foot and ankle

Sports injuries to the foot and ankle are some of the most common athletic injuries but are sometimes mis- diagnosed and/or mis-treated. An early and accurate diagnosis will aid in a safe and expedited treatment and earlier return to sport.

Presentation will include a brief historical discussion, current concepts, and emerging concepts and technologies available to ensure appropriate diagnosis and treatment of the foot and ankle in sport.



Dr. Werd has led a distinguished career in sports medicine and surgery of the foot and ankle and he continues to serve his profession with distinction at the highest level in Lakeland, Florida. He is Past-President and Fellow, American Academy of Podiatric Sports Medicine (AAPSM). He serves as a team physician for youth, high school, collegiate, and professional athletes. Former NCAA Division 1 collegiate athlete. He won Robert Barnes Distinguished Service Award Recipient, AAPSM, 2014. Lifetime Achievement Award Recipient, AAPSM, 2024. Lead Author and Editor: Athletic Footwear and Orthoses in Sports Medicine, Springer, NYC. He earned his Doctor of Podiatric Medicine from Scholl College of Podiatric Medicine, Chicago, in May 1993, graduating Magna Cum Laude with a 3.9 GPA and ranking in the top 7% of his class. He holds an Honors Bachelor of Arts in Biology and a Bachelor of Arts in Chemistry, both awarded in May 1989 from Indiana University, Bloomington. In 1987, he completed a Pre-Med Biology Summer Session at Harvard College, Cambridge. Since July 1995, he has owned and practiced at Odro, Fazekas, and

Werd, PA. Licensed in Florida (PO 2458) since 1994, he is a diplomate of the American Board of Foot and Ankle Surgery, certified in Foot Surgery (1997, recertified through 2027) and Reconstructive Rearfoot, Ankle, and Leg Surgery (1998, recertified through 2028). Dr. Werd has held medical staff privileges at Lakeland Regional Health since 1995, where he was Chief of Podiatric Surgery and a member of the Operating Room Committee from 2000 to 2017. He has also served at Lakeland Surgical and Diagnostic Center since 1998, including on the Medical Advisory Committee from 2007 to 2009. Dr. Werd is a nationally recognized leader in podiatric sports medicine, twice named among the Top 25 Most Influential Podiatrists in America by PMNews (2010, 2017). He received the AAPSM Lifetime Achievement Award in 2024 and the Dr. Robert Barnes Distinguished Service Award in 2014. A Past-President of the American Academy of Podiatric Sports Medicine (2007–2008), he is also a Fellow of the ACSM, ACFAP, and AAPP. He has served as Team Podiatrist for Florida Southern College since 2000 and has been an active member of the ABFAS Certification Exam Committee and NBPME panel. Dr. Werd is Lead Editor of Athletic Footwear and Orthoses in Sports Medicine (2010, 2017) and serves on the American Medical Athletic Association Clinic Advisory Board. He is a graduate of Leadership Lakeland (Class XX) and Leadership Polk (Class IV). The largest Physical Medicine Conferences in the Asia Pacific region is happening on September 15-17, 2025 at London, UK. It is the meeting place of all international Physiatrists.

Biography

Mel B. Glenn, MD

Department of Physical Medicine and Rehabilitation, Harvard Medical School, Boston, MA, United States

Department of Physical Medicine and Rehabilitation, Spaulding Rehabilitation Hospital, Boston, MA, United States

NeuroRestorative, Dedham, MA, United States

Pharmacologic approaches to attention and alertness after traumatic brain injury

Psycho pharmacologic agents are best prescribed based on the underlying diagnosis rather than the symptoms. Before prescribing medications for attention and alertness after brain injury, possible contributing agents should be withdrawn if possible. Other therapeutic approaches such as treatment of sleep disorders and cognitive rehabilitation should be undertaken. The evidence will be presented for stimulant drugs such as methylphenidate, amphetamine, and modafinil; acetylcholinesterase inhibitors such as donepezil, rivastigmine and galantamine; medications for sleep disorders such as melatonin and trazodone; and other drugs such as amantadine in the treatment of disorders of attention and alertness following brain injury.



In 1982, after completing his training, Dr. Glenn joined the faculty of Tufts University School of Medicine. In 1993, Dr. Glenn became Professor and Chairman of the Department of Rehabilitation Medicine at Boston University School of Medicine and Chief of Rehabilitation Medicine at Boston Medical Center. In 1998, he joined the Department of Physical Medicine and Rehabilitation (PM&R) at Spaulding Rehabilitation Hospital in Boston. He is Associate Professor in the Department of PM&R at Harvard Medical School. He is Massachusetts, Rhode Island, and National Medical Director of NeuroRestorative. He has published more than 60 peer-reviewed journal articles and book chapters.

Michel Janet Denes (Shelly) PT, C/NDT, CFPS, CGCP228

Denes Physical therapy consulting LLC,
United States

The sleep-fall connection: The impact on older adults

This presentation dives into the evidence-based connection between sleep, pain, and mobility, equipping you with practical tools to assess and address sleep-related factors with geriatric patients. Learn to spot sleep-related contributors to fall risk, incorporate simple sleep screening tools, and differentiate fatigue-driven posture issues from mechanical problems. You'll gain actionable strategies to educate patients, improve adherence, and tailor interventions that enhance both sleep and function.

Biography



Shelly Denes, PT, C/NDT, CFPS, CGCP is an expert in fall prevention and neuro-rehab with more than 30 years of experience treating patients with hemiplegia, neurological diseases, TBI, and SCI. She has a special interest in Long COVID and the impact of chronic inflammation and sleep deprivation in rehab. Her expertise has been presented through seminars, expert witness work and consulting. She also sits on the Michigan Fall Prevention Coalition committee. Shelly Denes is a graduate of University of Michigan's PT program. She helped create the certifications for 'Fall Prevention Specialist' and 'Geriatric Care Professional' with Evergreen Certifications and sits on their advisory board.

Biography

Michel Janet Denes (Shelly) PT, C/NDT, CFPS, CGCP228

Denes Physical therapy consulting LLC, United States

Understanding POTS in the world of physiotherapy

This presentation dives into the world of POTS (Postural Orthostatic Tachycardia Syndrome) and its impact in our patients in physiotherapy. Often POTS goes misdiagnosed with patients that have poor standing tolerance, postural hypotension and excessive fatigue without much understanding of these symptoms. Sometimes POTS maybe their underlying issue that needs to be understood, evaluated and then the proper interventions need to be implemented before further rehab for other issues will be successful. With this seminar, we will delve into the presentation, evaluation and appropriate interventions for patients with underlying POTS symptoms as appropriate.



Shelly Denes, PT, C/NDT, CFPS, CGCP is an expert in fall prevention and neuro-rehab with more than 30 years of experience treating patients with hemiplegia, neurological diseases, TBI, and SCI. She has a special interest in Long COVID and the impact of chronic inflammation and sleep deprivation in rehab. Her expertise has been presented through seminars, expert witness work and consulting. She also sits on the Michigan Fall Prevention Coalition committee. Shelly Denes is a graduate of University of Michigan's PT program. She helped create the certifications for 'Fall Prevention Specialist' and 'Geriatric Care Professional' with Evergreen Certifications and sits on their advisory board.

Biography

Ron Blehm PT, CEEAA, CSFI, CFPS, FFT

EEI Physio, LLC Minneapolis, MN 55406,
United States

Identifying functional 'red flags' in the 40 to 65 year old patient

Functional concerns related to falls, frailty and failure-to-thrive are often evident up to a decade before diagnosis or impairment. Rehab professionals often miss the opportunity to pre-emptively identify these issues through validated testing in the 40–65 year old patient, thereby missing opportunities to intervene sooner to preserve function and long-term quality of life.

Guidelines and recommendations for, functional assessments have been in place for decades. Studies show that the vast majority of rehab providers report high awareness of these recommendations (PMID: 25767167) yet frequently, clinical practice does not reflect this (PMID: 33476185 and PMID: 36827678). Rehab Professionals should be well-versed in identifying potentially life-altering disease processes; while early referral to therapy is a known benefit for patients, there is a gap in care for some patients (PMID: 24481484) and when we fail to quickly and accurately identify these concerns, patients and the health care system at large, is left to bear the burden of more expensive, long-term disability or even premature mortality. (PMID: 27039014)

Discussion will include the significance of the following key points:

- Ability to recognize potentially life-altering concerns in the clinical setting
- Difference between pathology and function
- The ramifications of screening for mortality rather than diagnosis
- How to reinforce the significance of these screenings with primary care physicians



Ron Blehm continues daily clinical practice and is the owner of EEI Physio, LLC. In addition to clinical work: Co-Op Study 470: Persian gulf war unexplained illness PMID: 11384792 & 12636462. Non-pharmacological interventions for the management of fibromyalgia. PMID: 16945248. In-clinic testing and assessments for delaying disability in people with parkinson disease using a sensorimotor agility exercise program PMID: 19228832. Performing alpha and beta patient trials for mini BEST test PMID: 20461334 & PMID: 23547173. Effects of group, individual, and home exercise in persons with parkinson disease: A randomized clinical trial PMID: 26308937.

Biography

Shaomin Shi

Medical College of Wisconsin, United States

Selective denervation for persistent knee pain after total knee arthroplasty: Long-term outcomes

Despite the overall success of Total Knee Arthroplasty (TKA), up to 20% of patients report dissatisfaction, often due to persistent pain. One potential cause is neuroma formation in the sensory nerve branches of the knee. We found that up to 9.7% of primary TKA patients and 21% of revision cases experienced persistent knee pain attributable to neuromas. This study retrospectively evaluates the long-term outcomes of selective denervation as a treatment for post-TKA neuroma-related pain.

Between 2011 and 2024, we performed 295 selective denervation procedures. This study followed 50 patients with persistent neuroma pain unresponsive to conservative treatment. Diagnosis was confirmed by identifying a trigger point with a positive Tinel's sign and at least 50% pain relief following local anesthetic nerve blocks. The cohort included 37 women and 13 men, with a mean age of 63 years (range: 30-83). Prior to surgery, all patients underwent desensitization with sequential nerve blocks, anesthetic patches, and oral medications (gabapentin or pregabalin). Those with persistent symptoms underwent denervation with multiple neurectomies.

At an average follow-up of 24 months (range: 16-38 months), outcomes were assessed using the Visual Analog Scale (VAS) for pain and the Knee Society Score (KSS). Of the 50 patients, 32 (64%) reported excellent results, 10 (20%) good, 3 (6%) fair, and 2 (4%) no improvement. The mean VAS score improved significantly from 9.4 ± 0.8 to 1.1 ± 1.6 ($P \leq 0.001$), and the mean KSS increased from 45.5 ± 14.3 to 94.1 ± 8.6 .



Dr. Shao-Min Shi joined the Department of Orthopaedic Surgery in Medical College of Wisconsin in 1992 as an assistant professor in 2007 as a distinguished professor. After receiving his Doctor of Medicine Degree from Xian medical school, China in 1973, Dr. Shi completed his orthopaedic surgery residency at the First Affiliated Hospital in Xian. He then served as an associate professor of Orthopaedic Surgery and Director of Hand Surgery before coming to the United States in 1988, completing Hand Surgery Fellowship in Grand Rapids, Michigan. In 1991, Dr. Shi began a clinical fellowship at the Christine M. Kleinert Institute for Hand and Microsurgery in Louisville, Kentucky, where he was awarded a hand surgery scholarship. He received his master's degree in 1988 and PhD in orthopaedic surgery in 1992. A member of the American Society for Reconstructive Microsurgery, Dr. Shi's clinical interests/research include hand and microsurgery. Dr. Shi also focuses on clinical treatment and research of post-surgical neuroma pain and knee chronic extensor mechanism rupture after TKA.

($P \leq 0.0001$). Three patients (6%) required a second neurectomy due to recurrent pain and subsequently achieved excellent relief. Two cases of superficial peri-incisional hyperemia resolved with wound care; no deep infections occurred.

Post-TKA neuroma pain is an under-recognized source of discomfort and disability. Our findings suggest that selective denervation provides effective and durable pain relief, making it a viable long-term solution for patients with persistent post-surgical pain.

Biography

Dr Subramanya Adiga

Consultant & Clinical Head, Rehab Medicine department, Middlemore hospital, Auckland, New Zealand

Honorary Senior lecturer, Faculty of Medicine, University of Auckland, Auckland, New Zealand

Collateral sprouting in the Peripheral Nervous System (PNS) – The silent savior

This is a discourse on the less known phenomenon of Collateral Sprouting (CS) in the Peripheral Nervous System (PNS), including the author's original ideas & summary of articles published by the author in this field recently. The talk includes a general description of CS covering what is known, what is not known and what is not well researched & emphasized. It will also cover author's original ideas about how the CS is working silently in so many areas hitherto unrecognised as well as the potential uses of this in future with well-designed interventions based on CS to reduce neurological deficits & disability resulting from more central lesions. This knowledge helps the clinician to avoid misinterpretation of clinical and neurophysiological observations; therefore, any management plans and patient counselling will be more appropriate.



Dr Adiga obtained his basic medical degree from KIMS Hubballi (Karnataka, India) in 1988 and achieved further qualifications including MS (Orthopaedics) from the University of Bombay, FRCS Ed & CCT (Rehab Medicine) from the UK and FAFRM & FASLM in Australasia. He is practicing Rehab Medicine as Consultant & Clinical Head at Middlemore hospital, Auckland, New Zealand. He is honorary Senior lecturer in the Faculty of Medicine at University of Auckland, New Zealand. His clinical interests include neurological & Musculo-skeletal rehabilitation, pain & spasticity interventions and lifestyle medicine. His research interests include developing interventions based on CS, application of trigonometric principles in measuring prosthetic hip component implantation angles and exploration of hidden causes of prosthetic hip instability. He has current publications & presentations in some of these areas while the others are in progress.

Biography

Dr Subramanya Adiga

Clinical head, Rehab medicine, Middlemore hospital, Auckland, New Zealand

Senior lecturer, Faculty of medicine, University of Auckland

Private practice: Pain & Concussion Clinics (IntegRehab MedConsults, New Zealand)



Acute nerve compression syndromes

Acute & subacute nerve compression syndromes are encountered frequently as isolated entities or as a component or complication of other clinical conditions. Typical examples include compartment syndrome, tourniquet palsy and nerve compression in relation to injuries like acute dislocation of lunate.

While traumatic injuries to nerves are well classified and studied, the same is not true of acute compression neuropathies. There are no classification systems or good guidelines for investigation & management of these conditions. The existing literature is very limited and consists of case reports, series and reviews of such heterogenic reports.

Based on his literature study & own experience, the author is making a case for using classification systems like Seddon's & Sunderland's and make management decisions based on such a classification with serial neurological examination and appropriate & timely use of neurophysiological studies (electromyography & nerve conduction studies) to guide timely decisions about nerve exploration, reconstruction and salvage surgery.

After discussing these general principles, further attention will be paid to two major individual classes of acute nerve compression syndromes-tourniquet palsies and compartment syndrome related nerve

Dr Adiga obtained his basic medical degree from KIMS Hubballi (Karnataka, India) in 1988 and achieved further qualifications including MS (Orthopaedics) from the University of Bombay, FRCS Ed & CCT (Rehab Medicine) from the UK and FAFRM & FASLM in Australasia. He is practicing Rehab Medicine as Consultant & Clinical Head at Middlemore hospital, Auckland, New Zealand. He is honorary Senior lecturer in the Faculty of Medicine at University of Auckland, New Zealand. His clinical interests include neurological & Musculo-skeletal rehabilitation, pain & spasticity interventions and lifestyle medicine. His research interests include developing interventions based on CS, application of trigonometric principles in measuring prosthetic hip component implantation angles and exploration of hidden causes of prosthetic hip instability. He has current publications & presentations in some of these areas while the others are in progress.

compression syndromes, with a particular attention to the retroperitoneal haematomas (Iliacus &/or psoas major) compressing lower limb nerves/plexus (femoral nerve &/or lumbar plexus).

Biography

Professor W S El Masri MB, BCH, FRCS, FRCP

Clinical Professor of Spinal Injuries, Keele University Emeritus Consultant Surgeon in Spinal Injuries, RJ & AH Orthopaedic Hospital – Oswestry Shropshire SY107A-GUK

Acute traumatic spinal cord injuries impact of the model of service delivery comprehensive Active Physiological Conservative Management (APCM) and rehabilitation on the range of outcomes

Traumatic Spinal Injuries can present with or without neural tissue damage. Both the force and the direction of the impact determine the presence or absence of neurological damage.

The principles of management of the injured spine and of the patients with or without neural tissue damage are very different and are likely to have an impact on the neurological and a range of other outcomes of the management.

Traumatic Spinal Cord (tSCI) and Cauda Equina Injuries (tCEI) are life-changing events with medical, physical, psychological, social, financial, vocational, environmental & matrimonial effects.

The combination of small incidence (10-50/million population), consequent pan-physiological impairment, multi-system malfunction, sensory impairment/loss, multiple disabilities, together with their non-medical effects impose challenges to patients and clinicians alike.

This challenge is magnified during the transitional period between the spinal and autonomic are flexia (shock) and the return of these reflexes. During this



Prof W S El Masri FRCS Ed, FRCP currently Hon. Clinical Professor of Spinal Injuries (SI), Keele University has trained between 1971 & 1983 in the Oxford group of hospitals, Guys & Stoke Mandeville hospitals and the USA. He obtained the first accreditation in Spinal Injuries and General Surgery in 1982. Appointed Consultant Surgeon in Spinal Injuries at the Midland Centre for Spinal Injuries in 1983. He personally treated 10,000 patients with. He published 145 manuscripts. He is author of the: Concepts of Physiological Instability of the Spinal Cord, Time related Biomechanical Instability, Micro-instability of the injured spine and published the largest series of Bladder cancer in SCI patients. He has repeatedly demonstrated and published on the discrepancy between the radiological and neurological presentation of patients in support of the hypothesis that the initial force of the impact and the quality of the management of both the injured spine and the effects of cord injury are the two major determinants of the initial neurological loss and the neurological outcome. He is Past-

period, which lasts a few days to weeks, the patient is at a much higher risk of a range of complications than following the return of autonomic and spinal reflex activity.

Fortunately with simultaneous adequate management of the injured spine together with each of the systemic effects of cord damage, by a knowledgeable well-trained and experienced team of clinicians and health care professionals; almost all complications can be prevented or diagnosed and treated before deterioration, morbidity and neurological deterioration occur.

President of the International Spinal Cord Society; Past Chairman British Association of Spinal Cord Injury Specialists and has lectured world-wide. He won many National and International awards.

Spontaneous neurological recovery is predictable and not uncommon following tSCI & tCEI provided:

- Clinicians and health care professionals treating patients are familiar with the differences in the effects and principles of management of a spinal injury in patients with spinal cord and cauda equina injury and patients without neural tissue damage or with only damage of some nerve roots
- The quality of management of the multisystem physiological impairment and malfunction to prevent systemic and iatrogenic complications is excellent. This is considering that systemic complications can cause further non-mechanical damage to neural tissues by destabilising the physiologically unstable injured neural tissue that result in additional neurological loss
- The adequacy of the management of the biomechanical instability of the injured spine to prevent further mechanical damage of the neural tissue from bony or ligamentous structures
- The presence or absence of clinical signs of sensory or sensory motor sparing at and below the level of injury
- An adequate rehabilitation program of every impaired system of the body affected by the neurological damage including the locomotor system.

In the mid-sixties Frankel and colleagues made an astute observation that with what can be described as good active physiological conservative management of the injured spine, the multisystem malfunctions to prevent prevention of systemic complications and with adequate rehabilitation, patients presenting within 14 days of injury with complete motor paralysis but sensory sparing made spontaneous motor recovery from the reactivated myotomes adjacent to the functioning dermatomes. This recovery is irrespective of the severity of the spinal injury on X Rays at admission as well as on discharge. The same observations of the the discrepancy between the radiological and neurological presentations on admission and on discharge have been made using CT and MRI by El Masri et al as well as many other international groups specialising in the management of patients with traumatic spinal cord injuries and cauda equina injuries.

The prognostic indicators of neurological recovery, its extent and the factors that prevent recovery or cause neurological deterioration as well as the role of CT and MRI will be discussed.

In the last four decades, routine surgical stabilisation and decompression have been carried out on patients with and without traumatic cord damage supported by claims that surgical intervention is necessary to prevent neurological deterioration and enhance recovery. The rationale and quality of evidence used in justifying these claims will be discussed.

Biography

Professor W S El Masri FRCS Ed, FRCP, PHF

Hon. Clinical Professor of Spinal Injuries (SI),
Keele University Emeritus Consultant Surgeon
In Spinal Injuries

The Robert Jones & Agnes Hunt Orthopaedic
(RJAH) Hospital Oswestry UK

Past President of the International Spinal Cord
Society (ISCOs)

Past President of the British Association of
Spinal Cord Injury Specialists (BASCIS)

**Acute Traumatic Spinal Cord
Injuries (TSCI): Expected
neurological outcomes following
Active Physiological Conservative
Management (APCM) and rehabilitation
are the claims for interventions on the
injured spine evidence based?**

The incidence of Traumatic Spinal Cord Injuries (TSCI) is small and ranges between 10-50/million population/year. Prior to the second WW the great majority of patients died within two years of injury. Since the 2nd WW, due to the efforts of the pioneers who dedicated their professional lives to the field of TSCI, most well managed patients have been able to lead healthy, enjoyable, dignified, fulfilling, productive and often competitive lives. Moreover many exhibit significant degrees of neurological and functional recovery locally or below the level of their injury depending on the extent of sensory sparing vicinity and/or below the level of injury. To achieve this however requires in depth understanding of the systemic effects of cord damage on the neurological and functional outcomes as well as expert simultaneous management



Professor Wagih Shafik El Masri(y) FCCS Ed, FRCP, PHF, Hon. He was Clinical Professor of Spinal Injuries (SI), Keele University, Emeritus Consultant Surgeon in Spinal Injuries RJAH Orthopaedic Hospital Oswestry. WSEM trained between 1971 & 1983 in Spinal Injuries (SI) and its allied surgical specialities in the Oxford Group of hospitals, Guys Hospital, Stoke Mandeville hospital and the USA. He was the last student of Sir Ludwig Guttmann, Dr. Hans Frankel and Dr. JJ Walsh. He was appointed Consultant Surgeon in Spinal Injuries and Director of the Midland Centre for Spinal Injuries at the Robert Jones and Agnes Hunt Orthopaedic Hospital in 1983. He personally treated 10,000 patients with traumatic Spinal Cord Injuries (SCI) and provided long life care to over 3,000 SI patients with and without Cord damage, raised £6million from charity to rebuild and furnish the MCSI, developed two bungalows, for the transitional housing for patients discharged from the Centre, contribute to the cost of purchase of CT & MRI as well as develop Clinical and Basic Science research. A special interest among many is the Prognostic

of the injury together with the potentially devastating medical and life-changing physical, psychological, social, financial, vocational, environmental & matrimonial consequences of the injury. These not only affect the patient but also the family members and close friends.

TSCIs cause a multi-system physiological impairment and malfunction. This impairment is dynamic and affects the functioning of the various system of the body during the transitional stage between spinal areflexia and return of autonomic and spinal reflexes. During this transition the management of the various systems of the body requires modulation. Following the return of reflex activity the function of the various systems affected remains at risk of being unstable and erratic. This is due to the effects of the various inter-system autonomic and spinal reflex activity caused by the loss of inhibitory and coordinating influence of the higher centres. The combination of an unstable neuro-physiological impairment and sensory impairment/loss can in inexperienced hands result in the development a wide range of potential complications and increase in disability. Some complications can further damage the Injured and Physiologically Unstable Spinal Cord, cause neurological deterioration, delays or absence of recovery imposing further challenges to patients and clinicians. Fortunately with adequate Active Physio Conservative Management (APCM) of the injury and its medical effects almost all complications following TSCI can be prevented or diagnosed early and treated before further damage develops.

This necessitates a period of treatment in recumbence until the full return of the autonomic and spinal reflexes. This period ranges between four to eight weeks.

Neurological Recovery can be predicted early in the presence of spared sensory tracts and depending on the extent of the sparing when complications are prevented or diagnosed and treated early. This recovery has been repeatedly documented by various groups to occur irrespective of the radiological presentation on X-rays, CT & MRI since 1969. Unfortunately it has been rarely referred to in the literature in the last three decades.

indicators of Spontaneous Neurological recovery and the Influence of the Radiological Appearances as well as Model of Clinical Service Delivery on Neurological and other Outcomes. He trained many Clinicians (Physicians and Surgeons) in the field of spinal injuries, lectured worldwide and published over 150 manuscripts. This includes the publication of the longest follow up and clinical presentation of Bladder Cancer and also of Post-Traumatic Syringomyelia in patients with SCI. He published on the discrepancy between the radiological and neurological presentation of patients on admission and discharge. He relatively recently published a chapter on Spinal Injuries in the Oxford Textbook of Medicine. He is the author the Concepts of Physiological Instability of the Spinal Cord, Time related Biomechanical Instability of the injured spine following injury & the Micro-instability of the injured spine as a possible source of pain when patients are mobilised prior to some bony healing WSEM is Past President International Spinal Cord Society and Past Chairman British Association of Spinal Cord Injury Specialists. He is Honorary member of many Societies. WSEM advised the WHO & (NICE) on matters related to Spinal Injuries. He won many National and International awards. WEM is currently Honorary Professor in Spinal Injuries at Keele University, Trustee of the Institute of Orthopaedic R J A H Hospital Oswestry and Founder Member and Chairman of Trustees SPIRIT Educational Charity in Spinal Injuries. WSEM received the A Excellence award of the NHS and was commended for his Service twice in the House of Lords as

The last three decades have witnessed significant changes in the Model of Service Delivery and Methods of Management of the injured spine in patients with acute traumatic spinal cord and cauda equina injuries. These changes have been based on increasing claims of benefits of a mechanical interventional approach focusing on the injured spine often at the expense of the adequacy of management of the medical and non-medical effects of the cord injury. Claims that early interventions expedite the mobilisation, rehabilitation and discharge of patients; improve neurological outcomes or achieve both are currently influencing practice in both well-resourced and under-resourced countries.

I will in this presentation discuss the extent of anticipated neurological recovery, the factors that influence its achievement, the role of clinical and radiological findings, and the role of surgery on the short, medium and long term.

I will also discuss the risks of further mechanical and non-mechanical damage to neural tissues from systemic complications that can easily develop during and/or after a surgical intervention on the injured spine for the delegates to determine the level of evidence of the change in Standard of care on the neurological and non-neurological outcomes.

I will highlight the importance of the level of Knowledge, Training, Experience in the field of Spinal Injuries and thorough familiarity of the short, medium and long term outcomes of a holistic simultaneous Active Physiological Conservative Management of the Injured Spine together with all the Effects of neural tissue damage. This is to ensure skilful management of patients, sound evaluation of outcomes of various surgical and non-surgical interventions as well as contribute with meaningful research.

example of good practice(Hansard)
on the 8th April 2003, vol 647,
no.79, p204 and 9th March 2006
vol 679, no 117, p88 and 28th
February 2009.

Biography

Youssef Masharawi^{1*} PT, PhD; Avihai Soroka¹ PT, PhD; Anat V. Lubetzky² PT, PhD; Orla Murphy³ PhD; Asaf Weisman¹ PT, MScPT; Ely Ashkenazi⁴ MD; Yizhar Floman⁴ MD; Shai Shabat⁵ MD; Marilyn Moffat⁶ PT, PhD

¹Department of Physiotherapy, Stanley Steyer School of Health Professions, Gray Faculty of Medical and Health Sciences, Tel Aviv University, Israel

²Department of Physical Therapy, Steinhardt School, New York University, USA

³Department of Mathematics and Statistics, Dalhousie University, Canada

⁴Israel Spine Center, Assuta Hospital, Tel Aviv, Israel

⁵Spine Unit, Meir Medical Center & Department of Orthopedics, Tel Aviv University, Israel

⁶Department of Physical Therapy, New York University, USA

The clinical status of patients with lumbar spinal stenosis reflects their individual decision to undergo or defer lumbar spinal surgery

Lumbar Spinal Stenosis (LSS) is a prevalent degenerative spinal condition often leading patients to consider surgical intervention. However, the decision to undergo surgery is not always determined by objective clinical severity. This study explored whether the clinical status of individuals with LSS aligns with their personal choice to proceed with or defer lumbar spinal surgery.



Professor Youssef Masharawi is an Associate Professor in the Department of Physical Therapy at Tel Aviv University. A licensed physiotherapist, he specializes in spinal disorders, integrating manual therapy, biomechanics, and rehabilitation science. He holds a Ph.D. in Anatomy and Anthropology from Tel Aviv University and completed postdoctoral research in Denmark. He leads the Spinal Research Laboratory, focusing on clinical, functional, and epidemiological aspects of spinal health. Professor Masharawi has published extensively, teaches undergraduate and graduate courses, and mentors research students. He also promotes diversity as head of the Arab Integration Committee at Tel Aviv University and is active in international spine research societies.

In a multicenter cohort involving both orthopedic and rehabilitation settings, we assessed physical function, pain levels, and quality of life in patients electing for surgery versus those who opted for non-surgical management. Surprisingly, results indicated that many patients with comparable clinical presentations made contrasting treatment decisions. Factors influencing these choices included subjective pain perception, psychosocial context, lifestyle considerations, and trust in medical advice.

Our findings underscore the necessity of a patient-centered approach in managing LSS. Shared decision-making, informed by both clinical findings and patient preferences, is essential for optimizing outcomes and aligning care with individual values. This presentation will discuss the study's methodology, key insights, and their implications for orthopedic surgeons, physiotherapists, and multidisciplinary spine care teams.

Keywords: Lumbar Spinal Stenosis, Patient Decision-Making, Spine Surgery, Shared Decision-Making, Clinical Outcomes, Rehabilitation, Orthopedic Care.

Biography

Zhenhuan LIU

Nanhaiaternity and Children's Hospital,
Guangzhou University of Chinese Medicine,
China

Study scalp electroacupuncture therapy for autism spectrum disorder

Background: Autism Spectrum Disorders (ASD) are a series of neurodevelopmental disorders characterized by social disorders, rigid behaviors and narrow interests. The World Health Organization (WHO) estimates that the prevalence of ASD has been increasing over the past 50 years. With one in 48 children, ASD has become a global public health problem. Currently there is no effective drug treatment for children with ASD, and there is no effective medical treatment. Education of these ASD children by special education methods alone has a poor outcome, with 75% of ASD children failing to achieve normal or cure. And 80% of ASD children suffer from mental retardation, ADHD, epilepsy, emotional sleep disorders and so on. It can cause pain and suffering for ASD children and their parents. The effects may persist into adulthood.

Objective: The purpose of this study was to investigate the effect of head acupuncture therapy on core symptoms, quality of life and communication ability of children with ASD. Our team conducted a controlled study of head acupuncture therapy in 198 children diagnosed with ASD. The clinical diagnostic criteria of children with ASD who were selected for head acupuncture treatment met the DSM-5 criteria. Each child and parent signed an informed consent form.

Methods: 198 children with ASD were randomly divided into two groups. Acupuncture treatment group 89 cases, received head acupuncture therapy and the control group 89 cases received special education and



Professor Zhenhuan Liu is a pediatrician, pediatric acupuncturist, and Ph.D. tutor. He has been engaged in pediatric clinical practice and child rehabilitation for over 40 years. He has led rehabilitation teams that have treated more than 40,000 children with intellectual disabilities, cerebral palsy, and autism from China and over 20 other countries. Through his efforts, more than 26,800 children with deformities have returned to school and society and become self-sufficient, with rehabilitation outcomes ranking at an internationally advanced level. He currently serves as Vice-Chairman of the Rehabilitation Professional Committee for Children with Cerebral Palsy, World Federation of Chinese Medicine Societies. For the past 10 years, he has also been a Visiting Professor at the Chinese University of Hong Kong. He is recognized as one of the most renowned pediatric neurology and rehabilitation specialists in China, particularly in the integration of traditional Chinese and Western medicine. His academic contributions include editing 10 books and publishing 268 papers in international and Chinese medical journals.

speech therapy for 3 months. Clinical evaluation methods were ATEC, ABC, CARS and Gesell developmental scales. Pre - and post-treatment assessments were performed. The age of the two groups was 3-8 years old, and the gender, degree of illness, comorbidities, family education and rearing methods, course of disease and other factors were statistically analyzed. There was no significant difference between the two groups, and there was a certain comparability between the two groups. Both groups were evaluated on the ATEC, ABC, CARS and Gesell scales before starting rehabilitation. CNRAT method, Zhijiu acupuncture and precise body surface projection in functional language area of cerebral cortex were selected for head acupuncture. Broca and Wennicken area were simultaneously stimulated by acupuncture. Acupuncture is performed every other day. After acupuncture, electrical acupuncture was given to stimulate the language area for 15 minutes, every 10 times of acupuncture, rest for 15 days. A second clinical evaluation was conducted 3 months after acupuncture.

Results: The improvement of core symptoms in the head acupuncture treatment group was better than that in the control group. The initial clinical improvement was in abnormal visual communication, improvement of sleep and mood, and the following clinical effects were alleviation of rigid behavior, improvement of attention, and improvement of verbal and social communication ability. Assessment of these scales reflects a gradual improvement in these core symptoms. But these changes were not significant in the control group.

Conclusion: The research results showed that head acupuncture therapy could significantly improve the core symptoms of ASD children, such as extreme loneliness, eye contact disorder, language repetition, compulsive agreement, and indifference, significantly regulate the abnormal EEG of ASD children, and positively promote the cognitive level of low-functioning ASD children. The clinical efficacy of the treatment of ASD was not closely related to age. Electrocephalic acupuncture can be used as an effective supplement and alternative medicine therapy in the clinical treatment of ASD. The popularization and application of head acupuncture therapy can improve the quality of life of ASD children and reduce the economic burden of society and family.

Since 2004, Nanhai Women's and Children's Hospital Affiliated to Guangzhou University of Chinese Medicine has applied our original pediatric neurorehabilitation head acupuncture therapy to treat ASD and achieved good clinical efficacy. In order to further promote the application, our research group obtained the exact clinical effect confirmed by scientific evaluation through the clinical validation study and clinical follow-up of 1000 cases of ASD. We also receive pediatricians from all over the world who come to our hospital in China to study head acupuncture therapy for ASD. Doctors and rehabilitation therapists from Switzerland, Australia, the United States, Germany, Egypt, Russia, Kazakhstan and other countries have come to our hospital to study the clinical application of head acupuncture therapy in ASD.

Keywords: Autism Spectrum Disorder, Acupuncture, Scalp Electroacupuncture.

3rd Edition of Global Conference on
**Physical Medicine
and Rehabilitation**

3rd Edition of
**World Orthopedics
Conference**

SEPT
15-17

ORAL PRESENTATIONS



Abdelfatah ELsenosy

University Hospitals Dorset NHS Foundation Trust, United Kingdom

Surgical versus non-surgical management of displaced midshaft clavicle fractures: A systematic review and meta-analysis

Displaced midshaft clavicle fractures are common injuries, particularly among young, active adults. While both surgical and non-surgical approaches are widely used, their comparative effectiveness remains debated. This systematic review and meta-analysis aimed to compare surgical versus non-surgical management of displaced midshaft clavicle fractures in adults, focusing on union rates, functional outcomes, complications, and patient satisfaction.

A comprehensive search of PubMed, Scopus, Web of Science, and Google Scholar was conducted to identify comparative studies published up to May 2025. Studies were eligible if they included adult patients with acute displaced midshaft clavicle fractures and reported at least one relevant clinical outcome. Meta-analyses were performed using RevMan 5.4, calculating Standardized Mean Differences (SMDs) for continuous variables and Odds Ratios (ORs) for dichotomous outcomes.

Eleven studies comprising 1,084 patients were included. Surgical treatment significantly reduced nonunion rates (OR: 0.23; $p < 0.00001$) and was associated with moderately improved shoulder function based on Constant scores (SMD: 0.49; $p = 0.05$). No significant difference was observed in DASH scores ($p = 0.35$). Surgical management also resulted in higher cosmetic satisfaction and a faster return to work; however, it was associated with hardware-related complications and a higher reoperation rate.

Surgical fixation provides better early outcomes and lower nonunion rates in displaced midshaft clavicle fractures, particularly in active individuals. However, long-term functional outcomes appear comparable between approaches. Treatment should be individualized based on fracture characteristics, patient activity level, and preferences.

Keywords: Clavicle Fracture, Midshaft, Surgical Fixation, Non-Operative Management, Union Rate, Functional Outcome, Meta-Analysis.

Biography

Abdelfatah Elsenosy is a T&O SPR with over nine years of experience, including five years in the NHS. He holds a Master's degree in Orthopaedics and a PG Certificate in Medical Education. Elsenosy has published multiple papers in peer-reviewed journals and is actively involved in research, national audits, and surgical education.



Abdelfatah ELsenosy

University Hospitals Dorset NHS Foundation Trust, United Kingdom

3D-printed Patient-Specific Instrumentation (PSI) versus conventional techniques in Total Knee Arthroplasty (TKA): A systematic review and meta-analysis

Background: Three-Dimensional (3D) printed Patient-Specific Instrumentation (PSI) has emerged as an innovative approach in Total Knee Arthroplasty (TKA), aiming to enhance surgical accuracy and outcomes. However, its clinical advantages over Conventional Instrumentation (CI) remain a subject of ongoing debate.

Objective: To compare the clinical efficacy of 3D-printed PSI versus conventional instrumentation in primary TKA, focusing on surgical time, intraoperative blood loss, alignment accuracy, and malalignment rates.

Methods: A systematic review and meta-analysis was conducted in accordance with PRISMA guidelines. Fourteen comparative studies comprising a total of 2,704 TKA procedures were included. Comprehensive literature searches were performed across PubMed, Embase, Scopus, Web of Science, and Cochrane CENTRAL. Primary outcomes were surgical time, intraoperative blood loss, Hip–Knee–Ankle (HKA) alignment accuracy, and the proportion of alignment outliers (defined as $>\pm 3^\circ$ deviation). Meta-analyses were conducted using random-effects models, and heterogeneity was assessed using the I^2 statistic.

Results: Use of 3D-printed PSI significantly reduced the rate of HKA alignment outliers ($OR=0.30$; $p<0.00001$) and improved overall alignment accuracy ($SMD=-0.27$; $p=0.02$) compared to CI. PSI was also associated with significantly lower intraoperative blood loss ($SMD=-1.05$; $p=0.009$). No statistically significant difference in surgical time was observed ($SMD=-0.78$; $p=0.17$), though high heterogeneity was noted. Complication rates were comparable between groups.

Conclusion: 3D-printed PSI enhances alignment accuracy and reduces intraoperative blood loss in TKA without increasing perioperative risks. While functional outcomes are generally equivalent, PSI may offer particular value in complex cases or high-volume surgical settings. Further large-scale, high-quality randomized trials are warranted to assess long-term clinical and cost-effectiveness outcomes.

Keywords: 3D Printing, Patient-Specific Instrumentation, Total Knee Arthroplasty, Surgical Precision, Alignment Accuracy, Meta-Analysis.

Biography

Abdelfatah Elsenosy is a T&O SPR with over nine years of experience, including five years in the NHS. He holds a Master's degree in Orthopaedics and a PG Certificate in Medical Education. Elsenosy has published multiple papers in peer-reviewed journals and is actively involved in research, national audits, and surgical education.



Abdullah ElRefae^{1*}, Miqdad Qandeel², Mustfa Makkiyah³

¹Trauma and Orthopaedic, Northwick Park Hospital, Harrow, UK

²General Surgery, Northwick Park Hospital, Harrow, UK

³Trauma and Orthopaedic, Hillingdon hospital, Hillingdon, UK

Efficacy and safety of negative pressure wound therapy in managing lower limb amputation; An updated systematic review and meta-analysis with individual patients data meta-analysis and GRADE assessment

Major lower-limb amputation often results in wound complications that hinder recovery and delay prosthetic rehabilitation. Negative Pressure Wound Therapy (NPWT) has been proposed to improve outcomes, but evidence remains inconsistent. To synthesize available evidence comparing NPWT with standard wound therapy in fresh amputation stumps.

We conducted a systematic review and meta-analysis in accordance with PRISMA and Cochrane guidelines (PROSPERO: CRD420251088214). Eligible studies included randomized and controlled observational trials of NPWT versus conventional dressings. Primary outcomes were wound complications and Surgical-Site Infection (SSI); secondary outcomes included wound dehiscence, re-amputation, healing outcomes, and resource use.

Twenty studies including over 1,000 patients were analyzed. NPWT significantly reduced total wound complications (RR 0.49, 95% CI 0.37–0.66) and SSIs (RR 0.50, 95% CI 0.27–0.90). Subgroup analyses confirmed reductions in both superficial (RR 0.30, 95% CI 0.12–0.73) and deep infections (RR 0.26, 95% CI 0.11–0.63). The need for secondary amputation was lowered by one-third (RR 0.67, 95% CI 0.50–0.89). Wound dehiscence risk decreased (RR 0.53, 95% CI 0.30–0.94). Mortality, readmission, and hospital stay showed no significant differences between groups. Healing endpoints strongly favored NPWT: mean time to $\geq 76\%$ granulation was shortened by 25 days, while complete closure occurred nearly two weeks earlier. Kaplan–Meier reconstruction confirmed that NPWT accelerated wound maturation by 77% (HR 0.23, 95% CI 0.12–0.44). Economic evaluations, though limited, indicated fewer dressing changes, reduced outpatient visits, and overall cost savings.

NPWT after major lower-limb amputation halves the risk of wound complications and infections, reduces re-amputation, and accelerates wound healing. These local benefits are clinically significant even though systemic outcomes remain unchanged. NPWT should be considered as part of standard post-amputation care protocols.

Keywords: Negative Pressure Wound Therapy, Amputation, Surgical Site Infection, Wound Healing, Meta-Analysis.

Biography

Dr. Abdullah ElRefae studied Trauma and Orthopedics at the University of Debrecen. Following his academic training, he continued to develop his clinical and surgical expertise in the field of orthopedics. He is currently practicing in the Orthopedic Department at Northwick Park Hospital, where he is actively involved in patient care and surgical procedures. Dr. ElRefae has a strong interest in advancing orthopedic techniques and continues to contribute to the field through both clinical practice and ongoing professional development.



Truss A*, Render L, Gunn C, Davies H, Mohan R, Kapoor B, Fountain J. R

Liverpool University Hospital Foundation Trust, Liverpool, United Kingdom

Outcomes of periprosthetic distal femur–Defining managed surgically with fixation or revision to distal femoral replacement

Introduction: With an ageing population and increasing arthroplasty prevalence, periprosthetic distal femur fractures are rising. Surgical management includes Open Reduction Internal Fixation (ORIF) or revision to Distal Femoral Replacement (DFR). This study reviews outcomes following these approaches.

Methodology: A retrospective review of 67 patients (mean age: 77.8, range: 44-95) treated for periprosthetic distal femur fractures with ORIF (n=30) or DFR (n=37) was conducted at a single centre (2012-2022). Data included demographics, time to surgery, mortality, complications and patient-reported outcomes.

Results: 1-year mortality was 16% (55% DFR vs. 45% ORIF). Relative risk of death for DFR vs ORIF was 0.97 (p=0.96). Average time to death was longer for DFR (1212 days, range: 5-3825) vs ORIF (986 days, range: 41-2169). Median EQ5D score was 57.5 (range: 0-95), with DFR scoring lower (55, range: 0-90) vs ORIF (75, range: 50-95). Scores reflected moderate-to-severe issues with mobility and daily activities. Median Oxford Knee Score was 11.5 (range: 0-43), this was lower in DFR (9, range 0-39) vs ORIF (25, range: 13-43). DFR patients had a longer time to surgery (6.8 vs 2.6 days; p=<0.001) but similar hospital stays (23 vs 21 days; p=0.347). Complications included infections in 9 (13%) patients (16% DFR vs 10% ORIF). All patients achieved full weight-bearing postoperatively.

Conclusion: ORIF and DFR are viable options for managing periprosthetic distal femur fractures. Mortality risk at 1-year, was similar, however DFR may be associated with higher complication rates and delayed surgery. Careful patient selection and further research are required to optimise treatment strategies.

Biography

Mr. Truss studied Medicine at University of Bristol, graduating in 2016. He completed foundation training and core surgical training in North West England. He is currently a specialist trauma and orthopaedic registrar on the Mersey North West England Rotation.



Truss A*, Render L, Gunn C, Davies H, Mohan R, Kapoor B, Fountain J. R

Liverpool University Hospital Foundation Trust, Liverpool, United Kingdom

Periprosthetic fractures of the proximal femur – Defining the true patient impact

Background & Aim of the study: Periprosthetic Fractures (PPF) pose an enormous physiological insult to patients. The post-injury recovery can be lengthy and turbulent. Portraying the magnitude of this can be challenging, and defining the expectations from recovery can prove hugely valuable.

Methods: A retrospective search of all patients presenting to a single tertiary centre with a PPF of the proximal femur around an arthroplasty stem managed surgically between 2012-2022 was performed. Data was collected regarding pre and post-injury mobility (at 1-year) as well as pre-injury and discharge residential status.

Results: 164 patients were identified. Of the 136 patients alive at 1-year, 42 (58.6%) saw a deterioration in their mobility, reflected by an increased mobility aid requirement. Of the 74 independently mobile pre-injury, 42 (56.8%) required a walking aid and 2 patients were unable to mobilise at all. Eight patients had insufficient information to analyse their mobility. Twelve (7.3%) patients died before discharge and 21 had insufficient information to analyse residential status. Of the 131 remaining, 34 (26.0%) had an increased requirement for formal care, reflected by a requirement for a new care package or residential facility. Of the 119 living independently, 10 (8.4%) died before discharge, 18 (15.1%) required a formal care package and 12 (10.1%) required placement in a residential facility.

Conclusion: When counselling patients, more than half of previously independently mobile patients required walking aids at 1-year. A third of patients living independently pre-injury died or required formal care at discharge, including 1 in 10 requiring residential placement.

Biography

Mr. Truss studied Medicine at University of Bristol, graduating in 2016. He completed foundation training and core surgical training in North West England. He is currently a specialist trauma and orthopaedic registrar on the Mersey North West England Rotation.



Dr. Agustín Téllez Duarte et al.

AOC, Mexico

Artificial intelligence in spine surgery: A paradigm shift from diagnosis to rehabilitation – A meta-analysis and future roadmap

The integration of Artificial Intelligence (AI) into spine surgery is rapidly transforming clinical workflows, offering unprecedented precision, efficiency, and patient-centric outcomes. This meta-analysis synthesizes evidence from 127 peer-reviewed studies (2018–2024) to evaluate AI's current applications, challenges, and future potential across the surgical continuum: diagnosis, preoperative planning, intraoperative navigation, rehabilitation, and postoperative management.

Key Innovations:

- **Diagnosis & Imaging:** AI platforms (e.g., IBM Watson, Aidoc, and proprietary CNNs) enhance MRI/CT analysis, achieving 94% accuracy in detecting degenerative pathologies, spinal tumors, and fractures, outperforming traditional radiologist interpretation ($\Delta=0.88$ vs. 0.72).
- **Surgical Planning:** Machine Learning algorithms (ML) optimize screw trajectory planning in deformity correction, reducing preoperative time by 40% while improving pedicle screw accuracy to 98.3% (95% CI: 96.1–99.2).
- **Intraoperative Navigation:** AI-driven robotics (Mazor X, ROSA Spine) and Augmented Reality (AR) systems minimize soft-tissue damage, decreasing intraoperative blood loss by 30% and OR time by 25%.
- **Rehabilitation & Postoperative Care:** Wearable sensors and AI-powered apps (Kaia Health, SPR Therapeutics) personalize physiotherapy, reducing recovery duration by 22% and predicting complications (e.g., SSI) with 89% sensitivity.

Challenges: Data heterogeneity, ethical concerns, and surgeon-AI collaboration barriers persist. However, emerging platforms like SurgFlow and predictive analytics tools (Prognos.ai) demonstrate potential to bridge these gaps.

Conclusion: AI is not a replacement but a synergistic partner for spine surgeons. This study proposes a validated AI Integration Framework with Kappa-weighted reliability ($\kappa=0.91$) to standardize implementation. For global adoption, we advocate for hybrid human-AI training curricula and regulatory frameworks prioritizing patient safety.

Keywords: AI in spine surgery, surgical robotics, predictive analytics, augmented reality, precision rehabilitation.

This work redefines spine surgery's future, merging technological innovation with surgical artistry—a call to action for the World Orthopedic Congress to pioneer this transformative era.



Ahmad Quzli

Posterolateral rotatory instability of the elbow: Current concepts and the overlooked role of cubitus varus

Background: Posterolateral Rotatory Instability (PLRI) is the most common form of chronic elbow instability, typically resulting from disruption of the Lateral Ulnar Collateral Ligament (LUCL). Although well described, it is frequently underdiagnosed due to subtle clinical findings and normal radiographs. Emerging evidence also highlights an association between chronic cubitus varus (gunstock deformity) and progressive ligamentous attenuation, predisposing patients to late-onset PLRI.

Methods: We reviewed current evidence on the pathoanatomy, biomechanics, diagnosis, and treatment of PLRI, with particular attention to its relationship with coronal plane deformity.

Results: PLRI most often arises post-trauma but may also occur iatrogenically or secondary to cubitus varus. The LUCL is the primary stabiliser against posterolateral rotatory stress; its failure leads to recurrent instability. Clinical tests such as the pivot-shift and chair push-up test aid diagnosis, while static imaging may miss dynamic instability. Surgical LUCL reconstruction with autograft or allograft demonstrates excellent outcomes, whereas conservative management is rarely effective. Importantly, uncorrected cubitus varus increases varus and rotational stress across the elbow, predisposing to recurrent instability after ligament reconstruction.

Conclusion: PLRI remains under-recognised and requires high clinical suspicion for diagnosis. Surgical LUCL reconstruction restores stability, but assessment of underlying cubitus varus is critical. Addressing coronal alignment may reduce recurrence risk and represents an underexplored avenue for improving outcomes.



Ahmad Quzli

Quadriceps tendon ruptures: Current concepts in diagnosis and management

Background/Aim: Quadriceps Tendon Ruptures (QTRs) are uncommon but potentially disabling injuries due to disruption of the primary knee extensor mechanism. They most frequently occur in middle-aged or older adults with comorbidities or tendon degeneration, typically following eccentric loading during sudden knee flexion. This review aimed to synthesise current evidence on diagnostic approaches and management strategies for QTR.

Methods: We reviewed the literature on epidemiology, diagnostic strategies, and treatment options for QTRs, with attention to factors influencing management decisions.

Results: Clinical history and examination remain the cornerstone of diagnosis, with MRI serving as the gold standard imaging modality for confirmation and assessment of tear extent. Management is determined by both injury- and patient-related factors. Partial tears in low-demand patients with preserved function can be managed conservatively, whereas complete ruptures and high-grade incomplete tears generally require surgical repair. Comparative studies report no significant difference in outcomes between transosseous tunnel and suture anchor fixation. Recent investigations into biologics, minimally invasive surgery, and augmentation techniques show promise but lack high-level evidence.

Conclusion: Early recognition and appropriate management of QTR are essential to restore function and prevent long-term disability. Surgical repair remains the mainstay for complete and functionally significant ruptures. Future research should focus on biologic augmentation and minimally invasive approaches to optimise recovery.



Ahmed Zainy

London Northwest Trust, United Kingdom

Influence of contralateral knee status on Quality of Life (QoL) after Total Knee Replacement (TKR): Retrospective study

Background: Total Knee Replacement (TKR) provides pain relief and functional recovery for patients with end-stage knee osteoarthritis. Although many patients report satisfaction with TKR outcomes, more than 20% of patients remain dissatisfied due to pain or functional difficulty in the contralateral knee. This study was designed to assess the outcome of the contralateral knee state following a unilateral TKR and will compare patients without a contralateral prosthesis to those with a contralateral prosthesis measuring postoperative Quality of Life (QoL) mainly.

Methods: This was a retrospective observational cohort study at a regional elective orthopaedic centre in the UK. Patients were split into groups on the basis of the contralateral knee state: A native knee (NC group) and a previous contralateral prosthesis (PC group). The primary outcome measure was the change in health-related QoL (EQ-5D-3 L index), and the secondary outcome measure was the change in the OKS. Descriptive statistics and independent-sample t tests were used to assess the results, along with paired t tests and multivariable linear regression. Pre-study power calculations and propensity score weighted regression were applied.

Results: Both groups improved QoL and knee function at 6 months. EQ-5D scores increased similarly in NC (+0.22) and PC (+0.21) groups ($p=0.85$). OKS improvement was slightly higher in the NC group (13.9 vs 10.6; $p=0.04$), though not clinically meaningful. Clinically important QoL gains occurred in 79% (NC) and 76% (PC).

Conclusion: The status of having a native contralateral knee did not significantly influence postoperative changes in QoL or knee function when comparing TKR for osteoarthritis with that of previous contralateral prostheses. These findings suggest that the status of the contralateral knee plays a minor role in recovery. Further research is needed to explore the effects of age and other factors on postoperative outcomes.

Biography

Ahmed Zainy graduate at Royal college of surgeons in Ireland and Member of Royal college of Surgeons in England. He work as a senior house officer in London. And also has won a fully paid scholarship to complete his MBBS in Ireland. He published two papers on PubMed indexed journals and awaiting the approval for 3 more this year.



Ahmed Zainy

London Northwest Trust, United Kingdom

Robotic-assisted Kinematic Alignment (KA) in Total Knee Arthroplasty (TKA)

Background: Personalized alignment strategies in Total Knee Arthroplasty (TKA), such as Kinematic Alignment (KA), aim to restore the patient's native anatomical knee position prior to disease onset. Robotic-assisted systems have enhanced the precision and reproducibility of KA techniques; however, controversies remain regarding implant survivorship, safety thresholds, cost-effectiveness, and global adoption.

Aim: This narrative review summarizes the current evidence on robotic-assisted KA in TKA, addressing the technical basis, clinical outcomes, and ongoing controversies. It also explores regional perspectives on the implementation of robotic-assisted KA across Europe and Asia.

Methods: A comprehensive literature search was conducted in PubMed, Scopus, and Google Scholar for peer-reviewed articles published between 2015 and 2025 using keywords related to robotic-assisted TKA, KA techniques, and alignment controversies. Grey literature including professional society statements and joint registry reports were also reviewed.

Results: Robotic-assisted TKA improves implant positioning accuracy and allows for personalized alignment strategies. Limited short-term data suggest improved functional recovery and patient-reported outcomes with robotic-assisted KA compared to conventional methods. However, evidence supporting superior long-term outcomes over Mechanical Alignment (MA) is scarce, and cost-effectiveness remains inadequately demonstrated. National joint registries in Europe and Asia have begun to capture data on robotic-assisted KA usage, offering opportunities for future longitudinal analyses.

Conclusion: Robotic-assisted KA represents a promising personalized approach in TKA, but high-quality prospective trials are required to confirm its impact on long-term implant survivorship and patient outcomes. Future research should also evaluate the clinical utility and economic value of incorporating robotic-assisted KA into standard TKA practice.

Biography

Ahmed Zainy graduate at Royal college of surgeons in Ireland and Member of Royal college of Surgeons in England. He work as a senior house officer in London. And also has won a fully paid scholarship to complete his MBBS in Ireland. He published two papers on PubMed indexed journals and awaiting the approval for 3 more this year.



Akankunda Veronicah Karuhanga

Golden Age Elderly Homes Uganda, Kampala, Uganda

Leveraging technology in physical medicine and rehabilitation in care homes/assisted living facilities for seniors

Leveraging technology in physical medicine and rehabilitation in care homes/assisted living facilities. Revolutionizing senior care: Leveraging technology in rehabilitation and assisted living facilities.

Technology is transforming the way seniors receive care in rehabilitation and assisted living facilities. Innovative solutions are enhancing the quality of life, improving health outcomes, and increasing independence for seniors.

Technologies Used in Senior Care Facilities

1. **Telehealth and Virtual Care:** Remote monitoring and virtual consultations enable timely interventions, reduce hospitalizations, and enhance access to specialty care.
2. **Wearable Devices and Sensors:** Track vital signs, monitor falls, and detect health anomalies, allowing for prompt interventions.
3. **Artificial Intelligence (AI) and Machine Learning (ML):** Analyse data from various sources to identify trends, predict health declines, and personalize care plans.
4. **Virtual Reality (VR) and Augmented Reality (AR):** Enhance therapy sessions, provide cognitive stimulation, and offer immersive experiences for recreation and relaxation.
5. **Robotics and Automation:** Assist with daily living activities, such as bathing, dressing, and medication management, promoting independence and dignity.
6. **Communication and Social Interaction Tools:** Facilitate video calls, messaging, and social networking to combat loneliness and isolation.
7. **Electronic Health Records (EHR s) and Care Coordination Platforms:** Streamline care coordination, reduce errors, and improve communication among caregivers and healthcare providers.

Benefits of Technology in Senior Care Facilities

1. **Improved Health Outcomes:** Enhanced monitoring, timely interventions, and personalized care plans contribute to better health outcomes.
2. **Increased Independence:** Assistive technologies and automation enable seniors to maintain independence and dignity.

3. **Enhanced Quality of Life:** Virtual reality, social interaction tools, and recreational activities promote cognitive stimulation, relaxation, and enjoyment.
4. **Reduced Hospitalizations and Readmissions:** Telehealth, remote monitoring, and predictive analytics help prevent hospitalizations and readmissions.
5. **Increased Family Engagement:** Communication and social interaction tools facilitate connections between seniors and their loved ones, promoting emotional well-being.
6. **Staff Efficiency and Reduced Burnout:** Automation, care coordination platforms, and data analytics support staff in providing high-quality care while reducing administrative burdens.

Implementation and Integration Strategies

1. **Needs Assessment and Planning:** Identify specific needs, goals, and outcomes to inform technology adoption.
2. **Staff Training and Support:** Provide comprehensive training and ongoing support to ensure staff confidence and competence in using new technologies.
3. **Resident Engagement and Education:** Educate residents and their families about the benefits and use of new technologies.
4. **Interoperability and Integration:** Ensure seamless integration with existing systems, devices, and workflows.
5. **Monitoring and Evaluation:** Continuously assess the effectiveness, safety, and user experience of implemented technologies.

By embracing technology, senior care facilities can create personalized, efficient, and effective care environments that enhance the lives of seniors and support their caregivers.

Biography

Veronicah Akankunda is a Ugandan Gerontologist, Neuro Researcher, social entrepreneur and advocate for elderly care. She is the Founder and CEO of Golden Age Elderly Homes (GAEH), a pioneering organization providing holistic care to seniors in Uganda. Veronicah is a passionate geriatric care specialist, visionary leader with expertise in Gerontology, healthcare management, and social work for over 10 years. Her dedication to elderly care is inspiring. The engaging presentations, public lectures and compassionate care to seniors inspire audiences to action. Apart from Gerontology consultancy she has innovated age-friendly living spaces. Golden Age Elderly Homes being the first care home in the country is a beacon of hope for Uganda's seniors offering a comprehensive range of services designed to cater to the diverse needs of the elderly population. From the Geriatric Training Academy that equips students with Nursing skills in Elderly care, to Mobility Aides, Personal Care, Elderly Nutrition, and Rehabilitation, the organization stands as a one-stop destination for elderly care support. The unique blend of home services, including Physiotherapy and Massage, Adult day care center sets Golden Age Elderly Homes apart, providing a holistic approach to caregiving as seniors age gracefully with Dignity in the comfort of their homes. Veronicah's work focuses on addressing the Psychosocial, emotional, and healthcare needs of the elderly, promoting dignity, and challenging age-related discrimination. She has gained recognition for her efforts to improve elderly care in Uganda and Africa. Her dedication to enhancing the lives of older adults has earned her respect and admiration internationally. Her work continues to inspire positive change and promote a culture of care and inclusivity for all ages. Her projects have Improved lives of countless elderly individuals and their families, Raised awareness about Geriatric care and age-related issues. Inspired a new generation of social entrepreneurs and caregivers, Contributed to policy changes and advocacy for elderly rights in Uganda. Her selflessness, compassion, and innovative spirit makes Veronicah a true champion for the elderly and a role model for social entrepreneurship. She

has won numerous Awards for Excellence in Palliative care, Health entrepreneur, Innovation and Entrepreneurship, her Research in Geriatric Care, Neurology and Neurological disorders has been internationally published and continues to impact society. Golden Age Elderly Homes has left an indelible mark on Ugandan communities. The organization has provided geriatric care to over 1962 elderly individuals, conducted more than 134 community health camps, and trained over 350 home care-based carers. The impact extends beyond physical care, touching on community health and general well-being.



Dr. Ahmed N. Altaie, Dr. Alaa H. Alghareeb*

Alhassan Teaching Hospital, Karbala, Karbala, Iraq

Rare case of osseous hydatid cyst disease

We present a rare case of osseous hydatid cyst involving the iliac bone in a 40-year-old male with no prior medical or surgical history. The patient initially presented in 2020 with mild pelvic pain and was diagnosed with hydatid disease affecting the pelvic bone. After initial management, the disease recurred in November 2024 and required a third surgical intervention in June 2025. This case highlights the challenges in diagnosis and management of skeletal hydatidosis, especially in non-endemic regions. Surgical debridement combined with antiparasitic therapy remains essential. Early suspicion and long-term follow-up are critical to preventing recurrence.

Biography

Dr. Alaa H. Alghareeb graduated from the University of Basrah, College of Medicine, Iraq, in 2018. He began his clinical career as a rotating intern at Al-Hindiya General Hospital in 2018, followed by a second year of internship at Al-Hussein Medical City in 2019. In 2020, he served at Al-Ghadeer Primary Health Center. In 2021, he started his orthopedic surgical training as a senior resident at Al-Hussein Medical City, where he continued through 2022. In 2023, he was accepted into the Iraqi Board for Orthopedic Surgery. He completed his first board training year in 2024 and is currently in his third training year (2026) at Al-Hassan Al-Mujtaba Hospital in Karbala, Iraq.

Kimberly V. Ponsworno¹, Ali Rajab^{2*}, Robert Keehan², Riaz Ahmad²

¹Trauma and Orthopaedics, Bristol Royal Infirmary, Bristol, GBR, United Kingdom

²Trauma and Orthopaedics, University Hospitals Bristol and Weston NHS Foundation Trust, Weston-super-Mare, GBR, United Kingdom

Clinical value of routine follow-up radiographs in Total Joint Arthroplasty (TJA)

Background: Performing routine radiographs after Total Joint Arthroplasty (TJA) in post-operative follow-up, typically at four weeks and 12 months, in addition to baseline radiographs obtained immediately post-operatively, is common practice in many institutions. Despite research indicating it may not alter management, it is associated with substantial financial, resource, and time costs. This study aimed to assess the impact of routine radiographs on the management of TJA patients in a UK district general hospital.

Method: This retrospective observational study included patients who underwent Total Knee Arthroplasty (TKA) or Total Hip Arthroplasty (THA) between September 2019 and December 2020. Patient data, including demographics, surgery details, and follow-up outcomes, were extracted from electronic medical records.

Follow-up visits were categorized as four-week and 12-month post-surgery intervals, allowing for variability in timing due to COVID-19-related disruptions. Radiographic assessments, including requests, reports, and findings from clinic letters, were reviewed to determine any radiological abnormalities or changes in management. Descriptive statistics were applied to evaluate the frequency and context of routine versus unplanned radiographs, providing insights into post-operative care patterns.

Results: A total of 173 TJA patients met the inclusion criteria, with 54 exclusions due to lack of follow-up. A total of 56 patients (32%) had routine radiographs within the one-year follow-up period. No radiological abnormalities were detected on these, and none of the patients returned to the theatre. Of the 24 patients who presented with acute clinical concerns and had unplanned radiographs, eight (33%) required a return to theatre.

Conclusion: Routine follow-up radiographs in our study did not reveal any significant abnormalities nor did they result in changes to patient management, indicating a lack of clinical utility. Given that these radiographs impose considerable financial and resource burdens, their necessity is questionable. Based on the National Health Service (NHS) tariff costs, the potential savings from discontinuing routine radiographs in our cohort amounted to £3,129 annually. Extrapolating this to the national level, with approximately 150,000 total knee and hip replacements performed each year in the UK, suggests that substantial costs could be avoided.



Amgalankhuu O^{1,2*}, Batsukh S², Erdenebold B², Zoljargal S², Munkhsaikhan T^{2,3}, Naranbat L¹

¹Department of Orthopedics, School of Medicine, Mongolian National University of Medical Sciences

²Department of Sports Medicine, National Trauma and Orthopedics Research Center

³Ministry of Health, Mongolia

Comparison of open Broström-Gould repair and arthroscopic anatomical repair of the anterior talofibular ligament in the management of chronic lateral ankle instability

Background: Chronic Lateral Ankle Instability (CLAI) is commonly treated with surgical repair of the Anterior Talofibular Ligament (ATFL). While the Broström-Gould procedure is widely accepted, minimally invasive arthroscopic techniques have gained popularity. This study compares early outcomes and cost-effectiveness between open Broström-Gould repair and arthroscopic anatomical ATFL repair.

Methods: A retrospective cohort of 40 patients who underwent ATFL repair between September 2024 and February 2025 was analyzed. Patients were divided into open repair (n=20) and arthroscopic repair (n=20) groups. Primary outcomes included surgical duration, hospitalization time, procedural cost, and functional recovery assessed by the AOFAS and Karlsson-Peterson scores at baseline and 3 months postoperatively. Complication rates were also recorded.

Results: Open repair resulted in significantly shorter operative time and hospital stays ($p < 0.05$). Both groups showed significant postoperative improvements in AOFAS and Karlsson scores ($p < 0.01$), with no significant differences between groups at baseline or follow-up. No major complications were reported, and the incidence of minor complications was similar in both groups.

Conclusion: Open Broström-Gould and arthroscopic ATFL repair yield comparable early clinical outcomes in CLAI. The arthroscopic technique offers the benefit of smaller incisions, while the open approach demonstrates advantages in operative efficiency and cost. These findings support a tailored surgical approach based on patient needs and available resources.

Keywords: Anatomic, Non-anatomic, Anterior talofibular ligament, The American Orthopaedic Foot & Ankle Society (AOFAS), Karlsson.

Biography

Amgalankhuu Orkhontuul in 2020 completed his Academic Traumatology, Residency training, National Traumatology and Orthopedics Research Center of Mongolia, Ulaanbaatar, Mongolia. In 2019 Master of Science in Medicine, Graduate School, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia. In 2017 MBBS (Summa Cum Laude), School of Medicine, Mongolian National University of Medical Sciences, Ulaanbaatar, Mongolia.

Trainings and Professional Development: In 2020, Amgalankhuu Orkhontuul completed the New Investigator Clinical Trials Course organized by the Canadian Traumatology Trials Group. That same year, he participated in a 14-day training program at National Cheng Kung University in Taiwan. In 2019, he was selected to attend the KAS-Political Empowerment College by the Konrad Adenauer Stiftung in Ulaanbaatar, Mongolia. He also took part in the Social Entrepreneurship Bootcamp and was selected for a two-month program by the Zorig Foundation in Ulaanbaatar. Additionally, he participated in the Young Medical Leaders Program organized by Denk Pharma. In 2018, Amgalankhuu Orkhontuul was a selected participant in the 8th Environmental Fellowship Program organized by the Zorig Foundation, a nine-month initiative based in Ulaanbaatar. He also took part in Model UNESCO Mongolia organized by the Mongolian National Commission for UNESCO. Earlier, in 2015, he completed the Collaborative Institutional Training Initiative (CITI) program in Ulaanbaatar, Mongolia, under the guidance of Harvard Medical School.



Swati Chopra¹, Lokesh Chawla¹, Amin Bolourchi^{1*}, Alistair Ewen¹, Hollie Leonard¹, Elizabeth Beck¹, Joseph Baines¹, David Allen¹, Frédéric Picard^{1,2}

¹Golden Jubilee University National Hospital, Clydebank, Scotland

²Strathclyde University Biomedical Engineering Department, Glasgow, Scotland

Defining optimal follow-up for computer-navigated total knee arthroplasty: A 10-year analysis of implant survivorship, outcomes, and patient factors in 1,677 cases

Background: Computer navigated Total Knee Arthroplasty (TKA) is an effective and established treatment for knee arthritis. However, the optimal duration for patient follow-up remains unclear. This study aims to determine the ideal follow-up period and analyse long-term outcomes across diverse patient populations.

Methods: This prospective, single-centre study followed 1,677 consecutive computer navigated TKAs for a minimum of 10 years. Patient-reported outcomes, satisfaction rates, implant survival, and radiographic outcomes were assessed at multiple time points. Subgroup analyses were performed based on age, gender, and BMI to identify patient factors influencing outcomes and follow-up needs. Descriptive statistics were presented as means and Standard Deviations (SD) for continuous variables, and as frequencies and percentages for categorical variables. Statistical significance was set at $p < 0.05$.

Finding: Patient satisfaction rates stayed consistently high, with ~95% in the first 5 years and 90% at 10 years. Oxford Knee Scores (OKS) improved significantly from preoperative levels (17.9) to 1 year postoperatively (37.7), with both OKS and satisfaction rates plateauing from the first year. Implant survivorship was 96.4% at 17 years for all-cause revisions. Younger patients (<55 years) reported lower function, satisfaction and higher revision rates. No significant differences in revision rates were observed across BMI categories, although range of motion at 1 year negatively correlated with BMI. 83.2% of cases achieved the desired hip-knee-ankle angle (177°-183°) at 6 weeks postoperatively.

Interpretation: Computer-navigated TKA demonstrates high patient satisfaction, good functional outcomes, and excellent 10-year implant survivorship, with the majority of clinical benefits achieved within the first postoperative year. This suggests the initial 12 months as the critical follow-up period. While outcomes generally plateau thereafter, tailored strategies may further optimise results for younger and higher BMI patients. These findings significantly inform clinical practice, follow-up protocols, and resource allocation in TKA.

Funding: Study was funded by Aesculap AG, Tuttlingen, Germany.

Keywords: Total Knee Replacement, Computer-Assisted, Long-Term Outcomes, Osteoarthritis, Implant Survivorship, Age, BMI, Patient Reported Outcome, Satisfaction.

Biography

Amin Bolourchi is currently undertaking Foundation Doctor training at the Royal Free Hospital. He holds a Bachelor's degree in Pathology and Microbiology, as well as a Master's in Translational Cardiovascular Medicine. Also, he has a strong interest in Trauma and Orthopaedics, having completed two Orthopaedic rotations during his medical studies at the University of Glasgow. Under the supervision of Mr. Picard, he began work on a 10-year follow-up study, contributing to both data collection and manuscript preparation.



Amr Mohamed Foad Mohamed

Herfordshire NHS Trust, United Kingdom

Assessing the accuracy of preoperative templating in hip hemiarthroplasty: A retrospective audit

Introduction: Accurate preoperative templating in Hip Hemiarthroplasty (HHA) is crucial for optimal implant selection, leg length restoration, and postoperative function. While templating is a core competency in orthopaedic training, variation in accuracy remains, particularly among junior trainees. This audit evaluates the accuracy of templating in HHA against actual implant sizes used intraoperatively, highlighting areas for improvement in training and planning.

Aim: To assess the accuracy of preoperative templating in patients undergoing hip hemiarthroplasty and determine how experience level influences templating precision.

Methods: A retrospective audit was conducted on patients who underwent cemented HHA for intracapsular neck of femur fractures. Preoperative templating was reviewed and compared with the actual femoral stem size implanted during surgery. Templating was performed using TraumaCad or acetate templates on calibrated radiographs. Data on patient demographics, surgeon grade (consultant vs trainee), templated size, and actual size used were collected. A match was considered accurate if the templated and implanted sizes were identical or within one size difference.

Results: The audit included [insert number] patients. Overall, templating was accurate (within ± 1 size) in [insert]% of cases. Consultants demonstrated higher accuracy rates compared to trainees, especially for exact matches. Over- and under-sizing occurred in a minority of cases, with most discrepancies within one size. Key factors affecting accuracy included radiographic quality and correct calibration.

Conclusion: Preoperative templating in hip hemiarthroplasty is generally reliable, particularly when performed by experienced surgeons. However, variation among trainees suggests a need for focused training in templating techniques. Regular auditing, feedback, and the use of calibrated digital systems like TraumaCad can enhance accuracy and confidence in implant selection, ultimately improving surgical outcomes.

Biography

Amr Mohamed Foad Mohamed is a Trauma & Orthopaedics Registrar at Watford General Hospital with a strong academic and clinical background. He completed Core Surgical Training with a focus on T&O in the East Midlands Deanery and has demonstrated proficiency in managing acute trauma cases and performing complex procedures, including neck of femur and ankle fracture surgeries. He holds a PGCert in Medical Education from Cardiff University and is actively involved in undergraduate and postgraduate teaching with Imperial College London and the University of Leicester. Dr Basha is the first author of a systematic review on buprenorphine for postoperative pain and a co-author in multiple orthopaedic publications. His audit and quality improvement projects have been presented nationally and internationally. He has a long-term interest in hip and knee arthroplasty, robotic surgery, and medical education, aiming to contribute to global orthopaedic outreach work in the future.



Amr Mohamed Foad Mohamed

Herfordshire NHS Trust, United Kingdom

Role of true axial X-ray in management of ACJ injuries – QIP

Introduction: Acromioclavicular (AC) joint dislocations are common injuries. Differentiating between horizontal and vertical instability is challenging, but it is possible to diagnose these conditions using axial radiographs. Accurate joint reduction is easier when surgery is performed within the first two weeks post-injury, as the ruptured ligamentous restraints can often be repaired directly. However, complete reduction becomes more difficult if several months have passed since the injury, making it challenging to identify and repair the native ligaments.

Aim: We reviewed AC joint injuries three years and assessed their imaging against the guidelines provided in the paper The True Axial Shoulder Projection: Diagnostic Aid for Acromioclavicular Joint Dislocation, published in January 2020. Additionally, we monitored the time interval between injury and surgery against the standards outlined by Fraser-Moodie JA, Shortt NL, Robinson CM in their study Injuries to the Acromioclavicular Joint, published in J Bone Joint Surg Br (2008).

Methods: This was a retrospective audit of ACJ injuries from December 2019 to September 2022. Data were collected using various software programs, covering 33 patients (excluding one patient due to clavicular fracture). The data included information on diagnosis, date of injury, grades, the date of the first x-ray, the date of the first axial x-ray, ACJ measurements, management details including the date of operation, and implant type. Inclusion criteria were limited to ACJ injuries, while clavicular or humeral injuries were excluded.

Results: Patient ages ranged from 20s to 60s, with 78% of cases falling between grades 2 and 4. The majority of initial x-rays were performed in the Accident & Emergency (A&E) department, with around half of the patients receiving their axial x-ray during their first x-ray session. Out of 33 patients, 32 underwent an axial x-ray, but only 6 had a true axial x-ray. Additionally, 72% of patients had a face-to-face clinic visit.

Conclusion: Concerning the time interval between the date of injury and the operation, the guidelines suggest that surgery should be performed within two weeks (as per Injuries to the Acromioclavicular Joint, J Bone Joint Surg Br 2008). However, all cases in our data set that underwent surgery had it performed between 20 to over 70 days post-injury, exceeding the recommended two-week timeframe. This delay can complicate the reduction of the AC joint.

Through positive discussions with the radiology department, we successfully changed the policy to ensure that a true axial x-ray is performed for all patients presenting with an AC joint injury.

Biography

Amr Mohamed Foad Mohamed is a Trauma & Orthopaedics Registrar at Watford General Hospital with a strong academic and clinical background. He completed Core Surgical Training with a focus on T&O in the East Midlands Deanery and has demonstrated proficiency in managing acute trauma cases and performing complex procedures, including neck of femur and ankle fracture surgeries. He holds a PGCert in Medical Education from Cardiff University and is actively involved in undergraduate and postgraduate teaching with Imperial College London and the University of Leicester. Dr Basha is the first author of a systematic review on buprenorphine for postoperative pain and a co-author in multiple orthopaedic publications. His audit and quality improvement projects have been presented nationally and internationally. He has a long-term interest in hip and knee arthroplasty, robotic surgery, and medical education, aiming to contribute to global orthopaedic outreach work in the future.



Ankit Bhargava

Dean & Professor, Research Scholar, Faculty of Physiotherapy & Diagnostics, Jayoti Vidyapeeth Women's University, Jaipur, Rajasthan, India

Effects of cyriax manipulation and kinesio taping in premenstrual syndrome pain in younger females

Introduction: Menstrual pain was reported by 84.1% of women, with 43.1% reporting that pain occurred during every period and 41% reporting that pain occurred during some periods. The main aim of this study was to find out the effects of kinesio taping in the reduction of pre-menstrual pain and other changes among young females who fit the inclusion criteria and whether kinesio taping plays any important role in resolving this social problem of women around the world. This study was an experimental study done on a fewer subjects. A specific kinesio Taping technique was performed on the subjects before their expected menstrual dates for three consecutive months and checked for changes in approved parameters. Kinesio taping was relatively effective in reducing the issues arising from pre-menstrual syndrome among young females. It was also seen during the study that females' psychological parameters also improved. A vast scope of research is available in this area on a bigger scale which needs to be addressed by the researchers to eradicate this common problem of women without medication.

Objective: To investigate the effects of cyriax Manipulation and EDF kinesio taping technique in pre menstrual syndrome pain in younger females.

Methodology & Sampling: The study consists of 06 participants with abnormal pain during their mensuration. Sampling method purposive sampling with questionnaire. Selection Criteria: Inclusion Criteria – Age- 15 -35 years, females suffering from symptoms Exclusion Criteria: Females with vaginal cancer, pregnant women and females with excessive recurrent bleeding.

Each participant after filling up the pre questionnaire & consent form, a specific kinesio taping technique and cyriax manipulation was performed on the subjects before their expected menstrual dates for six consecutive months and checked for changes in approved parameters. After 3 & 6 months post questionnaire were filled and analysed.

Result & Conclusion: The results of the study showed that cyriax manipulation and kinesio taping together was relatively very effective in reducing the issues arising from pre-menstrual syndrome among young females. It was also seen during the study that females' psychological parameters also improved. A vast scope of research is available in this area on a bigger scale which needs to be addressed by the researchers to eradicate this common problem of women without medication. This study concludes that clinically cyriax Manipulation and EDF kinesio

taping technique is very effective in relieving the symptoms and pain in pre menstrual syndrome.

Keywords: Kinesio Taping, Cyriax Manipulation, PMS, EDF.

Biography

Dr Ankit Bhargava is an Indian School of Business, Hyderabad & National University of Singapore alumnus, holding dual doctorate from Singapore & USA. He is the Dean-Faculty of Physiotherapy & Diagnostics at Jayoti Vidyapeeth Women's University, Jaipur, Rajasthan, India and the Founder & Director of ABHIAHS & AB Healthcare, a premier Healthcare organizations. He has been associated with many renowned International and national organizations. He is the only physiotherapist in India who got awarded the Govt. of India, Govt. of Rajasthan awards & Presidential medal for his services in Physiotherapy. He is the only physiotherapist who served in the Himalayas for 50 days at a height of 18000 feet. He is also a TEDx Speaker and also nominated for Padma Awards 2024, India's highest civilian awards by Government of India.



Ankit Bhargava^{1*}, Harshita Chaudhary²

¹Dean & Professor, Faculty of Physiotherapy & Diagnostics, Jayoti Vidyapeeth Women's University, Jaipur, Rajasthan, India

²BPT Final Year, Faculty of Physiotherapy & Diagnostics, Jayoti Vidyapeeth Women's University, Jaipur, Rajasthan, India

To investigate the effect of relaxation and breathing exercises and Cyriax manipulation on the stress management in female with leucorrhea

Background: Leucorrhea is a common gynaecological condition that refers to the abnormal vaginal discharge experienced by many women. This condition is often associated by infections, hormonal imbalance, reproductive health issue. It is characterised by change in colour, consistency and odour in normal vaginal discharge. Leucorrhea, beyond its localised symptoms can exhibit systemic manifestation affecting a woman's overall well being. Patient may report fatigue, weakness, pelvic pain, lower back pain, malaise.

Objective: To study the effect of relaxation and breathing exercise and cyriax mobilization on the stress management in female with leucorrhea.

Methods: A small scale study was conducted using pre and post experimental control design. After questionnaire, 30 subjects with abnormal vaginal discharge belonging to an age group of 17-35 years were selected in experimental 30 patient group with a frequency of 3 sessions with 10 repetitions in each session. Questionnaire were filled with before and after the study, using Cohen's perceived stress scale, visual analog scale respectively. The data was analysed using student 't' test.

Result: The result of the study shows that there was a significant reduction in the symptoms and amount of abnormal vaginal discharge. Based on statistical analysis, there was a significant effect of this approach for managing abnormal vaginal discharge in women.

Conclusion: Study concludes that clinically this approach relaxation, breathing exercise and cyriax mobilization an effective result in relief in symptoms and amount of abnormal vaginal discharge.

Keywords: Abnormal Vaginal Discharge, Relaxation Technique and Breathing Exercises.

Biography

Dr Ankit Bhargava is an Indian School of Business, Hyderabad & National University of Singapore alumnus, holding dual doctorate from Singapore & USA. He is the Dean-Faculty of Physiotherapy & Diagnostics at Jayoti Vidyapeeth Women's University, Jaipur, Rajasthan, India and the Founder & Director of ABHIAHS & AB Healthcare, a premier Healthcare organizations. He has been associated with many renowned International and national organizations. He is the only physiotherapist in India who got awarded the Govt. of India, Govt. of Rajasthan awards & Presidential medal for his services in Physiotherapy. He is the only physiotherapist who served in the Himalayas for 50 days at a height of 18000 feet. He is also a TEDx Speaker and also nominated for Padma Awards 2024, India's highest civilian awards by Government of India.



Ansaba Naseer^{1*}, Muhammed Nazeer², Rohit Raveendran², Bharat C Katragadda², Muhammed Ehsan Nazeer¹, Suzaan Shajil¹

¹North Cumbria Integrated Care, United Kingdom

²KIMS Health-Trivandrum, United Kingdom

Giant calf mass as a late manifestation of total knee arthroplasty failure - A case report and surgical approach

Aim: To report a rare case of a massive calf swelling as a late complication of Total Knee Arthroplasty (TKA), highlighting the role of polyethylene wear-induced osteolysis and the surgical approach for management.

Study Setting: A 75-year-old male, three years post-primary TKA, presented with a progressively enlarging, painless swelling in the popliteal and calf region. Clinical examination revealed a large, cystic, non-pulsatile mass with mild knee effusion. Radiological investigations confirmed periprosthetic osteolysis, component loosening, and a large synovial cyst extending into the calf.

Discussion: A two-stage surgical approach was undertaken. The first stage involved cyst excision via a posteromedial approach, revealing a polyethylene wear debris-induced inflammatory response. Microbiological evaluation was negative, and histopathology confirmed a foreign body reaction without infection. Following soft tissue healing, the second stage involved revision TKA with distal femoral replacement and tibial reconstruction. At one-year follow-up, the patient had pain-free knee function with no cyst recurrence.

This case underscores the importance of long-term follow-up after TKA to detect early signs of wear-induced osteolysis. Synovial cyst formation should be considered a potential marker of underlying prosthesis failure, warranting timely intervention to prevent extensive bone loss and complex revisions.

Biography

Dr. Naseer finished her MBBS from Yenepoya Medical College in Mangalore, India. She currently works as Trust Doctor in Trauma and Orthopaedics in the Cumberland Infirmary, Carlisle. With a keen interest in research, she has contributed to multiple PubMed-indexed journals, showcasing her commitment to academic excellence and evidence-based medicine.



Ansaba Naseer^{1*}, Muhammed Nazeer², Askhar Haphiz², Pradeep Moni², Praveen Muraleedharan², Muhammed Ehsan Nazeer¹, Suzaan Shajil¹

¹North Cumbria Integrated Care, United Kingdom

²KIMS Health -Trivandrum, United Kingdom

Silent breakdown: Spontaneous tendon ruptures in hemodialysis patients

Spontaneous tendon ruptures are rare but severe complications in patients undergoing long-term hemodialysis for End-Stage Kidney Disease (ESKD). The underlying mechanisms are multifactorial, involving chronic uremia, secondary hyperparathyroidism, vascular calcifications, and collagen degradation. These patients are prone to tendon weakening, leading to rupture even with minimal exertion. Prompt recognition, surgical repair, and structured rehabilitation are crucial to restoring function and preventing long-term disability.

Case Presentations: We report three cases of spontaneous tendon ruptures in hemodialysis patients, each highlighting different presentations and surgical management approaches.

Case 1: A 61-year-old male, on hemodialysis for five years due to diabetic nephropathy, presented with bilateral patellar tendon ruptures after experiencing sudden knee instability. MRI confirmed complete ruptures, and surgical repair with suture anchors and transosseous fixation was performed.

Case 2: A 44-year-old male, on hemodialysis for ten years due to IgA nephropathy, sustained bilateral triceps tendon ruptures with minimal exertion. Loss of active elbow extension led to surgical repair using suture anchor fixation, followed by an intensive rehabilitation program.

Case 3: A 26-year-old female with lupus nephritis on five years of hemodialysis experienced bilateral patellar tendon ruptures without preceding trauma. Surgical repair with augmentation techniques was performed to reinforce the weakened tendons. Rehabilitation led to satisfactory recovery.

Discussion: Tendon ruptures in hemodialysis patients often present bilaterally and without significant trauma. Chronic metabolic derangements, particularly hyperparathyroidism and uremic toxicity, contribute to tendon degeneration. Diagnosis can be delayed due to the subtle onset of symptoms, necessitating imaging with MRI or ultrasound for confirmation. Surgical repair is challenging due to poor tendon quality, requiring strong fixation techniques such as transosseous tunnels or suture anchors.

Postoperative management must balance early mobilization with the risk of repair failure. Rehabilitation protocols should be tailored to optimize tendon healing while preventing joint stiffness and muscle atrophy. Given the high recurrence risk, strategies to improve tendon integrity in ESKD patients, including better control of mineral bone disorders, warrant further investigation.

Conclusion: Spontaneous tendon ruptures are an underrecognized but disabling complication in hemodialysis patients. Awareness, early diagnosis, and appropriate surgical intervention are crucial for functional recovery. A multidisciplinary approach, including nephrologists, orthopedic surgeons, and physiotherapists, is essential for optimal management. Future research should focus on preventive strategies to reduce the incidence of these debilitating injuries.

Biography

Dr. Naseer finished her MBBS from Yenepoya Medical College in Mangalore, India. She currently works as Trust Doctor in Trauma and Orthopaedics in the Cumberland Infirmary, Carlisle. With a keen interest in research, she has contributed to multiple PubMed-indexed journals, showcasing her commitment to academic excellence and evidence-based medicine.



**Dr. Anthony Maher*, Dr. Tom Hoffman, Dr. Tom Hoffman,
Dr. Warren Leigh, Dr. Simon Young, Dr. Matt Brick,
Dr. Michael Caughey**

Waikato Hospital, New Zealand

Are all large rotator cuff tears created equal? Prognostic factors in surgically repaired large rotator cuff tears from the New Zealand rotator cuff cohort

Background: Large and retracted rotator cuff tears pose a difficult challenge for orthopaedic surgeons, with poorer outcomes noted in surgically repaired tendons. The New Zealand Rotator Cuff cohort represents the largest prospective cohort of rotator cuff repairs. In our cohort, there was a significant difference in outcomes in those with tears greater than 4cm.

The aim of the current study was to analyse the pain, functional and re-operation outcomes of large (>4cm) rotator cuff tears that had undergone surgical repair. Secondly, look for positive and negative prognostic factors for surgical outcomes in those with tears >4cm.

Study Design: Prospective cohort study.

Methods: This study was a multi-centre, multi-surgeon prospective cohort study of rotator cuff repairs from March 2009 until December 2010. Surgical data was collected by the operating surgeon. Flex SF (functional score), pain, post-operative data was collected at baseline, 6-, 12-, 24-months, 5 years, and now 14 years. We isolated large (>3cm) and massive (>5cm) tears from this cohort to analyse positive and negative prognostic factors.

Results: Overall, 264 tears larger than 4cm in anterior-posterior distance were analysed (this represents 10% of our overall cohort). Five year data is available for 81% of the cohort, 14 year data is now under collection (and will be available by the middle of the year). Tears over 4cm had lower 5 year Flex SF scores compared to smaller tears. The average Flex SF improvement score in tears over 4cm was of 13.5 (note: the minimal clinically important difference for Flex SF is 3 points). Good tendon quality had higher Flex SF scores vs Poor tendon quality. If tendon was 'easily' reducible, there was no difference in Flex SF score compared to smaller tears. 4% of large tears at 10 years had undergone a reverse shoulder replacement. Re-operation rate was 7.6%. A retrospective analysis of pre-operative MRI scans was carried out, fatty infiltration, glenohumeral arthrosis, and AC joint spurring had negative prognostic features.

Conclusion: Tears over 4cm had lower 5 year Flex SF scores, however the improvement from pre operative still was significantly higher than the minimally clinically important difference. Good prognostic factors included good tendon quality, easily reducible tendon stump, and lack of fatty infiltration and glenohumeral arthritis.

Biography

Dr. Anthony Maher is a consultant orthopaedic surgeon in private and public practice in Auckland and Hamilton, New Zealand Education: Bachelor of Science (Human Nutrition) - University of Otago 2001-2003. Bachelor of Medicine and Surgery – University of Otago 2004-2008. Orthopaedic Training: New Zealand Orthopaedic Association Trainee 2015-2019. Fellowships: 2020-2021 - COSI Sports Fellow, Gosford District Hospital, Central Coast. Shoulder and Elbow trauma, arthroplasty and sports, hip/knee arthroplasty. Supervisor Dr Ed Bateman 2021-2022 - Royal Prince Alfred Hospital, Sydney. Oncology and Revision Arthroplasty, Supervisor Assoc Professor Paul Stalley. Current Appointments: Waikato Public Hospital, Hamilton – Oncology, Arthroplasty, Upper Limb, Trauma. Southern Cross Hamilton – Arthroplasty, Upper Limb, Trauma. Franklin Hospital Auckland – MAKO Robotic Surgery, Arthroplasty, Upper Limb



Archana Vatwani

Old Dominion University Norfolk, VA, United States of America

Integrating holistic early rehabilitation in acute care: Evidence-based strategies for enhancing patient outcomes and optimizing costs

This presentation explores the critical role of holistic early rehabilitation within acute care environments, emphasizing its transformative impact on patient outcomes, its potential to prevent Post-Intensive Care Syndrome (PICS), and its effectiveness in reducing healthcare costs. By leveraging the International Classification of Functioning, Disability, and Health (ICF) model alongside trauma-informed care frameworks, this approach fosters a comprehensive strategy to support early intervention practices. The discussion on early mobilization will include the development and application of specialized training programs and mobility protocols, as well as strategies for nurturing an institutional culture that embraces early intervention. Moreover, the presentation will highlight the importance of institutional support and proactive leadership in spearheading these initiatives, demonstrating how these elements are key for successful implementation. Additionally, the presentation will outline the significant health benefits and cost-efficiency of early rehabilitation, showcasing the collective contributions to enhanced long-term health outcomes for patients. The critical role of interdisciplinary teams in these practices will be examined, showing the collaborative efforts required among healthcare professionals to assess, initiate, monitor, and advance timely rehabilitation interventions. From an economic perspective, this session offers insights into how early rehabilitation in acute care not only fosters better health outcomes but also drives significant cost savings. Overall, this presentation will provide a deep exploration of the methodologies and advantages of integrating holistic early rehabilitation into acute care settings, through the lens of evidence-based practices, the ICF and trauma-informed care frameworks, and strategic institutional initiatives.

Objectives:

1. Explore how holistic early rehabilitation positively influences patient outcomes, prevents Post-Intensive Care Syndrome (PICS), and lowers healthcare costs.
2. Learn to effectively use the International Classification of Functioning, Disability, and Health (ICF) model and trauma-informed care principles to enhance early intervention strategies in acute care.
3. Gain enhanced knowledge to create and implement training programs and mobility protocols that encourage early mobilization and support a proactive culture for early intervention in healthcare settings.
4. Discover the critical role of teamwork and the methods by which interdisciplinary teams effectively advance rehabilitation interventions in acute care settings.

Biography

Dr. Archana Vatwani, PT, DPT, EdD, MBA, CLWT, CDP, PMP, CEEAA is the Academic Program Director and Professor of the Doctor of Physical Therapy program at the University of St. Augustine for Health Sciences in Dallas, TX. She has nearly two decades of clinical and academic experience at The Johns Hopkins Hospital, Nova Southeastern University, and Old Dominion University. Dr. Vatwani's research focuses on enhancing cultural competence, advancing interprofessional education, and improving physical therapy practice in acute care as well as cardiovascular and pulmonary specialties. Her awards include the National Diversity Council's 2022 Healthcare Diversity Leader Award and the American Physical Therapy Association's 2022 Minority Faculty Development Award. She currently chairs the APTA Acute Care Education Committee and serves on the Nominating Committee for the APTA Academy of Leadership and Innovation's Global Health Special Interest Group, reflecting her ongoing commitment to leadership and service within the profession.



Archana Vawani

Old Dominion University Norfolk, VA, United States of America

Data-driven decisions: Enhancing patient outcomes through effective outcome measures

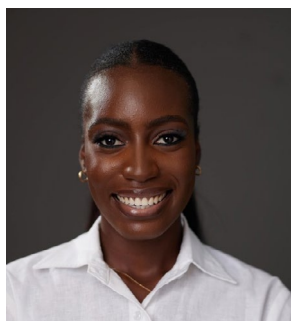
Outcome measures are fundamental tools in healthcare that provide a standardized approach to evaluating and monitoring patient progress, ensuring quality care, and enhancing overall patient outcomes. These measures are vital for assessing the effectiveness of interventions, guiding clinical decision-making, and supporting reimbursement processes with insurance providers. The use of reliable and valid outcome measures enables healthcare professionals to accurately assess patient status, make informed decisions, and establish targeted, measurable goals. This presentation will explore the application of outcome measures in high-acuity populations, with a particular focus on cardiovascular and pulmonary physical therapy patients. It will address common trends and challenges in the implementation of these measures in clinical practice, drawing on research findings that identifies both barriers to effective utilization and strategies for overcoming them. Additionally, the presentation will highlight the role of outcome measures in shaping rehabilitation evaluations, guiding evidence-based interventions, and optimizing patient outcomes. The discussion will also highlight how integrating outcome measures into clinical practice not only aligns with evidence-based principles but also enhances the accuracy of interventions. The presentation will emphasize that by grounding clinical decisions in strong data, healthcare professionals can ensure that interventions not only meet clinical standards but also reflect the most current research findings, thereby promoting improved healthcare management and patient care.

Objectives:

- Understand the importance of using outcome measures to monitor and enhance patient care in high-acuity settings.
- Explore common challenges and effective strategies for applying outcome measures in clinical practice.
- Discover how to utilize outcome measures for improved clinical decision-making and evidence-based interventions.
- Implement data-driven decisions to ensure interventions are clinically effective and grounded in the latest evidence from current literature.

Biography

Dr. Archana Vatwani, PT, DPT, EdD, MBA, CLWT, CDP, PMP, CEEAA is the Academic Program Director and Professor of the Doctor of Physical Therapy program at the University of St. Augustine for Health Sciences in Dallas, TX. She has nearly two decades of clinical and academic experience at The Johns Hopkins Hospital, Nova Southeastern University, and Old Dominion University. Dr. Vatwani's research focuses on enhancing cultural competence, advancing interprofessional education, and improving physical therapy practice in acute care as well as cardiovascular and pulmonary specialties. Her awards include the National Diversity Council's 2022 Healthcare Diversity Leader Award and the American Physical Therapy Association's 2022 Minority Faculty Development Award. She currently chairs the APTA Acute Care Education Committee and serves on the Nominating Committee for the APTA Academy of Leadership and Innovation's Global Health Special Interest Group, reflecting her ongoing commitment to leadership and service within the profession.



Dr. Arit Akiba*, Dr. Douglas Bairstow, Mr. James Bassett, Professor Paul Baker

Trauma and Orthopaedic department, James Cook University Hospital, Middlesbrough, United Kingdom

Iatrogenic hypercalcaemia secondary to antibiotic-eluting absorbable calcium sulphate beads in orthopaedic surgery

Introduction: Calcium-Sulphate Beads (CSB) are bio-absorbable antibiotic carriers which are used to manage surgical site infections as well as fill dead space. Iatrogenic hypercalcaemia from using CSB is a rare but potentially serious adverse effect.

Method: In this case report, we describe a patient who developed symptomatic hypercalcaemia secondary to using CSB during a Girdlestone excision arthroplasty.

Results: An 86-year-old woman with a recent hip hemiarthroplasty for hip fracture developed a deep wound infection. Despite debridement and washout and prolonged intravenous antibiotics, her infection worsened. The orthopaedic consensus was to remove the infected prosthesis with a Girdlestone excision arthroplasty.

Two days post the Girdlestone, she developed decreased consciousness and altered mental status. She was afebrile with normal cardiovascular respiratory and abdominal examinations but a P on the AVPU scale (response only to painful stimuli). Blood tests showed severe hypercalcaemia (corrected calcium 3.34mmol/L).

She had no past medical history of parathyroid or calcium disorders. Her previous calcium results before Girdlestone were within normal limits. She was taking Alendronic acid and calcium/vitamin D supplements for treatment of osteoporosis following her initial hip fracture.

During her operation, Stimulan (calcium sulphate beads) impregnated with antibiotics had been inserted (see post-operative X-ray below). Following discussions between orthogeriatric medicine and orthopaedic teams, she was treated with intravenous fluids and intravenous zoledronic acid 4mg infusion. Her clinical status improved, and hypercalcaemia resolved over the following week.

A literature review discovered the incidence of hypercalcaemia due to CSB is about 4.2%, with about 3.91% of cases being transient in nature, and 0.28% requiring treatment.

Conclusion: This case illustrates the importance of including iatrogenic hypercalcaemia as a differential diagnosis for post-operative patients presenting with altered mental status after the use of CSB.

Biography

Dr. Akiba obtained her medical degree from Charles University Faculty of Medicine Hradec Kralove in 2023. She currently works as a Foundation Year 2 doctor in Trauma and Orthopedics at James Cook University Hospital Middlesbrough. She has a keen interest in research and medical education and has helped organize local and regional teaching sessions for medical students and practitioners.



Ashmitha Vindya¹, Siddesh Bhushan G Nagabhushan²

¹St Peter's and Ashford Hospital NHS Trust, United Kingdom

²Trust Grade SHO, Ashford & St Peter's NHS Trust



Optimizing acute Soft Tissue Knee Injury Management (STKIM): A retrospective study on protocol implementation

Introduction: Soft Tissue Knee Injuries (STKI) are common presentations in emergency departments, yet no standardized protocol exists for their management. Delays in imaging, specialist review, and physiotherapy contribute to inefficiencies, increased healthcare costs, and prolonged patient recovery. This study aimed to evaluate current STKI management pathways and assess the impact of a physiotherapy-led protocol on streamlining care.

Methods: A retrospective study was conducted, including all first-time knee clinic attendees from January to May 2023. Patients with chronic knee conditions or inadequate documentation were excluded. Data collected included initial point of presentation (A&E, GP, or other), time intervals from presentation to knee clinic, MRI referral rates, and time taken for imaging and review. The financial impact of STKI management was also analyzed. Additionally, the effects of an Acute Knee Screening Service (AKSS), led by an experienced physiotherapist in A&E, were assessed.

Results: Of the knee clinic attendees, 64% initially presented to A&E, with 81% referred for MRI. However, 45% of MRI scans were deemed unnecessary for clinical decision-making. Delays were evident, with nearly 60% waiting over four weeks for MRI and only 11% receiving timely scan reviews. The AKSS demonstrated improved efficiency, with 45% of cases managed without further medical review. Among those referred for MRI, 88% showed significant pathology. The introduction of a physiotherapy-first protocol reduced knee clinic referrals by 30%, with a potential annual cost saving of £132,000.

Discussion & Conclusion: A physiotherapy-led approach in A&E significantly improves STKI management by reducing MRI overuse, expediting appropriate care, and cutting costs. Implementing structured assessment and referral pathways, such as Virtual Fracture Clinics and physiotherapy triage, enhances patient outcomes while optimizing healthcare resources. Future research should explore long-term patient outcomes following protocol implementation.

Biography

Dr Ashmitha Vindya (MBBS), Trust Grade SHO, St Peter's and Ashford Hospital NHS Trust. She is currently a doctor working at St Peter's and Ashford Hospitals as a trust grade SHO. She has a keen interest in orthopedics research. Ever since starting her role at the NHS just 8 months ago she has been actively involved in clinical practice, research, and quality improvement initiatives. She is involved in two studies at the Trauma and Orthopedics department currently and is aiming to present her work at national and international conferences. Outside of clinical duties, she is engaged in dancing and painting during my free time.

Siddesh Bhushan G Nagabhushan is currently working as a resident doctor in Trauma & Orthopaedics, with a strong interest in sports medicine, medical education, and clinical research. Over the course of my NHS career, He has been actively involved in patient care, organising teaching programs, and quality improvement projects. He completed a Postgraduate Certificate in Medical Education and Leadership. He has presented his work at academic forums and is working towards further publications in peer-reviewed journals. Outside of medicine, he enjoys football, hiking & working out.



Aubrey Hope Shaw^{1*} PhD, Sharon Kay Stoll² PhD

¹Research Consultant in the Center for ETHICS* in the Movement Sciences Department, University of Idaho, Moscow, ID, United States of America

²Director of the Center for ETHICS* in the Movement Sciences Department, University of Idaho, Moscow, ID, United States of America

The folly of thinking: I am smarter therefore I know better - Moral reasoning for pre-professional health and professional medical students

Pre-Professionals believe studying the ethics of disability is not important and does not pertain to their future career in healthcare. Unfortunately, individuals fall into different fallacies of thinking when it pertains to people with physical disabilities: Fallacy of Authority and Fallacy of Pity. Thus, the purpose of this presentation is twofold: 1) to discuss the fallacies of reasoning and how this perpetuates discrimination towards people with physical disabilities and 2) to provide three educational solutions to improve pre-professional and medical professionals' perspectives on practical ethics. Discrimination against people with physical disabilities exists in all realms of society. Michael Oliver, a prominent disability studies researcher, discussed the importance of being a person with a physical disability when researching and teaching disability studies. Furthermore, Oliver argued that able-bodied people do not think discrimination exists because they are not the individual with a physical disability. Able-bodied individuals also often believe they know what is best for people with physical disabilities, even though they have no experience with the disability themselves. Moral reasoning literature discusses different fallacies of reasoning about ethical issues. Fox and DeMarco specifically discuss how these fallacies can have a negative effect on our reasoning. The fallacies of reasoning which usually affect pre-professionals in healthcare are the fallacy of authority and the fallacy of pity. These reasoning fallacies result in prejudices which favors one's thoughts over another resulting in discrimination toward the population. Different solutions are available. One such solution noted by Levinas is perspective taking, which helps to understand what it truly is like to be another. Furthermore, it allows one to critically think about how one is being treated and how one wants to be treated with dignity and respect. This presentation will offer examples of two other solutions as well as practical applications using all three in the education of pre-professionals and even professionals in the medical field.

Biography

Aubrey Hope Shaw earned her PhD in character education and sport pedagogy from the Center for ETHICS* at the University of Idaho. At six months old, Aubrey incurred a traumatic brain injury and due to the severity of her condition she endured years of therapy and special education. Aubrey has co-authored with Dr. Sharon Stoll a combination of 58 professional presentations and written publications which focuses on the ethics of including students with physical disabilities in physical education, recreation, and sport. Aubrey was named one of the 2024 Emerging Scholars for the International Conference on Sport and Society.



Aubrey Hope Shaw^{1*} PhD, Sharon Kay Stoll² PhD

¹Research Consultant in the Center for ETHICS in the Movement Sciences Department, University of Idaho, Moscow, ID, United States of America

²Director of the Center for ETHICS in the Movement Sciences Department, University of Idaho, Moscow, ID, United States of America

A challenge for you from a person with a physical disability

Michael Oliver, a disability studies researcher, argued the medical model of disability can lead to inaccurate perceptions about the competencies of people with physical disabilities. What occurs is that the system focuses more on the condition and then objectifies the person to the point of not being seen. Moreover, Oliver argued disability is a social construct created by society, which sociologists ignore. This presentation is not a criticism about the medical model of disability, but a reflection on how the medical model of disability can negatively affect common perception and professional educational practice concerning competency of people with physical disabilities. Medical professionals play a pivotal role in the lives of those with physical disabilities, which can affect how that person is perceived and perceives the world. Myths about people with physical disabilities exist, suggesting that all people with physical disabilities also have a cognitive disability as well. Medical professionals can help dispel this myth by advocating and teaching others that the populations are different and should not be considered together. For example, medical professionals must advocate for people with physical disabilities to be in their least restrictive environment. Abled-bodied populations including those in administration rail against inclusion because they believe the abled-bodied will not be able to meet their goals when others with perceived limitations are included. But how does advocacy happen? Through rethinking the medical educational model and healthcare professionals' own practice, people with physical disabilities can be valued and their voices heard. The purpose of this presentation by a person with a physical disability is twofold: 1) to discuss what the negative practices are and 2) to offer solutions for healthcare providers to apply in their practices such as being an advocate, seeing the individual, and being willing to learn more about other perspectives.

Biography

Aubrey Hope Shaw earned her PhD in character education and sport pedagogy from the Center for ETHICS* at the University of Idaho. At six months old, Aubrey incurred a traumatic brain injury and due to the severity of her condition she endured years of therapy and special education. Aubrey has co-authored with Dr. Sharon Stoll a combination of 58 professional presentations and written publications which focuses on the ethics of including students with physical disabilities in physical education, recreation, and sport. Aubrey was named one of the 2024 Emerging Scholar for the International Conference on Sport and Society.



Protik Mukherjee¹, Navdeep Singh Keer¹, Loveneesh Krishna¹, Utkarsh Jain¹, Balu Ravi^{2*}

¹Central Institute of Orthopaedics, VMMC and Safdarjung Hospital, New Delhi, India

²Department of Orthopaedics, The Royal Wolverhampton NHS Trust, Wolverhampton, UK

Fixed angle locking plate in patellar fractures: A prospective evaluation of functional and radiological outcomes

Background: Patellar fractures account for approximately 1% of all skeletal injuries and can significantly disrupt the extensor mechanism of the knee. Traditional fixation methods such as Tension Band Wiring (TBW) are often associated with complications including hardware irritation, fixation failure, and impaired knee function. Fixed angle locking plates have emerged as a promising alternative, particularly for comminuted and osteoporotic fractures, offering enhanced stability and allowing early mobilisation.

Methods: A prospective study was conducted over 18 months at a tertiary care centre. Twenty-five patients aged over 20 years with displaced or comminuted patellar fractures underwent Open Reduction and Internal Fixation (ORIF) with fixed angle locking plates. Patients were evaluated at 3 weeks, 6 weeks, 3 months, and 6 months postoperatively. Clinical outcomes were assessed using the Knee Outcome Survey–Activities of Daily Living (KOS-ADL) score, active knee flexion measurements, and radiographic union.

Results: The mean KOS-ADL score improved significantly from 11.56 preoperatively to 63.46 at 24 weeks ($p < 0.001$). Mean knee flexion increased from 67.28° at 4 weeks to 122.71° at 24 weeks. Radiological union was achieved in 92% of patients by 24 weeks. The complication rate was low (16.8%), including one non-union with implant failure, one superficial surgical site infection, and two cases of anterior knee pain. A significant positive correlation was observed between knee flexion and KOS-ADL score ($r = 0.60$, $p = 0.002$), while delay in surgical intervention negatively affected outcomes ($r = -0.44$, $p = 0.02$).

Conclusion: Fixed angle locking plates offer stable fixation, facilitate early mobilisation, and achieve excellent functional and radiological outcomes in the management of patellar fractures. This technique presents a reliable alternative to traditional fixation methods, particularly in complex or comminuted fractures, with a favourable recovery profile and lower complication rates.

Disclosure: The authors declare no conflicts of interest.

Biography

Balu Ravi completed his orthopaedic training in Safdarjung Hospital, New Delhi, India. He have been working in the UK as a Senior Clinical Fellow in Trauma and Orthopaedics since April 2020 at the Royal Wolverhampton NHS trust. He passed his FRCS Tr. And Orth exams in 2023 and aim to pursue a career in the NHS as a consultant.



**Assoc. Prof. Bulent Kılıc^{1*}, Muhammet Bugra Tellioglu¹,
Fatih Şenturk¹, Süleyman Altun¹, Sevan Sivacioglu²**

¹Department of Orthopaedics and Traumatology, Istanbul Kanuni Sultan Süleyman Training and Research Hospital, Istanbul, Turkey

²Private Practice Physician, Department of Orthopedics and Traumatology, Istanbul, Turkey

Outcomes of Total Knee Arthroplasty (TKA) without rehabilitation using a midvastus approach with complete synovectomy and subperiosteal posteromedial release

Background: Total Knee Arthroplasty (TKA) aims to restore function and relieve pain while preserving the extensor mechanism. The midvastus approach allows sparing of quadriceps fibers, potentially improving early recovery. In this study, we evaluated the clinical outcomes of TKA performed with a complete subperiosteal synovectomy and posteromedial release extending to the medial collateral ligament insertion, without a formal rehabilitation program. Patients were allowed unrestricted early full Range Of Motion (ROM) and mobilization.

Methods: A total of 69 patients (76 knees, including 7 bilateral TKA cases) with a mean age of 67 years underwent TKA using a midvastus incision. Complete synovectomy and posteromedial release were performed subperiosteally. Postoperatively, immediate full weight-bearing and unrestricted ROM were permitted without supervised physiotherapy. Clinical outcomes included operative time, hospital stay, drainage volume, hemoglobin decrease, transfusion rates, ROM, pain (VAS), and Knee Society Score (KSS). Extensor function was assessed by the ability to perform a straight-leg raise postoperatively.

Results: The mean operative time was 88 minutes, and the average hospital stay was 5.1 days. Postoperative drainage averaged 338 mL, with a mean hemoglobin decrease of 2.3 g/dL; 68% of patients required no transfusion. Maximum knee flexion improved from 90° preoperatively to 105° postoperatively ($p < 0.001$). VAS pain scores decreased from 7.6 to 2.5 ($p < 0.001$). The KSS clinical score improved from 39 to 85 ($p < 0.001$), and the functional score from 29 to 80 ($p < 0.001$). Importantly, no patient experienced extensor lag or early strength loss, and all were able to perform a straight-leg raise on postoperative day one.

Conclusion: The combination of midvastus muscle-sparing incision, subperiosteal total synovectomy, and posteromedial release allows safe early mobilization without supervised rehabilitation, while preserving extensor mechanism integrity. This technique yielded excellent early pain relief, improved ROM, and significant functional gains, supporting its effectiveness in total knee arthroplasty.

Biography

Assoc. Prof. Bulent Kılıc is an orthopaedic surgeon at İstanbul Kanuni Sultan Süleyman Training and Research Hospital. He specializes in knee arthroplasty, minimally invasive surgical approaches, and perioperative management in joint replacement surgery. He has authored several peer-reviewed publications and has presented at national and international congresses. His current focus is on improving functional outcomes after total knee arthroplasty.



Catalina Vidal^{1*}, Diego Arredondo², Valeria Herskovic², Daniel Lobos¹, Hugo Demandes¹, Fiorella Biancardi³, Mauricio Campos¹, Gustavo Torres⁴

¹Department of Orthopedics and Traumatology, Pontificia Universidad Católica de Chile, Santiago, Chile

²Department of Computer Science, Pontificia Universidad Católica de Chile, Santiago, Chile

³School of Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile

⁴Department of Physical Therapy, School of Health Sciences, Pontificia Universidad Católica de Chile, Santiago, Chile

Feasibility of an augmented reality novel approach for the rehabilitation of chronic low back pain patients with kinesiophobia

Introduction: Chronic Low Back Pain (CLBP) is a prevalent and disabling condition often associated with kinesiophobia, which can perpetuate pain and functional limitations. Current virtual reality-based rehabilitation tools show promise but are frequently inaccessible and fail to directly address fear-avoidance behaviors.

Objective: To evaluate the feasibility of a novel approach that combines Augmented Reality (AR) and computer vision algorithms for the rehabilitation of patients suffering from CLBP and kinesiophobia.

Methods: This proof-of-concept study employed an iterative development and testing approach within a mixed-methods design, involving participants with Chronic Low Back Pain (CLBP). The study was conducted in a controlled research setting, where all assessments and interventions were carried out in person using a mobile Augmented Reality (AR) technology called AnReal. AnReal consists of a mobile application that integrates artificial intelligence to merge AR and Virtual Reality (VR). The application was specifically designed to support rehabilitation exercises, particularly targeting forward bending movements—a common difficulty among individuals with CLBP. An Real provides visual feedback by displaying a video that simulates the continuation of the bending motion, ultimately showing the patient's feet. This creates the illusion of completing the movement, thereby reducing fear of motion through a visual feedback loop. Participants were adults over 18 years of age, diagnosed with non-specific CLBP, with less than 40 degrees of spinal forward flexion. They performed lumbar flexion exercises guided by the AnReal system. Baseline characteristics collected included age, sex, medical history, and physical activity levels. Clinical assessments included the Visual Analog Scale (VAS), Roland-Morris Disability Questionnaire, and the Tampa Scale of Kinesiophobia. Primary outcomes included the Simulator Sickness Questionnaire (SSQ), Range of Motion (ROM) measurements, and qualitative data obtained through semi-structured interviews.

Results: The median age was 59 years (range 19–63), and 50% of the patients were female. Patient characteristics are shown in Table 1. The median pain score on the VAS was 7.8 (range 5.2–8), median of Roland Morris Disability Questionnaire was 17 (4–24) and the median kinesiophobia score was 30 points (25–44). Participants feedback on their experience using the technology, reported in cybersickness questionnaire that none of them felt fatigue, difficulty focusing, increased salivation, nausea, or burping. Symptoms of general discomfort, eye strain, difficulty concentrating, fullness of head, dizzy (with eyes closed), vertigo and stomach awareness, presented only slight symptoms in some patients. Most patients agreed that the transition from vision to video was harmonious and that the video help to do the bending task. Patient #1 reported that the guidance provided by the device, specifically the visual cues encouraging greater bending, motivated them to push further: Of course, because the machine was telling me to go lower, I was trying harder to go lower.

Conclusions: This AR-based intervention was safe, well-tolerated, and promising for addressing kinesiophobia in CLBP patients. This innovative, low-cost AR tool could offer scalable rehabilitation options targeting fear-related movement avoidance in chronic pain populations.

Biography

Catalina Vidal studied Physical Therapy at the Pontificia Universidad Católica de Chile, where she also completed a Master's degree in Health Sciences Research. She currently serves as an Associate Researcher in the Department of Orthopedics and Traumatology at the same university. Her research focuses on musculoskeletal disorders, including clinical and imaging-based diagnostics, as well as epidemiological studies related to healthcare access. She is also actively involved in medical education, particularly in the training of residents.



Dr. Chiara Jade Vedi^{1*}, Mr. Donald Davidson¹, Dr. Abbeykeith Kugasenanchettiar¹, Dr. David Onoja², Dr. Mya Hmu Thwe³, Dr. Ivan Minnock³

¹Department of Trauma & Orthopaedics, Ealing Hospital, London North West University Healthcare NHS Trust, London, UK

²Digital Clinical and Operational Team, Ealing Hospital, London North West University Healthcare NHS Trust, London, UK

³Accident & Emergency Department, Ealing Hospital, London North West University Healthcare NHS Trust, London, UK

Digitising multidisciplinary documentation to improve clinical communication and patient flow: A quality improvement initiative at a high-performing district general hospital

Background: Ealing Hospital, part of London North West University Healthcare NHS Trust (LNUH), performs strongly in national hip fracture metrics. Despite this, internal feedback revealed ongoing challenges with fragmented multidisciplinary documentation, lack of real time updates, and uncertainty regarding the most up-to-date management plans. These issues were associated with discharge delays, inconsistent decision-making, and increased reliance on Temporary Escalation Spaces (TES).

Methods: A digital board round tool was co-developed with the Multidisciplinary Team (MDT) and piloted on orthopaedic wards for patients with fragility femoral fractures. The tool was designed to standardise documentation of key clinical milestones across the inpatient journey, from pre-operative assessment through to post-operative recovery and discharge planning. A multidisciplinary staff survey assessed baseline perceptions of documentation clarity and communication efficiency.

Results: The lowest-rated domains in the MDT survey were investigation tracking (mean score 2.50) and documentation of post-operative progress (2.63), reflecting concerns about poor visibility of outstanding diagnostics and inconsistent recording of patient recovery. Free-text feedback reinforced these gaps, with staff highlighting difficulties in locating relevant updates and unclear management decisions. These documentation shortcomings were perceived to delay care coordination, increase reliance on verbal handovers, and hinder timely discharge planning. Post-intervention outcome data collection is ongoing, focusing on discharge timing, length of stay, and MDT-reported communication quality.

Conclusion: This digital documentation intervention shows strong potential to enhance real time visibility of inpatient progress, streamline communication, and reduce discharge delays in orthopaedic care. Its implementation aims to address longstanding challenges related to fragmented MDT input and unclear clinical planning. Pending demonstrable improvements in post-intervention outcomes, the project has secured both clinical and operational support for

scale-up across the entire surgical division at London North West University Healthcare NHS Trust. It is anticipated that post-intervention data will demonstrate the initiative's contribution to Trust priorities, including reducing inpatient length of stay, increasing pre-5pm discharges, and minimising reliance on TES.

Biography

Dr. Chiara Jade Vedi is an FY2 doctor in Trauma and Orthopaedics at Ealing Hospital, London North West University Healthcare NHS Trust. She graduated from Imperial College London in 2023 with an MBBS and completed an intercalated BSc in Endocrinology in 2021, receiving the David Lees Memorial Prize for academic excellence and the Society for Endocrinology Undergraduate Achievement Award. She has a strong interest in plastic surgery, particularly trauma and reconstructive surgery, and is actively involved in surgical education and quality improvement.



Eslam Hassan

University Hospitals Dorset NHS Foundation Trust, United Kingdom

Radial head arthroplasty versus open reduction and internal fixation for Mason type III and IV fractures: A systematic review and meta-analysis

The aim of this systematic review and meta-analysis was to compare the clinical outcomes of Radial Head Arthroplasty (RHA) and Open Reduction and Internal Fixation (ORIF) for Mason type III and IV radial head fractures.

A comprehensive search identified eight cohort studies including a total of 457 patients. Outcome measures assessed included Range of Motion (ROM), Mayo Elbow Performance Score (MEPS), Disabilities of the Arm, Shoulder, and Hand (DASH) score, and complication rates. Statistical analyses were performed to evaluate differences between the two surgical techniques, and heterogeneity was assessed using the I^2 statistic.

Radial Head Arthroplasty (RHA) was associated with significantly improved elbow extension, higher MEPS scores, and lower complication rates compared to ORIF, particularly in cases with severe comminution or Mason type IV fractures. In contrast, ORIF demonstrated comparable outcomes in long-term ROM and DASH scores, especially in younger patients with less complex fracture patterns.

Radial Head Arthroplasty (RHA) appears to offer superior functional outcomes and fewer complications in appropriately selected patients, while ORIF remains a viable option for younger individuals with simpler fracture configurations. Surgical decisions should be individualized based on fracture severity, patient factors, and surgeon expertise. Further high-quality randomized controlled trials are necessary to establish definitive treatment guidelines.

Keywords: Radial Head Fracture, Radial Head Arthroplasty, Open Reduction Internal Fixation, Mason Classification, Elbow Trauma, Systematic Review, Meta-Analysis.

Biography

Eslam Hassan is a Senior Clinical Fellow in Trauma and Orthopaedics at a Major Trauma Centre in Cardiff, UK. He completed his medical degree in Cairo and holds a Master's in Orthopaedic Surgery from Ain Shams University. He is a Member of the Royal College of Surgeons (MRCS) and has been working in the NHS since 2020 with full GMC registration. He has a broad range of clinical experience, with a logbook of over 450 procedures and a particular interest in trauma surgery. He has published five peer-reviewed papers and presented a systematic review and meta-analysis at EFORT and WIMTO. He holds certifications in ATLS, BSS, and AO Basic, and is actively involved in surgical education, having organised surgical skills courses and contributed to audits and quality improvement initiatives.



Eslam Hassan^{1*}, Abdelfatah M. Elsenosy², Nika M. Perkovic², Karim Rezk³, Mustafa Al-Alawi², Wael R. Elbagory⁴, Radwa A. Delewar⁵, Michael Kent²

¹Trauma and Orthopedics, Poole General Hospital, Poole, GBR

²Trauma and Orthopedics, University Hospitals Dorset NHS Foundation Trust, Poole, GBR

³Trauma and Orthopedics, Airedale NHS Foundation Trust, West Yorkshire, GBR

⁴Anesthesia, Southend University Hospital, Southend-on-Sea, GBR ⁵Pharmacology, Alexandria University, Alexandria, EGY

Incidence of nonsimultaneous contralateral neck of femur fractures: A single-center retrospective cohort study

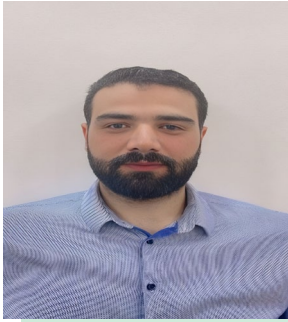
Nonsimultaneous contralateral Neck of Femur (NOF) fractures are associated with significant morbidity and mortality in the elderly population. This retrospective cohort study aimed to assess the incidence, risk factors, and outcomes of these fractures in patients treated at a single center between 2011 and 2023. Data were sourced from the National Hip Fracture Database for individuals aged 60 years and older who sustained a contralateral NOF fracture following an initial hip fracture. Of 9,165 patients, 511 (5.57%) experienced a contralateral fracture, with a mean interval of 1.8 years between injuries. The average age was 84.5 years, and 77.6% were female. Common comorbidities included dementia (35.8%), recurrent falls (8.4%), and osteoporosis (9%). Intracapsular fractures were the most frequent, accounting for 60.1% of cases. Post-discharge, only 38.1% of patients returned to their usual residence, and independent mobility declined substantially after the first fracture, with just 51.8% maintaining independence. The overall mortality rate was 65.7%, with an average of 2.03 years between the second fracture and death. These findings highlight the high vulnerability of this patient population and underscore the need for targeted prevention strategies, including fall prevention, osteoporosis management, and tailored care for individuals with cognitive impairment. Further research is warranted to develop predictive tools and evaluate early interventions aimed at improving outcomes in this high-risk group.

Categories: Trauma, Orthopedics.

Keywords: Contralateral Hip Fracture, Dementia, Elderly Patients, Falls, Hip Fracture Outcomes, Mortality, Neck of Femur, Orthopedics, Osteoporosis, Retrospective Cohort.

Biography

Eslam Hassan is a Senior Clinical Fellow in Trauma and Orthopaedics at a Major Trauma Centre in Cardiff, UK. He completed his medical degree in Cairo and holds a Master's in Orthopaedic Surgery from Ain Shams University. He is a Member of the Royal College of Surgeons (MRCS) and has been working in the NHS since 2020 with full GMC registration. He has a broad range of clinical experience, with a logbook of over 450 procedures and a particular interest in trauma surgery. He has published five peer-reviewed papers and presented a systematic review and meta-analysis at EFORT and WIMTO. He holds certifications in ATLS, BSS, and AO Basic, and is actively involved in surgical education, having organised surgical skills courses and contributed to audits and quality improvement initiatives.



Mr. Ezaldeen Abu Shareah*, Mr. Waseem Khedr

Derriford Hospital, Plymouth, UK

Post operative blood check on patients had knee or hip replacement audit

Aim: The aim of this project was to check if checking bloods post primary knee or hip arthroplasty needed or not and driving to reduce the Length of Stay (LOS) and move towards day-case primary hip and knee arthroplasty.

Methodology: This retrospective study included all patients who underwent a primary knee or hip arthroplasty in Derriford Hospital in the period between July 2024-Oct 2024. Blood tests check to investigate the incidence of postoperative anaemia, electrolyte abnormalities, and incidence of acute kidney injury.

Results: 2 out of 279 found to have symptomatic anaemia required transfusion. 15 Out of 279 patients found to have mild hyponatremia had no intervention. 6 Out of 279 patients found to have moderate hyponatremia required interventions (fluid restrictions, stopping medications). 4 Out of 279 patients found to have severe hyponatremia required doing further investigations interventions and involving medical team. 3 out of 279 patients found to have mild/moderate hypokalemia who required interventions (Snad K tablets, ECG and repeating bloods). 3 pt found to have hyperkalaemia (mild and moderate) with no intervention (just repeating bloods). No patient had AKI post op. Most patient who developed post op complications have multiple comorbidities and on multiple medications that can contribute to these complications (antiplatelet, diuretics, NSAID..).

Conclusion and Recommendation: Postoperative blood test abnormalities were common, but the majority were mild and rarely influenced management in low-risk cohorts of patients, with overall low postoperative intervention rates. Routine post-operative blood tests after knee or hip arthroplasty are not always necessary, and clinicians should consider risk factors like pre-existing conditions or blood loss to determine if testing is needed.

Biography

Ezaldeen Abu Shareah is a core surgical trainee working in Derriford Hospital. He Completed his medical school in Jordan and graduated in 2017, He has started working in the UK 2021 in A&E. Ezaldeen has interested in orthopedics and therefore, he joined Trauma and Orthopaedic (T&O) department in Derriford Hospital in 2023. He has done many audits in T&O and presented some of them in national and international meeting.



Mr. Ezaldeen Abu Shareah*, Mr. Charles Gozzard

Derriford Hospital, Plymouth, UK

Second cycle of distal radius fracture audit (BOAST guidelines)

Standard: BOA Standards for Trauma and Orthopaedics (BOASTs) states: Repeat radiographs of the wrist between 1-2 weeks after injury (or manipulation) where it is thought that the fracture pattern is unstable AND when subsequent displacement will lead to surgical intervention.

Aim: To ensure compliance with the guidelines.

Methodology: PACS used to identify patients who have had Radiographs of distal radius fractures in July 2023. Fractures classified into either stable or unstable based on the initial x ray appearances in ED out of cast.

Interventions: Guidance (algorithm poster) for repeating X rays for distal radius fractures was put in fracture clinic.

Results: A total of 56 right distal radius fractures were followed up in fracture clinic in July 2023 we found that:

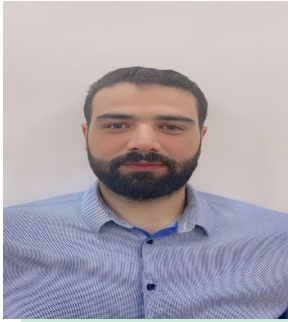
- 24 patients had stable distal radius fractures.
- 32 of these patients found to have unstable fractures.
- 33% of patients with stable fractures (8 out of 24) had at least 1 repeat x rays, none of these 8 patients had further displacement on the 1st repeat radiograph nor on the 2nd repeat radiograph (7) or the third repeat radiograph (1) post injury.
- 2 patients with unstable wrist fractures had significant comorbidities (heart disease, stroke, severe frailty) and had at least one repeat Xray, with no surgical intervention resulting.

Conclusion:

- 15 instances of radiographs which could have been avoided in the 2nd cycle compared to 30 radiographs in the first cycle.
- 67% compliance with BOAST point 12 for stable fractures in the 2nd cycle compared to 53% compliance in the first cycle.

Biography

Ezaldeen Abu Shareah is a core surgical trainee working in Derriford Hospital. He Completed his medical school in Jordan and graduated in 2017, He has started working in the UK 2021 in A&E. Ezaldeen has interested in orthopedics and therefore, he joined Trauma and Orthopaedic (T&O) department in Derriford Hospital in 2023. He has done many audits in T&O and presented some of them in national and international meeting.



Ezaldeen Abu Shareah*, Ahmad Abd El Maksoud, Sagurav Shrestha, Mr. Paul Fewing

Derriford Hospital, United Kingdom

Foraminotomy versus ACDF for proximal foraminal stenosis project

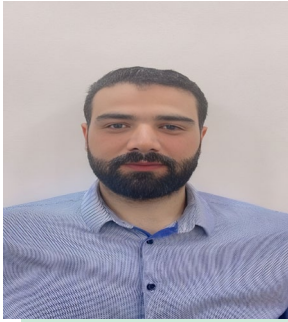
Background: There is still controversy in the literature over whether Cervical Foraminotomy or Anterior Cervical Discectomy and Fusion (ACDF) is best for treating cervical Radiculopathy. Numerous studies have focused on the respective complication rates of these procedures and outcome measures with a lack of due consideration to preoperative MRI findings. Proximal foraminal stenosis can theoretically be accessed via either approach. We aimed to investigate whether Patient Reported Outcome Measures (PROMs) favoured one approach over the other in patients with proximal foraminal stenosis.

Results: PROMs scores were available for 33 ACDF patients and 37 Foraminotomy patients. Average surgery time in ACDF group was 167 minutes while Foraminotomy 142 minutes. Average Length of hospital stay was 6.24 days in the Foraminotomy group and 3.54 days in the ACDF group. 18 patients were excluded due to having both surgeries (2 of which developed CSF leaks postoperatively). Of the included patients there were no postoperative complications. 13 patients in the ACDF had Central or Paracentral stenosis in addition to proximal Foraminal stenosis, 3 patients in the Foraminotomy group had some significant Paracentral herniation just before the Proximal foramen. The majority of patients in both groups had pure proximal Foraminal stenosis (N=17 (ACDF), 20 (Foraminotomy)). The results showed no significant difference in PROMs between patients who received an ACDF or a Foraminotomy for Proximal foraminal stenosis (EQ5DL, NDI, and satisfaction, $P=0.268$, 0.253 and 0.327). There was no correlation between location of the stenosis and PROM scores in either group.

A single centre retrospective review of patients undergoing either ACDF or Cervical foraminotomy over the period 2012 to 2022. VAS, Neck Disability Index (NDI), EQ5DL and Patient Satisfaction on a Five Point Likert scale were obtained. Patients who had both an ACDF and a Foraminotomy were excluded. Axial MRI images were analysed and the location of the worst clinically relevant disc herniation stratified as follows: Central (1), Paracentral (2) and Foraminal (3). Correlations and average PROMs were analysed in SPSS.

Biography

Dr. Ezaldeen has been practicing in Trauma and Orthopaedics for the past two years, during which time he has provided ward cover, attended the fracture clinic, and participated in theatre. With a strong commitment to improving patient health and well-being, Dr. Ezaldeen has led several projects addressing issues related to patient safety. Over the past two years, it was observed that patients who sustained fragility fractures often did not receive appropriate osteoporosis assessments. As a result, Dr. Ezaldeen initiated this audit to highlight a critical issue impacting patient health. The findings have underscored the importance of adhering to national guidelines, and Dr. Ezaldeen intends to conduct a second cycle to assess the effectiveness of the interventions implemented.



Ezaldeen Abu Shareah^{1*}, Mr. James Metcalfe²

¹Core Surgical Trainee (CT1), Derriford Hospital

²Trauma and Orthopedic Consultant, Derriford Hospital

Bone health check in patients attended fracture clinic with fragility fractures audit

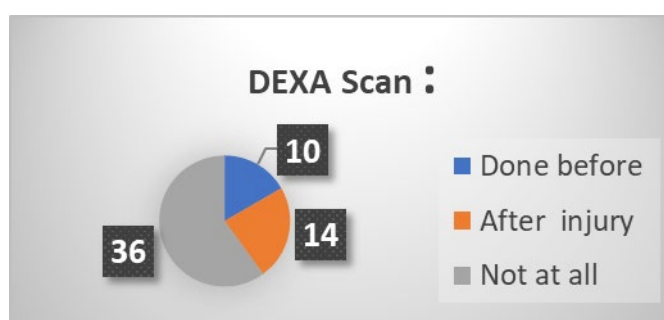
Statement of the Problem: The clinical significance of osteoporotic fractures is underscored by the fact that, in adults, approximately one in two women and one in five men will experience one or more fragility fractures. In the United Kingdom, an estimated 549,000 new fragility fractures occur annually. These fractures are associated with severe pain, disability, and a significant decline in quality of life. Furthermore, the financial burden of fragility fractures on the National Health Service (NHS) exceeds £4.7 billion each year.

The purpose of this study is to assess adherence to the National Osteoporosis Guidelines Group (NOGG) and the British Orthopaedic Association Standards for Trauma (BOAST) in evaluating patients' bone health following the occurrence of a fragility fracture.

Methodology: We reviewed fracture clinic letters and electronic systems to determine whether patients who attended the fracture clinic with a fragility fracture underwent an osteoporosis assessment or a bone health evaluation following the incident.

Findings: Out of 56 patients, only 14 (25%) underwent DEXA scans following the injury. Of these, 6 patients (42%) were diagnosed with osteoporosis, 5 patients had osteopenia, and 3 patients exhibited normal scan results. Additionally, only 7 patients (17%) had a bone profile check after the injury. We observed that some patients sustained consecutive fragility fractures before being investigated for osteoporosis.

Conclusion: All patients admitted having sustained a fragility fracture should have a bone health review, be investigated and prescribed appropriate medication when indicated.



Biography

Dr. Ezaldeen has been practicing in Trauma and Orthopaedics for the past two years, during which time he has provided ward cover, attended the fracture clinic, and participated in theatre. With a strong commitment to improving patient health and well-being, Dr. Ezaldeen has led several projects addressing issues related to patient safety. Over the past two years, it was observed that patients who sustained fragility fractures often did not receive appropriate osteoporosis assessments. As a result, Dr. Ezaldeen initiated this audit to highlight a critical issue impacting patient health. The findings have underscored the importance of adhering to national guidelines, and Dr. Ezaldeen intends to conduct a second cycle to assess the effectiveness of the interventions implemented.



F Abdullah*, S Gokhale, C Carpenter

Trauma and Orthopaedics, University Hospital of Wales, Cardiff, United Kingdom

Bilateral tibial tuberosity avulsion fractures in an adolescent rugby player

Introduction: Tibial tuberosity avulsion fractures are uncommon injuries, accounting for less than 1% of all paediatric fractures. Bilateral occurrences are exceedingly rare, with limited cases documented in the literature. We present the case of a 15-year-old male rugby player who sustained simultaneous bilateral tibial tuberosity fractures following a tackle during play.

Method: The patient, otherwise healthy with Osgood–Schlatter disease, presented after being tackled in a rugby match. Physical examination revealed bilateral knee effusions, tenderness over the tibial tuberosities, and loss of extensor mechanism. Radiographs confirmed bilateral tibial tuberosity fractures. In A&E, both knees were reduced to an acceptable position due to skin compromise. The injuries were classified as Ogden type IIIB.

Surgery was performed the next day using midline incisions over each tibial tuberosity. Intra-operative findings included soft tissue stripping, retinacular disruption, distal periosteal avulsion, and haematoma formation bilaterally. The anterior horns of the medial menisci were visualised, intact and stable, with no significant chondral steps post-fixation.

ORIF were achieved using 4.5 mm lag screws and 4 mm cannulated screws under image intensifier guidance. Stable fixation and satisfactory reduction were confirmed intra-operatively.

Results: Post-operatively, the patient was immobilised in bilateral knee splints in full extension for four weeks. Follow-up reviews showed healed wounds with no infection. X-rays showed acceptable alignment and no loss of fixation. At four weeks, knee braces were adjusted to allow gradual range of motion: 0–30 degrees on the right and 0–20 degrees on the left due to ongoing lateral knee discomfort. A structured physiotherapy programme was initiated, increasing flexion in subsequent weeks.

Conclusion: This case illustrates the rare occurrence of simultaneous bilateral tibial tuberosity avulsion fractures in an adolescent, managed successfully with single-setting bilateral fixation. It also highlights the need for coordinated post-operative care and structured rehabilitation pathway to optimise recovery in complex bilateral injuries.

Biography

Faliq Abdullah is currently a Clinical Teaching Fellow at the University Hospital of Wales, primarily based at Noah's Ark Children's Hospital. He also holds an honorary lecturer post at Cardiff University. He became an affiliated member of the Royal College of Surgeons of Glasgow in 2023 and completed a PGCert in Clinical Education at Keele University in 2025. He has a strong interest in paediatric orthopaedics and is due to commence as a Specialty Registrar in Trauma & Orthopaedics at North Cumbria Integrated Care NHS Foundation Trust.



F Abdullah*, D P Thomas

Trauma and Orthopaedics, University Hospital of Wales, Cardiff, United Kingdom

Nine years too late? A rare case of very late diagnosed bilateral developmental dysplasia of the hip

Introduction: Developmental Dysplasia of the Hip (DDH) is typically diagnosed in infancy, with late presentations being uncommon in a healthcare system with routine neonatal screening. This report presents the case of a 9-year-old girl with previously undiagnosed bilateral DDH, first identified when she presented with acute left knee pain. The patient was a first-born child, born at 42 weeks, with no perinatal complications or developmental delays. She walked at 14 months, met all developmental milestones, and was an active swimmer. Her parents had only noticed subtle signs, such as circumduction of the leg when stepping onto a high surface and reluctance to be carried in a piggyback position.

Method: The patient initially presented to a district general hospital with atraumatic left knee pain. Pelvic radiographs unexpectedly revealed bilateral dislocated hips, prompting referral to a tertiary children's hospital for further assessment. Clinical examination at the children's hospital revealed tenderness over the medial aspect of the left knee. She held her left leg in a FABER position, and tenderness was elicited in both groins on palpation. An elective Examination Under Anaesthesia (EUA) and left hip arthrogram were planned and performed.

Results: Intraoperative findings demonstrated slight shortening of the left leg and an external rotation deformity. Assessment of range of movement showed bilateral hip flexion of 120°, internal rotation of 90°, and abduction of 20°; external rotation was 90° on the right and 80° on the left. An anterolateral arthrogram using Omnipaque confirmed the femoral head was intracapsular. Subsequently, 40 mg of Kenalog and local anaesthetic were administered. Postoperatively, the patient was monitored and discharged with a plan for reassessment in two weeks. Radiographs confirmed longstanding bilateral hip dislocations with dysplastic acetabulae.

Conclusion: This case highlights the importance of considering hip pathology as a differential diagnosis in paediatric knee pain, especially in older children where signs may be subtle. Late-diagnosed DDH remains a significant clinical challenge and is often associated with the need for complex surgical reconstruction. Early diagnosis and timely intervention are essential to improve long-term functional outcomes.

Biography

Faliq Abdullah is currently a Clinical Teaching Fellow at the University Hospital of Wales, primarily based at Noah's Ark Children's Hospital. He also holds an honorary lecturer post at Cardiff University. He became an affiliated member of the Royal College of Surgeons of Glasgow in 2023 and completed a PGCert in Clinical Education at Keele University in 2025. He has a strong interest in paediatric orthopaedics and is due to commence as a Specialty Registrar in Trauma & Orthopaedics at North Cumbria Integrated Care NHS Foundation Trust.



Fathima Insaaf Zahir Ahamed^{1*}, Wichat Srikusalanukul¹, Alexander Fisher¹⁻³

¹Department of Geriatric Medicine, The Canberra Hospital, Canberra 2605, Australia

²Orthopaedic Surgery, The Canberra Hospital, Canberra 2605, Australia

³The Canberra Hospital, Canberra Health services, Canberra 2605, Australia and Australian National University Medical School, Canberra 2601, Australia

Perioperative low eosinophil count as a predictor of poor outcomes in patients with a hip fracture

Background: There is growing interest in the role of eosinophils in pathogenesis and for prognostication outcomes in various diseases. Our aim was to investigate the prognostic significance of Eosinophil Count (EC) in patients with an osteoporotic Hip Fracture (HF).

Methods: We analysed in 1273 consecutive patients with HF (mean age 82.9 ± 8.7 [SD] years, 73.5% women) prospectively recorded data on sociodemographic, laboratory and comorbid characteristics, complications, and in-hospital outcomes.

Results: Preoperatively, patients with the lowest EC quartile ($\leq 0.01 \times 10^9/L$) compared to those with the highest EC quartile ($0.11 \times 10^9/L$) had a 3.6-fold higher risk of hospital death (OR 3.6, 95 % CI 1.43-9.05, $p=0.007$); this characteristic identified 33% of all fatal outcomes (21 of 61 patients). Postoperatively, lowest EC quartile was associated with a 5.5- fold higher risk of death (OR 5.5, 95% CI 1.89- 16.04, $p=0.001$), a 1.5- fold higher risk of developing postoperative myocardial injury (OR 1.15, 95%CI 1.01-2.09, $p=0.013$) and a 1.8-fold increased risk of prolonged length of hospital stay (≥ 20 days, OR 1.8, 95% CI 1.25-2.65, $p=0.002$); low EC identified these outcomes in 47.0% (24/51), 31.0% (162/523), and 34.7% (96/277) of patients, respectively.

Low EC (pre- and postoperatively) correlated significantly with 7 routine predictive indicators of adverse HF outcomes, including lymphocyte count $< 1.2 \times 10^9/L$, neutrophil count $> 7.5 \times 10^9/L$, neutrophil/lymphocyte ratio > 7.5 , platelet/lymphocyte ratio > 280 , Lymphocyte /monocyte ratio < 1.1 , Neutrophil/albumin ratio > 2.4 and Neutrophil/monocyte ratio > 12.14 (all with $p < 0.001$); it appears that these prognostic markers are superfluous in subjects with low EC.

Conclusion: In HF patients, low perioperative EC can serve as an independent predictor of poor outcomes including myocardial injury, length of hospital stay and in-hospital death.

Biography

Dr. Fathima Insaaf Zahir Ahamed is a Geriatric medicine Advanced trainee at Canberra Health services in Canberra, Australia. She is currently in her 2nd year of Advanced training.



N. Gutteck, D. Shukla, F. Werneburg*

Department of Orthopedic and Trauma Surgery, University Hospital Halle, Martin Luther University Halle- Wittenberg, Halle (Saale), Germany

MIS TN arthrodesis: Technique and results

Objective: The primary objective of minimally invasive talonavicular arthrodesis is to achieve realignment and biomechanical stabilization of the hind foot through targeted fusion of the talonavicular joint.

Indications: This procedure is indicated in cases of idiopathic or posttraumatic talonavicular joint arthritis, with or without associated malalignment. It may also serve as part of a multi-level hind foot reconstruction.

Contraindications: Contraindications include general medical inoperability and local infection at the surgical site. Relative contraindications may include severe peripheral vascular insufficiency or systemic conditions impairing wound or bone healing.

Surgical Technique: Talonavicular fusion is performed via a minimally invasive, percutaneous approach using cannulated compression screws.

Postoperative Management: Postoperative care included six weeks of mobilization in a below-knee walker with foot contact but without active loading. After radiological assessment at six weeks, a gradual transition to full weight-bearing in a stable shoe with a rigid sole was initiated. Physical therapy supported the restoration of mobility and gait function. Thromboprophylaxis was maintained until full mobilization.

Results: In this retrospective analysis, 31 patients (32 feet) met the inclusion criteria and were evaluated. Of these, 18 underwent isolated talonavicular arthrodesis, 6 received an additional calcaneal osteotomy, and 8 underwent combined talonavicular and subtalar arthrodesis. The mean clinical follow-up was 131 days (± 89.9). Substantial functional improvement was observed across the cohort. The mean AOFAS hind foot score increased from 54.5 ± 17.4 preoperatively to 90.3 ± 9.6 at final follow-up, a change that was statistically significant ($p < 0.0001$) and associated with a very large effect size (Cohen's $d = 2.71$). Stratified analysis revealed that patients with lower baseline scores demonstrated greater relative improvement, while those with higher initial scores still achieved excellent absolute outcomes. Radiographic assessment demonstrated a marked postoperative correction of the tarso-metatarsal angle, with the mean

dorsoplantar angle improving from -4.6° (± 11.8) to -0.03° (± 1.5 ; $p=0.072$), and the lateral angle from -3.8° (± 11.8) to -0.4° (± 2.4 ; $p=0.113$). Although both changes narrowly missed statistical significance, they reflect a consistent and clinically relevant restoration of medial column alignment. Importantly, no postoperative complications - such as pseudarthrosis, wound healing disturbances, implant-related symptoms, or neurovascular impairment - were observed during the follow-up period, underscoring the procedural safety and reproducibility of the technique.

Keywords: Arthritis, Minimally Invasive Surgery, Flatfoot, Hind Foot, Lower Ankle Joint

Biography

Dr. Felix Werneburg is a physician and clinical researcher in orthopedics based in Germany. He studied medicine at the Martin-Luther-Universität Halle-Wittenberg and specialized in orthopedic surgery. His academic interests include musculoskeletal oncology, foot and ankle surgery, and orthopedic infections. His research focuses on translating scientific findings into evidence-based strategies to improve patient care.



Frederick H. Silver

Department of Pathology and Laboratory Medicine, RWJMS, Rutgers, the State University of New Jersey, USA

OptoVibronex, LLC, Ben Franklin Tech Ventures, Bethlehem, PA, USA

Use of vibrational optical coherence tomography to noninvasively evaluate the properties of tissues

Fibrosis is associated with 45% of all deaths in developed countries and with changes in physical properties of many soft tissues associated with injury and diseases. My lab has developed a new instrument, the vibrational OptoScope, to image and measure the mechanical properties of injured and diseased tissues. This noninvasive method uses a combination of Optical Coherence Tomography (OCT), UltraSound (US), and vibrational measurements. Infrared light reflections from the skin surface are used to create color-coded images. Application of acoustic vibrations ranging from 30 to 1000 Hz from a speaker placed on the skin are used to create skin deformation. The skin movement resulting from these vibrations is used to generate tissue physical data. The resonant frequency and elastic moduli of cellular and macromolecular components of tissues are determined using this approach. For deeper tissues, US is used to locate the anatomical structure of interest below the skin surface. Once area of skin is determined directly above the tissue of interest, the US probe is removed, and the OCT handpiece is placed at that location on the skin surface. The sound is reflected from the subsurface tissues causing movement of the skin due to movement of tissues as deep as muscle and bone. The characteristic resonant frequency of each tissue is a mechanovibrational fingerprint of that anatomical structure. Resonant frequencies vary from about 50 Hz (skin epithelial cells) to 1000 Hz (bone). Changes in the resonant frequency of each tissue occur because of changes associated with aging, diseases, and fibrosis. The purpose of this talk is to present images and mechanovibrational data on skin, tendon, muscle, cartilage, nerve, and bone detailing how changes in these structures can be measured using the Vibrational OptoScope.

Biography

Dr. Silver is a Professor of Pathology and Laboratory Medicine at Robert Wood Johnson Medical School, Rutgers, the State University of New Jersey. He did his Ph.D. in Polymer Science and Engineering at M.I.T. with Dr. Ioannis Yannas, the inventor of the Integra artificial skin, followed by a postdoctoral fellowship in Developmental Medicine at Mass General Hospital in Boston, MA with Dr. Robert L. Trelstad, a connective tissue pathologist. Dr. Silver invented a new technique termed Vibrational Optical Coherence Tomography (VOCT). US and European patents have been granted on VOCT to Rutgers on vibrational evaluation of materials and tissues.



García Ruiz Michelle Guadalupe^{1*}, Coronado Zarco Roberto¹, Olascoaga Gómez de León Andrea¹, De la Torre Larios Marco Antonio¹, Cariño Escobar Rubén Issac² Aguirre Meneses Heriberto³

¹Department of Physical Medicine and Rehabilitation, National Rehabilitation Institute, Mexico City, Mexico

²Department of Neurosciences, National Rehabilitation Institute, Mexico City, Mexico

³Department of Medical Systems, National Rehabilitation Institute, Mexico City, Mexico

Ultrasound quadriceps depth and sit-to-stand power as biomarkers of muscle function and quality

Introduction: The evaluation of muscle function and quality is complex, and its difficult in the implementation in clinical practice. Grip strength has been used as a proxy for the ability to generate body force, but there is controversy about this. Isokinetic assessment integrates characteristics of strength, power and muscle work during concentric and eccentric activities, and its implementation in clinical practice is not feasible. Muscle ultrasound has been proposed to be integrated into the evaluation of muscle quality, and recording quadriceps depth can provide clinically relevant information to be integrated into muscle assessment.

Purpose: To propose the IMQ-Sit to stand power/quadriceps depth as a clinical parameter to assess muscle function and quality.

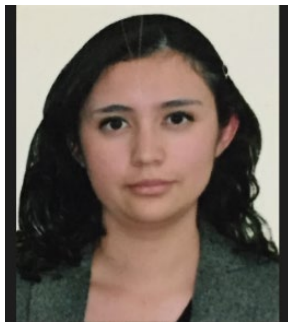
Methods: Descriptive, cross-sectional and analytical study. People over 18 years were included, self-referred to as healthy, after signing an informed consent form, eliminating subjects who did not complete the evaluations. Variables studied: grip strength, densitometry, isokinesis, ultrasound, sit to stand, sit to stand power, and the muscle quality index for StS/PQ power were calculated.

Results: 26 subjects (18 women) were included, with an average age of 48.5 years (SD=22.6; range 18 to 79). The PQ observed a strong correlation (from 0.699 to 0.869, with $p<0.05$) with variables of grip strength and isokinesis (strength, power and work) at low and high speed, as well as with variables of arm, leg and appendicular lean mass obtaining strong correlations (from .746 to .861, $p<0.05$) and with moderate functional variables for Sit to Stand 5 ($r=-0.559$; $p<0.05$), Sit to Stand 10 ($r=-0.589$; $p<0.005$) and Sit to Stand 30 sec ($r=0.512$; $p<0.05$). The StS power observed a moderate to strong correlation with the strength parameters of the grip and isokinetic (from $r=0.695$ to $r=0.831$; $p<0.05$), as well as strong for the functional tests StS 5 ($r=-0.859$; $p<0.05$), StS 10 ($r=-0.874$; $p<0.05$), StS 30 sec ($r=0.866$; $p<0.05$). The IMQ was calculated considering sit to stand power and PQ (IMQ-PStS/PQ), observing moderate correlation with the tests StS5 ($r=-0.601$, $p<0.05$), 10 ($r=-0.570$; $p<0.05$) and 30s ($r=0.646$; $p<0.05$).

Conclusions: The IMQ-PotStS/PQ can be a useful indicator to evaluate functional performance, highlighting the importance of associating strength and isokinetic evaluations together with StS power, with evaluations of physical and functional performance, representing a feasible option for implementation in daily clinical practice.

Biography

Dra Michelle Garcia studied Medicine at UNAM University. She works in the Department of Physical Medicine and Rehabilitation at National Rehabilitation Institute. She is interested in the line of sports medicine and dance medicine.



García Ruiz Michelle Guadalupe*, Coronado Zarco Roberto

Department of Physical Medicine and Rehabilitation, National Rehabilitation Institute, Mexico City, Mexico

Determination of morphological and functional muscle quality in an open population over 65 years

Introduction: Muscle quality refers to the union of the structural and functional characteristics of the muscle. It is made up of various factors such as strength, power, resistance and flexibility. Muscular quality is divided into two domains: a functional and morphological domain.

Purpose: To know the association between the evaluation of morphological and functional muscle quality, with functionality, and muscle performance in adults over 65 years.

Methods: Descriptive, cross-sectional and analytical study. People over 65 years of age were studied, who agreed to participate after signing informed consent. For statistical analyses, measures of central tendency, dispersion and correlations (Pearson) were used. Gait speed, sit to stand, grip strength, densitometry, isokinesia and ultrasound were analyzed.

Results: 34 people were included, 27 women (80%) and 7 men (20%), average age of 70.52 years. 23.5% of the studied population presented sarcopenia. When comparing the averages of the muscle quality index in the healthy group and those with sarcopenia, a significant difference was observed between both. Regarding the maximum right force, a significant difference is also observed with a large effect size. Some isokinesia and ultrasound variables have moderate but statistically significant correlations.

Conclusions: When applying the cut-off points for muscle quality, we observed that it could represent a tool for identifying patients with sarcopenia, By finding significant differences between the groups for texture analysis, we interpret that this difference for force generation is related to changes in muscle morphology. Measurements of muscle quality, grip strength and texture analysis emerge as useful tools for functional muscle evaluation. More research is required to identify the most significant determinants for evaluation and simplify it.

Biography

Dra Michelle Garcia studied Medicine at UNAM University and graduated as MD in 2016. She works in the Department of Physical Medicine and Rehabilitation at National Rehabilitation Institute. She is interested in the line of sports medicine and dance medicine.



Dr. Gaurav Verma^{1*}, Dr. Shrinivas Vishnu Yadkikar²

¹Department of Orthopaedics, JNUIMSRC, Jaipur, Rajasthan, India

²Department of Orthopaedics, Professor and Head of Unit, JNUIMSRC, Jaipur, Rajasthan, India

Reconstructing the ischaemic forearm: Synergistic role of Ilizarov Technique (IT) and soft tissue procedures in Volkmann contracture

Volkmann Ischemic Contracture (VIC) is a disabling complication of acute compartment syndrome, typically following forearm trauma in pediatric and young adult populations. It results from prolonged ischemia of the deep flexor compartment, leading to muscle necrosis, fibrosis, and progressive contracture deformities of the wrist, fingers, and thumb. VIC is classified based on the Tsuge classification into mild, moderate, and severe types. Mild cases exhibit minor flexion deformities with preserved motor function; moderate cases involve moderate contractures and some motor impairment; severe VIC presents with extensive muscle necrosis, clawing, and functional paralysis.

The primary objective in treating mild to moderate VIC is to restore functional alignment and muscle- tendon balance. This abstract presents a reconstructive approach that integrates targeted soft tissue release procedures with Ilizarov external fixation to achieve effective deformity correction and functional rehabilitation.

Soft tissue procedures include selective muscle slide techniques, such as the flexor-pronator origin slide, which facilitates lengthening of fibrotic muscle bellies, and fractional tendon lengthening or Z-plasty of the flexor digitorum profundus, flexor digitorum superficialis, and flexor pollicis longus. These methods reduce contractile tension, allowing gradual passive correction of the wrist and finger deformities without compromising residual motor power. In moderate cases with median or ulnar nerve involvement, neurolysis or tendon transfers may be adjunctively performed.

Following soft tissue balancing, a circular Ilizarov ring fixator was applied. Gradual distraction was initiated at a controlled rate of 0.25 mm four times per day (1 mm/day total), targeting correction of wrist flexion and finger clawing over several weeks. This method leverages the Ilizarov principles of distraction histogenesis, allowing adaptive remodeling of neurovascular and soft tissue structures. Importantly, the device permitted concurrent physiotherapy within the frame, facilitating early mobilization and promoting active engagement of residual motor units.

Rehabilitation included guided physical therapy, occupational therapy for hand function retraining, and staged removal of the fixator after radiologic and clinical confirmation of alignment correction. Functional outcomes were assessed using standardized tools such as the Disabilities of the Arm, Shoulder and Hand (DASH) score, muscle strength grading, and range of motion metrics.

In our observational cohort of patients with traumatic mild to moderate VIC, this combined approach yielded substantial improvements in deformity correction, hand prehension, and independence in daily activities. Complication rates were low, with no instances of neurovascular compromise or recurrence of contracture at 6 month follow-up.

In conclusion, the integration of soft tissue release procedures with the Ilizarov technique offers a comprehensive, stepwise solution for managing mild to moderate Volkmann ischemic contracture. It effectively addresses both the static deformity and dynamic functional limitations of the forearm and hand. This multidisciplinary reconstructive strategy results in a well-aligned, functional limb and represents a promising approach in the surgical armamentarium for post-traumatic VIC.

Biography

Dr. Gaurav Verma completed his MBBS from Bharti Vidyapeeth Medical College, Pune, in 2018. He completed his MS in Orthopaedic Surgery at JNUIMSRC, Jaipur, under the supervision of Dr. Shrinivas V. Yadkikar, Professor and Head of the Ilizarov Unit. His research interests focus on limb reconstruction and external fixation techniques. He has several research articles under review for publication in peer-reviewed journals.



Hasibullah Habibi* MD, PhD; Hiromitsu Toyoda MD, PhD; Hidetomi Terai MD, PhD; Kentaro Yamada MD, PhD; Masatoshi Hoshino MD, PhD; Akinobu Suzuki MD, PhD; Shinji Takahashi MD, PhD; Koji Tamai MD, PhD; Hamidullah Salimi MD; Yusuke Hori MD, PhD; Akito Yabu MD; Hiroaki Nakamura MD, PhD

Osaka Metropolitan University, Orthopedic/Spine Surgery Department, Osaka, Japan

Incidence of postoperative progressive segment degeneration at decompression and adjacent segments after minimally invasive lumbar decompression surgery: A 5-year follow-up study

Background: Adjacent Segment Degeneration (ASD) has been reported previously well after the fusion surgeries however ASD after the microendoscopic and microscopic surgeries has not been reported.

Objective: There are several reported studies on the incidence of Adjacent Segment Disease (ASD) after lumbar fusion surgery; however, the incidence of ASD after decompression surgery has not been well studied. In this study the authors aimed to investigate the incidence of Progressive Segment Degeneration (PSD) at the decompression and adjacent segments 5 years after minimally invasive lumbar decompression surgery.

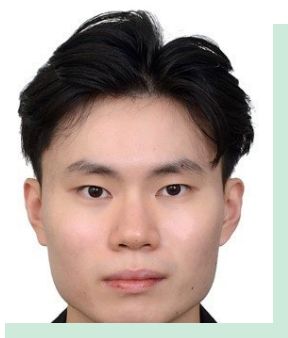
Methods: We investigated data from 168 patients (mean age, 69.5 ± 9.2 years) who underwent bilateral microscopic or microendoscopic decompression surgery via a unilateral approach and were followed up for more than 5 years. Outcomes were self-reported Visual Analog Scale (VAS) scores for low-back pain, leg pain, and leg numbness and physician- assessed Japanese Orthopaedic Association (JOA) scores for back pain. Changes in the disc height and movement of the adjacent lumbar segments were compared using preoperative and 5-year postoperative lateral fulllength standing whole-spine radiographic images. PSD was defined as loss of disc height >3 mm and progression of anterior or posterior slippage >3 mm. The incidence and clinical impact of PSD were investigated.

Results: The mean JOA score improved significantly in all patients from 13.4 points before surgery to 24.1 points at the latest follow-up (mean recovery rate 67.8%). PSD at the decompression site was observed in 43.5% (73/168) of the patients. The proportions of patients with loss of disc height >3 mm and slippage progression were 16.1% (27/168) and 36.9%, respectively (62/168: 41 anterior and 21 posterior). The proportion of patients with PSD at the adjacent segment was 20.5% (35/168), with 5.4% (9/168) of the patients with loss of disc height >3 mm and 16.0% (27/168: 13 anterior and 14 posterior) with slippage progression. There was no significant difference in the clinical outcomes between patients with and those without PSD.

Conclusions: Radiological ASD was observed even in the case of decompression surgery alone. However, there was no correlation with symptom deterioration, measured by the VAS and JOA scores.

Biography

Dr. Hasibullah Habibi graduated from Nangarhar Medical University in 2010 Afghanistan and obtained a specialty degree in 4 years 2015 in Orthopedics and Traumatology in Wazir Akbar Khan Hospital Kabul Afghanistan. Obtained PhD degree for 4 and half years in 2021 in Osaka City University Osaka Japan under the supervision of Prof Hiroki Nakamura and Prof Hidetomi Terai in the Orthopedic/Spine Surgery department. He Started Postdoc researchers until now published 19 research articles and more than 270 citations in just 5 years. Also, he is under the super specialty training program of Orthopedic and Spine Surgery run by the protocol of the Japan Health Ministry currently in Shimada Hospital Osaka Japan. He obtained many awards and certifications for his outstanding research work.



Jeremy Lee Jun Shern*, James Paxton, Jing Yee Ong, Himanshu Shekhar

Department of Trauma and Orthopaedics, Ninewells Hospital, NHS Tayside, United Kingdom

Improving documentation of post-operative review via a proforma in trauma and orthopaedics: A 2-cycle audit

Background: The post-operative review is important in orthopaedics patients to assess neurovascular status for early detection of neurovascular deficits. It is also an opportunity to ensure that Low-Molecular Weight Heparin (LMWH) and antibiotics are prescribed, if indicated. In our local health board, a proforma is available to guide junior doctors towards clear and accurate documentation of the post-operative review.

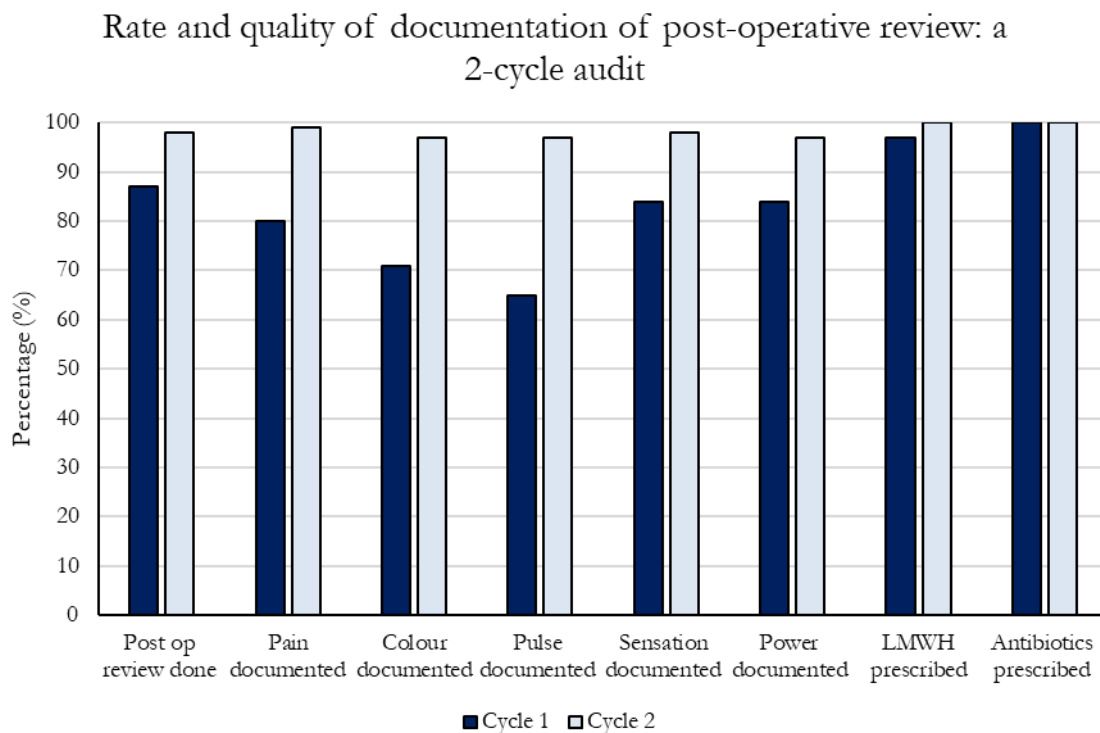
Aim: To improve the rate and quality of documentation of post-operative review in orthopaedics patients using a proforma.

Methods: In the first cycle, all patients admitted under trauma and orthopaedics who had surgery in January 2025 were included. Electronic patient records were reviewed. Completion of the post-operative review proforma, which includes a neurovascular status examination and checking if LMWH and antibiotics are prescribed, was reviewed. Interventions were implemented in the form of departmental teaching and an educational poster circulated via email and within the orthopaedics wards. The second cycle was re-audited in May 2025.

Results: In the first cycle, 183 patient notes were reviewed where 160 (87%) post-operative review proformas were completed. The rate of documentation of neurovascular status were: pain level (128, 80%), colour (114, 71%), pulse (104, 65%), sensation (135, 84%), power 135 (84%). DVT prophylaxis was indicated in 120 (75%) of patients where 116 (97%) were prescribed LMWH. In the second cycle, after implementation of the interventions, 148 notes were reviewed where 145 (98%) proformas were completed. Documentation of neurovascular status also improved significantly: pain level (144, 99%), colour (140, 97%), pulse (141, 97%), sensation (142, 98%), power (141, 97%). DVT prophylaxis was indicated in 120 patients where all patients (100%) had LMWH prescribed. In both cycles, 100% of patients received prophylactic antibiotics when indicated.

Conclusion: The post-operative review is important to ensure early detection of neurovascular deficits post-intervention and ensure prophylactic LMWH and antibiotics are prescribed appropriately. Several challenges were identified, including high patient turnover, increased

workload and omission of patients during handovers. Effective communication between junior doctors is key in ensuring post-operative reviews are done and clearly documented for patient safety and better outcomes.



Biography

Dr. Jeremy Lee Jun Shern studied at the University of Dundee, United Kingdom and graduated in MBChB in 2024. He also holds an intercalated BSc with Honours in Applied Orthopaedics Technology in 2022. He is currently a Foundation Year 1 doctor working in Ninewells Hospital, Dundee, United Kingdom.



Johan MD

Doctor-Link International, Singapore

Genetic engineering of VHH-with-multiple-paratopes (Single domain with multidomain antibody megabody) Targeting Multiple (TM) cytokines in the osteoarthritis joints as a potential of DMOAD

VHH is a single-domain antibody that can bind to the epitope(s) of its target antigen(s) in a very efficient way due to its tiny size. Osteoarthritis is a chronic, debilitating disease affecting hundreds of millions of people around the globe. There are no disease-modifying drugs or treatments available, except for knee arthroplasty. We conducted in vitro, in vivo, and animal studies on using multidomain single-domain antibodies (or we called it a megabodyTM) that targeted TNF-Alpha, IL-6, IL-1beta, NGF, MMP-13, ADAMST-4 and IKK- Alpha-Beta-forming a hepta-tropes as a potential DMOAD. To enhance the duration of the megabodyTM in the intraarticular, we engage a nanoparticle consist of PLGA (Poly-lacto- Glycolic-acid) with 75:25 percentage w/w, respectively.

Biography

Dr. Johan graduated from Universitas Sriwijaya, medical school in 1998, and after his internship (housemanship) in 2000, he worked in a rural area for one year and was posted in the Army General Hospital as a medical officer thereafter, before getting his specialist training in the National University of Singapore. He completed his Master of Medicine and Master of Surgery in 2009, and continued his general surgical training in Singapore and passed his MRCP(UK) exam and MRCS exam. He obtained his fellowship in orthopedics and trauma (FRCS) in Glasgow in 2014. Besides his busy clinic schedule, he immersed himself in the research work that has been published in multiple journals. He has been granted multiple patents by Intellectual Property of Singapore (IPOS) for his enormous works in cellular and biologic therapy and he is still pursuing his passion in both clinical practice and research to this day.



Johan, MD

Doctor-Link International, Singapore

Combination of static bike, TENS and unloader knee brace in alleviating knee pain, delay knee arthroplasty and improve activity daily living in knee OA patients

Osteoarthritis is a chronic, debilitating disease affecting hundreds of millions of people around the globe. There are no disease-modifying drugs nor permanent treatment available except for knee arthroplasty. Combination of physical therapy, neuromuscular modulator, and unloader knee brace to alleviate pain and improve activity daily living for knee osteoarthritis. Among plethora of physical therapy modalities, static cycling has demonstrated its superiority to strengthen muscles and improve pain compared to other physical therapy modalities. Transcutaneous Electrical Nerve Stimulation has been proven in multiple RCT to be able to reduce WOMAC score in knee OA patients. During non-training session, patients has been advised to wear unloader knee brace to balance the load among three knee's compartment, femoral condyles, tibia plateau and patella.

Biography

Dr. Johan graduated from Universitas Sriwijaya, medical school in 1998. After his internship (housemanship) in 2000, he worked in a rural area for one year. He was posted in the Army General Hospital as a medical officer thereafter, before getting his specialist training in the National University of Singapore. He completed his Master of Medicine and Master of Surgery in 2009, and continued his general surgical training in Singapore and passed his MRCP(UK) exam and MRCS exam. He obtained his fellowship in Trauma and Orthopaedics (FRCS)(TR&Orth) in Glasgow in 2014. Besides his busy clinic schedule, he immersed himself in the research work that has been published in multiple journals. He has been granted multiple patents by Intellectual Property of Singapore (IPOS) for his enormous works in cellular and biologic therapy and he is still pursuing his passion in both clinical practice and research to this day.



Jonathan Courtney MD

Vice-Chief Orthopaedic Surgery, Boca Raton Regional Hospital, Boca Raton, FL
USA

Short-term clinical outcomes on a new dual-taper wedge femoral stem in total hip replacement

The use of dual-tapered stems in total hip arthroplasty is not a new concept, and its popularity in the direct-anterior total hip approach has increased. This study is a follow-up to a one that was presented last year, and analyzed the early clinical and radiological results of the Everglade stem (Signature Orthopedics NSW, Australia). A total of 100 patients (41 men and 59 women) were retrospectively studied and received 100 stems. The mean patient age was 68 years (interquartile range 62-76 years) at the time of surgery. The median follow-up was 317 days (up from 161.5 days) (interquartile range 169-408 days). The HOOS-Jr score improved from a mean 57.07 pre-operatively to a mean 86.03 at the 6-week visit and to 94.3 (up from 92.7) at the latest follow-up. At the one-year X-ray assessment, we observed no incidence of stem subsidence, peri-prosthetic fracture, or radiolucencies. There were no cases of osteolysis and no stems were revised. According to our results, this short, dual-tapered stem continues to show good short-term outcomes. Prospective studies with longer follow-up are needed to fully assess the long-term survivorship of this stem.

Biography

Dr. Courtney is a board-certified orthopedic surgeon specializing in adult reconstruction. After completing his fellowship at the Insall Scott Kelly Institute, he practiced academic medicine at Montefiore Medical Center in New York City. In 2016, he moved to Florida, where he has been in private practice. Dr. Courtney currently serves as Vice-Chief of Orthopedic Surgery at Boca Raton Regional Hospital, Clinical Affiliate Assistant Professor of Surgery at Florida Atlantic University, and partner in Orthopedic Surgery Associates. He is also a founding partner of the South Florida Joint Replacement Center as well as the medical director of Concierge Home Health.



Davis¹, Tuyet Thao Nguyen¹, Bingjie Wang², Haddy Alas, Quincy Jones, Chase Clark¹, Sabrina Lazar³, Shaddy Malik¹, Joshua Graham^{4*}, Yasmeen Talat¹, Chris Shin, Clifford Pereira, Jonathon Schofield, Wilsaan Joiner, Ravi Sood, Diana Farmer, Lor Randall, Aijun Wang, Dake Hao, Diana Farmer, Spencer Greene, Danielle Brown, Rachel Russo, Toran Macleod, Laduan Smedley, Kingsley Manoharan, Andrew Simpkins, and Andrew Li¹

¹University of California Davis, School of Medicine; 4610 X St, Sacramento, CA, United States

²Department of Biomedical Engineering, Columbia University; 351 Engineering Terrace, Mail Code 8904, 1210 Amsterdam Avenue, New York, NY 10027, United States

³Albany Medical College; 43 New Scotland Ave, Albany, NY 12208, United States

⁴Royal College of Surgeons in Ireland, School of Medicine; 123 St Stephen's Green, Dublin 2, Ireland

Prosthetic embodiment in lower limb loss

Prosthesis embodiment refers to the integration of a prosthetic device into an individual's sense of self, extending beyond its function as an assistive tool. While extensively studied in upper limb prosthetics, embodiment in lower limb prostheses remains less explored. This poster examines the concept of prosthesis embodiment in individuals with lower extremity limb loss, including the psychological and physiological factors that contribute to increased embodiment. We will review current methodologies used to assess embodiment in lower limb prostheses and discuss the impact of sensory feedback, mobility, and user experience on improving prosthetic integration and functional outcomes. Additionally, we will explore advancements in neuroprosthetic interfaces, including TIME (Transverse Intrafascicular Multichannel Electrode) and C-FINE (Composite Flat Interface Nerve Electrode) nerve interfaces, and rehabilitation strategies that enhance sensory perception, proprioception, and user confidence. We outline how these approaches contribute to improved proprioception, reduced phantom limb pain, and a decreased perceived prosthesis weight, leading to greater mobility and patient satisfaction. A better understanding of these factors can inform future prosthetic design, guide clinical practice, and shape rehabilitation protocols, ultimately improving patient care and quality of life for individuals with lower limb amputations.

Biography

Josh graduated from Penn State University and is currently a graduate medical student at the Royal College of Surgeons in Ireland (RCSI). His research focuses on neuroprosthetics and patient rehabilitation, emphasizing return to function and quality of life. He is affiliated with RCSI and actively contributes to research in these areas. He is particularly interested in the integration of technology in rehabilitation medicine and its impact on patient outcomes.



Juan Carlos Perez Moreno

Movement Gait Laboratory, Telethon/Gustavo Baz 219, Tlalnepantla, Estado de México, México

Motion analysis technology in children with disabilities

Motion analysis is a method that uses image-based motion capture techniques to record and analyze the movement of human body segments. Our laboratory utilizes an optoelectronic system with cameras equipped with illuminators and CCD sensors for infrared radiation, along with passive reflective markers placed on anatomical landmarks. The reflection of these markers provides the three-dimensional coordinates of each point. We can synchronize acquisitions with kinematic, kinetic, and electromyography data. The gait laboratory is used for studying human walking, quantifying the effects of pharmacological or rehabilitative therapies, orthopedic surgeries, and sports training programs.

Cerebral palsy is the leading cause of disability in childhood and the most studied condition using gait analysis. Other common pathologies at our center include Duchenne muscular dystrophy, spinal cord injuries, and children at high neurological risk. However, instrumenting infants under the age of 2 with this technology is very complex. We have developed protocols for assessing walking in these infants, as well as for studying upper limb movement and crawling.

More recent tools, such as wireless inertial systems, have allowed us to perform gait assessments without overloading the patient with markers, using only a sensor placed on the waist, although this reduces the amount of data collected.

Finally, Markerless Motion Capture (MMC) is a technique for capturing human motion from video footage without the need for markers, suits, or other wearable devices. Its use in clinical and sports settings has grown, though further studies are still needed.

This presentation focuses on sharing our experience in the clinical application of movement analysis for children with disabilities and the use of new technological tools in both movement analysis and clinical practice.

Biography

Dr. Juan Carlos Perez Moreno is a specialist in physical medicine and rehabilitation at the hospital infantil de México Federico Gómez (1993). He completed his master's degree in science from the Instituto Politécnico Nacional, 2003. Training in gait analysis at the politecnico di milano, Italy, 2007. He is member of the Research Committee at Teletón Estado de México. He certified by the Mexican council of rehabilitation medicine (1994-2024). Electrodiagnostic specialist at the hospital infantil de México Federico Gómez (1994-2004) and the Hospital Pediátrico Legaria (1993-2024). Specialist in gait laboratory analysis at teletón, estado de México (2007-2024). He is author and co-author of national and international publications, and research project advisor at the specialty level.



K. Greenaway*, I. Skinner, M. Skein, M. Sheldrake

Charles Sturt University, Port Macquarie, Australia, Study Made Simple, Brisbane, Australia

From chronic low back pain to vitality and joy: A qualitative study of people's experiences with Esoteric Connective Tissue Therapy (ECTT)

Background and Aims: Chronic Low Back Pain (LBP) is strongly correlated with increased levels of disability, absence from work and associated psychosocial problems.

Research has shown evidence of abnormal thickening of the Connective Tissue (CT) of the Thoracolumbar Fascia (TLF) of people with chronic LBP, suggesting targeting of the CT may be an appropriate treatment focus.

Esoteric Connective Tissue Therapy (ECTT) is a treatment approach that targets the CT. The aim of this study is to explore the treatment effects of ECTT on people who experience chronic low back pain including psychosocial changes.

Methods: Qualitative study involving adult participants living with chronic LBP who have received ECTT. Participants completed a 1-hour online, semistructured interview.

Results: Nine participants have been interviewed. Preliminary thematic analysis indicates: ECTT is a gentle whole body therapy with reported positive treatment outcomes affecting both the physical and emotional impacts of chronic LBP.

Participants reported decreased pain levels with increased flexibility in the entire body and a return to daily activities which maintained well beyond the treatment.

ECTT was reported to support increased vitality and joy in life, with participants saying they felt lighter in themselves and more connected to their body.

Conclusions: Preliminary results indicate that patients have positive physical and psychosocial changes and further research to determine the clinical effectiveness of ECTT may be justified to decrease the burden of chronic LBP. Full results will be presented at the conference.

Biography

Kate graduated in the Bachelor of Applied Science(Physiotherapy), Sydney University 1984. She gained generalist experience in musculoskeletal disorders in teaching hospitals and private sports clinics in Sydney. She advanced to treating chronic complex pain disorders particularly the pelvis/sacrum and spine. Kate furthered her work in the early 90's in Boston USA studying the connective tissue in its denatured state in chronic musculoskeletal disorders. From 1999 in NSW Australia she worked with complementary health practitioners advancing gentle connective tissue therapy. This led to her present work in clinics in Brisbane and her post graduate Master of Philosophy in researching ECTT and its effects on chronic low back pain.



Konstantin Mitev

Zan Mitrev Clinic, Macedonia, The Former Yugoslav Republic of

Core decompression of the femoral head for treating a bone marrow lesion with Intraosseous Bioplasty® (IOBP®) technique – Case report

5 3 year female patient with avascular necrosis of right hip complaint of pain and limited hip joint function. After the clinical evaluation and imaging technique minimal invasive surgical operation was indicated. We made hip core decompression with intraosseous bioplasty technique–Arthrex which is a surgical procedure used to treat osteonecrosis, or Avascular Necrosis (AVN) of the hip. We did drilling one larger hole into the dead bone of the femoral head (top of thigh bone) in order to relieve pressure in the bone. Intra Osseous BioPlasty technique utilizes a core decompression with direct application stem cells–PRP concentrate from bone marrow aspirate using Arthrex Angel System in order to stimulate healing. We used Bone Marrow Aspirate Stem Cell Concentrate (BMAC) which is a component of her bone marrow that contains growth factors and anti-inflammatory proteins which have been shown to promote bone and soft tissue healing as well as reduce symptoms of pain related to injuries, tendinitis and arthritis.

Follow up 3,6 months postoperatively–The IntraOsseous BioPlasty (IOBP®)/effectively alleviate pain, improve joint function and delay development of osteonecrosis of femoral head.

Biography

Konstantin Mitev is an associate professor of surgery/traumatology at the Faculty of Medicine at Goche Delchev University, Shtip. In 2016 became subspecialist -Trauma Surgeon, 2014 became MD, PHD of medical science, 2011. The preparation of the doctoral thesis is accepted, in the field of arthroscopic treatment of the articular cartilage of the knee and 2010. Master thesis defense and obtained master's degree of medical sciences 2009. Completed postgraduate studies in Traumatology. 2001-2005 Specialization in general surgery 1998.

Work Experience: Present Trauma surgeon–work at the department of Orthopedics and Traumatology, in Zan Mitrev Clinic–Skopje, Republic of North Macedonia. 2021 he has elected as an Associated Professor of Medical Faculty at UGD Stip. 2015 Elected as Ass. Professor at Medical faculty UGD-Stip. 2012 Head of department of Orthopaedics and Traumatology at Special Hospital–Filip Vtori. 2010 Assistant in surgery at the medical faculty, Univeristy Ss. Cyril and Methodius, Skopje. 1998-2001 City Surgical Clinic St. Naum Ohridski–Skopje. 1997-1998 Health Clinic–Zdravstven dom, Skopje

Experience: 20 years orthopedic trauma surgery, night duties, emergency interventions, repositions, external fixator, thoracocentesis, punctio, cast immobilisations, sports trauma and pediatric fractures.

Annually: 150 arthroscopic procedures (knee, ankle, shoulder, elbow, cartilage repair), 120 fracture osteosynthesis (upper and lower extremity, pelvis), 10 pediatric fracture, 300 intraarticular application of PRP or ACP and over 2500 medical exams and consultation.

Additional Education: In 2016 advanced course in shoulder arthroscopy-Frankfurt, Germany. 2015 One month professional stay in Clinic for sports traumatology in Uhingen, Germany. 2012 Fellowship at Orthopedic and Traumatology Clinic 'Acromion-Croatia. 2009 One month professional stay in Clinic for sports traumatology in Uhingen, Germany. 2005 advanced course in arthroscopy in Varna, R. Bulgaria. Advanced course and workshop on arthroscopy, Otocec, R. Slovenia. 2002 One month professional stay at the Clinic for traumatology in the Clinic Center-Ljubljana Advanced course about osteosynthesis, held in Bled, R. Slovenia, under the auspices of AO/ASIF 2001.

Course about sports injuries, organized under the auspices of the International Olympic Committee, Skopje, March. 1999 Basic course about Osteosynthesis of proximal femur and tibia organized by the European association for Orthopedics and Traumatology held in Skopje, October. 1998 One month he stay in St. Akershus in Oslo, Norway.

Memberships: He is a member of the Macedonian Association – MADOT, the German Association of Arthroscopy – AGA, and the World International Association of Arthroscopy – ISAKOS. He is the President of the Trauma Forum in MADOT and an active member of the Research Committee in the National Foundation for Transplantation of R. Macedonia.



Konstantin Mitev

Zan Mitrev Clinic, Macedonia, The Former Yugoslav Republic of

Auto cart in the knee cartilage repair

Background: Knee cartilage defects cause significant pain and disability leading to progressive degenerative changes if not treated. Arthroscopic treatment with minced cartilage (AutoCart) has emerged as promising alternative to traditional surgical methods.

Case Presentation: A 55-year-old male patient presented with a history of progressive knee pain and problems with weight bearing activities. Articular cartilage was harvested from the edge of the osteochondral defect with the shaver. The mixed cartilage with prp in trombinator was applied to the defect and covered with fibrin glue.

Outcome: Postoperative after six-month follow-up showed significant improvement of pain and joint function.

Conclusion: Dilemmas for the best method for knee articular cartilage repair is still controversial but minced cartilage tretatment is promising option.

Keywords: Articular Cartilage Defect, Minced Cartilage, Autocart.

Biography

Konstantin Mitev is an associate professor of surgery/traumatology at the Faculty of Medicine at Goche Delchev University, Shtip. In 2016 became subspecialist -Trauma Surgeon, 2014 became MD, PHD of medical science, 2011. The preparation of the doctoral thesis is accepted, in the field of arthroscopic treatment of the articular cartilage of the knee and 2010. Master thesis defense and obtained master's degree of medical sciences 2009. Completed postgraduate studies in Traumatology. 2001-2005 Specialization in general surgery 1998.

Work Experience: Present Trauma surgeon–work at the department of Orthopedics and Traumatology, in Zan Mitrev Clinic–Skopje, Republic of North Macedonia. 2021 he has elected as an Associated Professor of Medical Faculty at UGD Stip. 2015 Elected as Ass. Professor at Medical faculty UGD-Stip. 2012 Head of department of Orthopaedics and Traumatology at Special Hospital–Filip Vtori. 2010 Assistant in surgery at the medical faculty, Univeristy Ss. Cyril and Methodius, Skopje. 1998-2001 City Surgical Clinic St. Naum Ohridski–Skopje.1997-1998 Health Clinic–Zdravstven dom, Skopje

Experience: 20 years orthopedic trauma surgery, night duties, emergency interventions, repositions, external fixator, thoracocentesis, punctio, cast immobilisations, sports trauma and pediatric fractures.

Annually: 150 arthroscopic procedures (knee, ankle, shoulder, elbow, cartilage repair), 120 fracture osteosynthesis (upper and lower extremity, pelvis), 10 pediatric fracture, 300 intraarticular application of PRP or ACP and over 2500 medical exams and consultation.

Additional Education: In 2016 advanced course in shoulder arthroscopy -Frankfurt, Germany. 2015 One month professional stay in Clinic for sports traumatology in Uhingen, Germany. 2012 Fellowship at Orthopedic and Traumatology Clinic 'Acromion -Croatia. 2009 One month professional stay in Clinic for sports traumatology in Uhingen, Germany. 2005 advanced course in arthroscopy in Varna, R. Bulgaria. Advanced course and workshop on arthroscopy, Otocec, R. Slovenia. 2002 One month professional stay at the Clinic for traumatology in the Clinic Center-Ljubljana Advanced course about osteosynthesis, held in Bled, R. Slovenia, under the auspices of AO/ASIF 2001.

Course about sports injuries, organized under the auspices of the International Olympic Committee, Skopje, March. 1999 Basic course about Osteosynthesis of proximal femur and tibia organized by the European association for Orthopedics and Traumatology held in Skopje, October. 1998 One month he stay in St. Akershus in Oslo, Norway.

Memberships:

- Macedonian association–Madot
- German association of arthroscopy–AGA
- World International Association of Arthroscopy–ISAKOS
- President of the trauma forum in MADOT
- Active member in the research committee in the National foundation for transplantation of R. Macedonia.



Dr Labadi Saber

Private Orthopedic Surgeon, Algeria

Retrospective study of 50 cases of Sprengel deformity operated according to modified Woodward

Sprengel Deformity (SD) is a rare congenital anomaly defined by a failure of scapular descent. The objective of this study is to share our surgical experience, using a modified Woodward technique according to the author, in terms of technique, results, and complications.

Studies: We present a series of 50 cases operated on between 2017 and 2024.

The average age at surgery (mean age: 50 months, range: 2 years to 21, 5 males and 55 females) was included, and only cases >Cavendish 2 were operated on. 12 right shoulders versus 47 left, and bilateral, with only one case. The average follow-up was 33 months. The reason for the consultations was more aesthetic than functional; only two patients experienced limitations in abduction and external rotation.

Conclusion: According to the author, the modified Woodward technique improved the lives of the majority of patients. Only two cases required revision surgery for shoulder re-elevating. Neurological problems that resolved spontaneously were noted in three cases. The remaining patients were satisfied with the results, both aesthetically and functionally.

Biography

Dr. Labadi Saber is a Private Orthopedic Surgeon in Algiers and also a Algeria Member of SACOT, founding member of AOCAS. He Graduated from the Faculty of Medicine of Algiers in 2017 Former specialist practitioner at the EPH Oued Souf, and Former head of the orthopedics department at the El Kfaa Clinic, OEB, Algeria.



L. Patrick*, S. Sadiq, N. Campbell, H. Johnstone, O. Thompson, H. Walton, C. McColm

Private Orthopedic Surgeon, Algeria

Improving the management of first-time and recurrent lateral patellar dislocations in acute orthopaedic care: A clinical audit against BOAST and ESSKA Gguidelines

Background: Lateral patellar dislocation, particularly first-time events (FTPD), can result in recurrent instability, chronic pain, and reduced function if not managed according to established standards. This audit evaluated current practice within NHS Greater Glasgow and Clyde against updated BOAST and ESSKA guidelines.

Methods: A retrospective audit was conducted of all patients coded with patellar dislocation between 1st February 2025 and 10th June 2025. Inclusion was limited to first-time lateral dislocations (n=32). Standards were based on BOAST and ESSKA recommendations covering: imaging, immobilisation, weightbearing advice, MRI access, and follow-up timing. A second cycle comparing recurrent dislocation management was also performed, referencing 2024 audit data.

Results: Immobilisation: 100% (32/32) received splint, brace, or crutches.

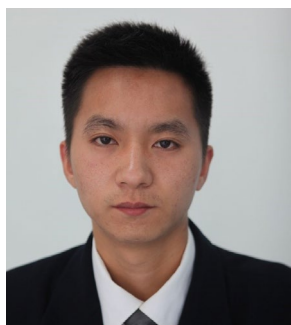
- **X-ray Imaging:** 100% received AP/lateral views; 0% received Skyline (Merchant) view.
- **MRI:** 44% received no MRI; only 9% within 2 weeks.
- **Weightbearing Advice:** Only 3% (1/32) had documented advice on discharge.
- **Follow-up:** 69% were seen in Virtual Fracture Clinic (VFC) within 72 hours.

In the recurrent cohort (n=13), only 1 patient received full imaging views; MRI access and follow-up were also below guideline expectations.

Conclusions & Recommendations: Key gaps identified include inconsistent MRI access, omission of skyline views, poor documentation of weightbearing status, and delays in VFC review. Recommendations include:

- Protocolising radiology requests with mandatory skyline views
- Streamlining MRI referral pathways
- Introducing ED discharge proformas
- Reviewing VFC triage processes

A re-audit is planned following implementation of these interventions.



Li Shenghua^{1,2*}, Luo Hao^{1,2}, Wang Song³, Zou Zhonghui³, Chen Xiaohua^{1,2}

¹Department of Trauma Center, Chongqing University Three Gorges Hospital, Wanzhou, Chongqing, China

²Department of Orthopaedic Center, Chongqing University Three Gorges Hospital, Wanzhou, Chongqing, China

³Department of Vascular surgery, Chongqing University Three Gorges Hospital, Wanzhou, Chongqing, China

One-stage hybrid surgery for limb closed fracture concomitant with major vascular injury

Objective: The standardized management of limb closed fracture concomitant with major vascular injury has long presented a significant clinical challenge. Traditional approaches generally entail sequential fracture reduction and fixation, followed by open vascular repair. Unfortunately, patients frequently experience prolonged delays due to the preparation required for fracture reduction, fixation, and anesthesia, which can result in missing the critical window for vascular recanalization. To address this issue, we have introduced a hybrid surgery that integrates one-stage endovascular strategy with internal fracture fixation, achieving clinically significant and favorable outcomes.

Methods: A retrospective comparative analysis of 24 patients with limb closed fractures concomitant with major vascular injuries admitted to our medical center from July 2018 to June 2024 was conducted. Among these patients, 9 cases were treated with one-stage DSA-guided endovascular covered stent implantation combined with internal or external fracture fixation (hybrid group). The remaining 15 patients were treated with fracture reduction, internal or external fixation, and vascular repair or grafting using autologous saphenous vein (traditional group). Interval time from emergency room admission to vascular recanalization, operation time, intraoperative blood loss, limb salvage success rate, Fugl-Meyer scores were compared between the two groups. Additionally, complications such as re-occlusion, rebleeding, and infection were evaluated.

Results: There were no significant differences in age, gender, and preoperative ischemic time between the two groups. The interval from emergency to vascular recanalization was 73.2 ± 16.4 minutes in the hybrid group compared to 101.6 ± 27.8 minutes in the traditional group ($p < 0.001$). The operation time was 68.9 ± 27.2 minutes in the hybrid group versus 95.1 ± 33.0 minutes in the traditional group ($p < 0.001$). Intraoperative blood loss was 53.2 ± 13.5 mL in the hybrid group compared to 160.8 ± 57.9 mL in the traditional group ($p < 0.001$). The limb salvage success rate was 100% in both groups. However, the Fugl-Meyer score was significantly higher in the hybrid group (94.6 ± 3.8) than in the traditional group (85.4 ± 9.0) ($p = 0.018$). Additionally, the incidence of complications was lower in the hybrid group (11.1%) compared to the traditional group (20.0%) ($p = 0.020$).

Conclusions: One-stage hybrid surgery combining vascular and orthopedic interventions is appropriate for the management of closed fractures with associated major vascular injuries. This approach offers several advantages, including minimal surgical trauma, reduced vascular recanalization time, enhanced safety, and superior functional recovery.

Keywords: Closed Limb Fracture, Closed Limb Vascular Injury, Endovascular Surgery, Internal Fixation.

Biography

Dr. Li Shenghua studied Clinical medicine at Chongqing Medical University, Chongqing, China and graduated as MS in 2014. He then pursued PhD degree in 2020 at the same university. He joined the Trauma Center and Orthopaedic Center of Chongqing University Three Gorges Hospital, Wanzhou, Chongqing, China in 2014. He has published 4 research articles in SCI journals and presided over 3 research projects.



Ms. Lisa Kells*, Mr. A Ismaeel

Orthopaedic Department, Shrewsbury and Telford Hospital Trust (Telford site),
Telford, UK

The missing link in hip fracture timelines: Impact of full admission work-up on time to theatre

Standard & Rationale: NICE guidelines recommend that patients with a fractured neck of femur undergo operative management within 36 hours of admission. Similarly, BOAST guidance for trauma in elderly patients emphasizes that surgery should enable full weight bearing for activities of daily living within the same time frame. In smaller District General Hospitals (DGHs) with high volumes of elderly trauma, achieving these targets on a single trauma list can be challenging. Where resource limitations preclude the introduction of a second, dedicated neck of femur trauma list, it is essential to identify modifiable factors contributing to delays. This audit explores whether delays in completing pre-operative investigations at admission impact time to surgery.

Method: Over a 3-week period, all patients admitted with a fractured neck of femur were audited. The following parameters were recorded:

1. Time to surgery
2. Time to first venepuncture
3. Time to complete a full set of admission investigations (ECG, chest X-ray, full blood count, renal profile, clotting profile, and two group and save samples).

Patients were grouped based on whether surgery was performed within 36 hours, and their investigation timelines were compared.

Results: 57% of patients underwent surgery within 36 hours. In this group, 100% had all admission investigations completed in the emergency department. 43% of patients breached the 36-hour target. None of these had full investigation completion in the emergency department; only partial investigations were performed. There was no significant difference in time to surgery when comparing the time of first venepuncture alone.

Conclusion: Timely completion of all admission investigations, rather than the timing of the first test, is crucial. In a DGH setting, ensuring full pre-operative work-up is completed promptly—ideally within the emergency department—is a key factor in reducing time to theatre. This approach can support achieving weight-bearing surgical management within 36 hours of admission. The introduction of a suspected neck of femur flowchart-checklist was introduced at the DGH to help improve timely completion of pre-operative investigations in this patient cohort.

Biography

Dr. Lisa Kells studied medicine at the University of Liverpool, with an intercalation in BSc Anatomy, graduating in 2020. She completed her foundation training at Aintree University Hospital and successfully entered Core Surgical training in the West Midlands after. Most recently she has commenced a PG Cert in Medical Education to help further her goals of teaching and her aspirations for orthopaedic training.



Macy Leung M.S*, Lam T.H.

Rehabilitation Services and Social Enterprise Division, The Salvation Army, Hong Kong, China

Enhancing well-being and self-directed engagement through therapeutic environmental design for ageing individuals with intellectual disability – A pilot study

Introduction: As individuals with Intellectual Disabilities (ID) age, they often face declines in physical, cognitive, and sensory abilities, undermining independence and quality of life. Therapeutic environmental design offers a promising approach to mitigate these challenges by creating supportive, engaging spaces. This study provides preliminary insights into how such design enhancements can promote self-directed engagement and well-being among ageing ID populations within a single residential home.

Design Description: This project implements a person-centered therapeutic environmental design to create an engaging living space for residents with moderate ID. Drawing on Montessori and reminiscence therapy principles, it fosters self-directed engagement, multisensory stimulation, and nostalgic familiarity. Two corridors—Montessori Street and Reminiscence Street address physical, cognitive, and psychological needs while enhancing emotional well-being. Features include autonomy-promoting tools (e.g., accessible activity stations), multisensory elements (e.g., tactile panels, calming sounds, colour-coded pathways), motor skill-focused activities (e.g., interactive panels), and nostalgia cues (e.g., historical photos, rotary phones), tailored to encourage exploration and emotional well-being in ageing ID individuals.

Methods: This mixed-methods post-intervention evaluation was conducted in a residential home for ageing individuals with intellectual disabilities. A purposive sample of 62 residents and 31 staff participated. Qualitative data were collected through observations and semi-structured interviews to explore emotional well-being and behavioural changes. Quantitative data were collected using a survey to assess the perceived impact of the therapeutic environmental design across four domains: participation, freedom of choice, satisfaction and preference. Thematic analysis and descriptive statistics evaluated the design's effects.

Results & Discussion: Quantitative findings from 62 residents demonstrated moderate-to-high perceived benefits across all domains including self-initiated exploration, ability to select preferred activities, liking for the design, and overall satisfaction. Staff responses (n=31) indicated higher ratings, particularly for exploration and satisfaction.

Qualitative feedback highlighted that users particularly appreciated the nostalgic elements (e.g., historical photos, rotary phones), which evoked memories of their past experiences, and found the designed activities, such as fruit-themed sorting tasks, to be enjoyable and engaging. Staff reported increased smiles, happiness and eagerness to share life stories. The rise in engagement underscored the design's positive influence on well-being. Though user satisfaction varies, reflecting individual needs and preferences, this model shows promise for residential care, with potential refinements to reduce staff reliance and broaden applicability.

Conclusion: The therapeutic environmental design enhances autonomy and well-being in ageing ID populations, offering a promising care model, with longitudinal evaluation is needed to confirm sustained benefits.

Biography

Ms. Leung graduated with a BSc in Occupational Therapy and obtained a master's degree in counseling. She has 28 years of extensive experience spanning pediatrics, adult care, and geriatrics across hospital, private, and NGO sectors. Currently, she serves as a Senior Occupational Therapist in Rehabilitation Services at The Salvation Army. She is responsible for planning and promoting innovative clinical techniques, driving service development and enhancing care delivery to meet evolving community needs. She also has a keen interest in conducting studies to evaluate service quality and ensuring continuous improvement in therapeutic offerings.



Mahmoud Elmesalmi

St George's Hospital, United Kingdom

Comparison of intra-articular haematoma block and procedural sedation for the manipulation of closed ankle fracture dislocations: A cross-sectional study

Background: Ankle fracture dislocations are commonly reduced in the emergency setting under Procedural Sedation (PS), which requires trained clinicians and monitoring. This study aimed to evaluate the patient-reported efficacy of Intra-Articular Haematoma Block (IAHB) as an analgesic alternative to PS for the closed reduction of ankle fracture dislocations.

Methods: Data from patients with displaced ankle fractures requiring manipulation between October 2020 and April 2021 were analysed. Patients who received IAHB were compared to those who received PS. IAHB involved the injection of 10 mL of 1% lignocaine into the joint space.

Results: Twenty-eight patients received PS, and 25 received IAHB. There were no statistically significant differences in Visual Analogue Scale (VAS) scores before, during, or after treatment ($p > 0.05$). First-attempt reductions were successful in 76% of IAHB patients compared to 82.1% of PS patients. IAHB was associated with lower medication costs and a shorter time to manipulation.

Conclusion: IAHB is a cost-effective and safe alternative to PS for managing ankle fracture dislocations.

**Mahmoud Elmesalmi**

St George's Hospital, United Kingdom

Do routine postoperative radiographs influence the management of distal radius fractures following volar locking plate fixation?

Background: Distal Radius Fractures (DRFs) are a common orthopaedic injury, often requiring surgical intervention. Routine postoperative radiographs are frequently obtained after surgical fixation to ensure adequacy of fixation and rule out early complications, yet their necessity remains unclear. Through this study, we tried to evaluate the impact of routine postoperative radiographs on the management of DRFs. The objective was to determine whether routine postoperative radiographs are necessary for the effective management of patients following surgical fixation of DRFs using volar locking plates.

Methods: A review of 176 patients who underwent distal radius open reduction and internal fixation with volar locking plates at a UK district general hospital was conducted over a period of two years. Data on patient demographics, fracture characteristics, postoperative imaging new findings, and management changes were collected and analysed. The primary outcome measure was the rate of reoperation based on new findings in the routine postoperative radiographs.

Results: Routine postoperative radiographs were obtained in all the cases, with only 1% (one patient) requiring reoperation based on the presence of new findings on the postoperative radiographs. Approximately 8% (12 patients) experienced a change in their management in the form of prolonged cast immobilization.

Conclusion: Routine postoperative radiographs for DRFs with open reduction internal fixation may have limited impact on management decisions. The study highlights the potential overutilization of postoperative radiographs, leading to increased healthcare costs and radiation exposure. Based on the study's findings, a case-by-case approach, considering fracture type, associated injuries, and clinical indications, is advocated. Reducing the use of routine radiographs could save resources and reduce unnecessary radiation exposure without compromising patient care.

Mansha Bhiryani^{1*}, Lucy Cooper²

¹Countess of Chester Hospital

²Orthopaedic Surgery, Liverpool University Hospitals Foundation Trust

Adherence to guidelines and patient factors in diabetic foot disease

Background: Foot ulceration is a common complication of diabetes, due to loss of protective sensation related to peripheral neuropathy. The clinical course can be compounded by peripheral vascular disease and inadequate footcare.

Good patient outcomes are reliant on optimising glucose control and prompt management of early ulceration. Approximately 180 diabetes related amputations are performed weekly in the UK, many are preventable.

Aim: To evaluate compliance with NICE guidelines regarding routine monitoring of diabetes and risk factors for complications, together with subsequent management of ulceration.

Methods: A two-cycle audit and retrospective data analysis was performed on patients admitted with diabetic foot complications at our Trust in 2023-2025. Patients were identified from the foot team database and data collected utilising e-notes.

Results: Final data analysis completed for 111 feet of 100 patients in the first cycle and 50 feet of 48 patient in the second cycle. 94% of patients had evidence end organ disease including 84% with documented peripheral neuropathy in cycle 1.

Severe ulceration was defined as SINBAD score >2. Only 1.8% of 111 feet and 6% of 50 feet had SINBAD score documented at presentation. From descriptive terms, it was possible to retrospectively calculate SINBAD score for the remainder; 90% of 111 feet and 72% of 50 feet had a SINBAD score >2. In the second cycle, there was a noticeable improvement in how ulcers were described and documented, with 58% being well-documented.

Contrary to NICE guidelines, 48% of patients had HbA1c tested at greater than three-month intervals in cycle 1 and 53% in cycle 2.

Conclusion: While adherence to HbA1c measurement guidelines remains suboptimal, there has been a marked improvement in ulcer documentation following increased awareness of SINBAD, allowing for consistency in ulcer description and management.

Biography

Dr. Bhiryani studied at the University of Liverpool and graduated in 2024. She is now a foundation doctor at the Countess of Chester Hospital.

Mansha Bhiryani^{1*}, Katie Maxwell², Amanda V Sardeli³, George Ampat^{2,4}

¹Countess of Chester Hospital

²University of Liverpool

³Department of Inflammation and Ageing, University of Birmingham

⁴Orthopaedic Surgery, Liverpool University Hospitals Foundation Trust

Reliability of bridge tests in adults: A systematic review and meta-analysis

Objectives: To assess the reliability of the prone (PBT) and Side Bridge Test (SBT) and their suitability for being included in the routine medical spine examination.

Methods: PubMed (MEDLINE), EMBASE and EBSCOhost (CINHAL) were searched. Studies assessing intra-rater and inter-rater reliability of the PBT and SBT via intra-class correlation coefficient (ICC), in adults with and without LBP were included. QAREL (Quality Appraisal for Reliability Studies) checklist was used for risk of bias assessment. Meta-analyses were performed to pool summarized ICCs and its 95% Confidence Interval (CI) for each test. PROSPERO registration: CRD42024489351.

Results: Thirteen studies were included, these showed adequate sample and rater representativeness but unclear blinding methods. The overall pooled intra-rater ICC for the PBT, right and left SBT was 0.92 (CI=0.89, 0.93, k=9, p<0.001, I²=12%), 0.82 (CI= 0.75, 0.88, k=9, p<0.001, I²=40%) and 0.89 (CI=0.82, 0.93, p<0.001, k=8, I²=52%), respectively. The few studies reporting inter-rater ICC for PBT, right SBT and left SBT, led to significant ICCs ≥0.82. Furthermore, the duration of right SBT was significantly (P<0.001) lower for LBP (43 seconds [24;61], k=2) compared to non-LBP (81 seconds [74;99], k=10).

Conclusion: PBT and SBT are both reliable endurance tests for adults. Given the low costs and easy application by any healthcare professional, future studies should focus on the implementation of BT in the medical spine examination.

Biography

Dr. Bhiryani studied at the University of Liverpool and graduated in 2024. She is now a foundation doctor at the Countess of Chester Hospital.



Massimo Piracci

Medcare Orthopedic and Spine Hospital, Dubai, United Arab Emirates

Strategies to prevent sport injuries: a structured approach

Introduction: The LARS, or Ligament Augmentation and Reconstruction System, is designed to replicate the mechanical and anatomical properties of natural ligaments. The LARS synthetic ligament is made of 100% industrial strength polyester fibers. Each LARS contains a specific number and length of fibers, depending on their intended use. The active intra-articular portion of the LARS is made of longitudinal fibers, called free fibers without transversal fibers. The fibers are oriented according to the ligament they are made for, to mimic the anatomic fibers. This patented structure allows a high resistance to fatigue especially to flexion, torsion stresses and while observing a minimum residual elongation of the ligament. This porous and flexible structure allows colonization of the tissue. LARS in 5 points:

- Rapid return to sporting activities
- Minimal invasive surgery, mainly by arthroscopy
- No long period of immobilization required
- Full range of motion after 3 weeks
- No muscular atrophy

LARS is suitable for: The Upper Extremities: Rotator Cuff tears, acromioclavicular, joint dislocation, distal biceps tears and others. The lower extremities: Anterior and posterior cruciate ligaments reconstruction (intra articular), posterolateral corner, quadriceps tears, patellar tendon tears and achilles tendon repairs (extra articular) and others. The LARS synthetic ligament can be used as an augmentation device in conjunction with autograft or allograft in acute or chronic injuries.

Objectives: This hybrid technique has revolutionized the use of synthetic ligaments in all types of reconstruction indications. The combination of biological and synthetic implants will create a homogenous fusion, thus creating a new hybrid approach. Combining biologic tissues and a synthetic implant to provide a fusion between both elements. A hybrid application will provide strength (early recovery with no elongation) and durability (extended life time). In acute (≥ 3 weeks) cases, the LARS ligament will work as an augmentation device combined with stump of the ACL. In chronic or revision cases, the LARS ligament is combined with a graft as an augmentation device intended for stress shielding. The postoperative care varies according to

the technique used and the joint being repaired such as knee, shoulder, ankle. Generally, these indications apply: The LARS ligament enables you to start physiotherapy the next day after surgery so there will be no limitations, rapid full range of motion, less muscle atrophy, quicker return to sports and no brace is necessary.

Methods: Many publications through the years have demonstrated the use of LARS ligaments to have it's advantages versus conventional techniques. In a meta analysis study Jian Sun & all reserched in PubMed, Cochrane Library, and EMBASE for published Randomized Controlled Trials (RCT) and Case Controlled Trials (CCTs) to compare the outcomes of the autografts versus synthetics after cruciate ligament reconstruction. Nine studies were identified from the literature review. Of these studies, three studies compared the results of Bone–Patellar Tendon–Bone (BPTB) and Ligament Augmentation and Reconstruction System (LARS), while six studies compared the results of Four-Strand Hamstring Tendon Graft (4SHG) and LARS.

Result & Discussion: The comparative study showed no difference in Lysholm score and failure risk between autografts and synthetics. The combined results of the meta-analysis indicated that there was a significantly lower rate of side-to-side in the synthetics group than in the autografts group. This systematic review comparing long-term outcomes after cruciate ligament reconstruction with either autograft or synthetics suggests no significant differences in failure risk. Autografts were inferior to synthetics with respect to restoring knee joint stability and patient-reported outcome scores, and were also associated with more postoperative complications.

Conclusion: In conclusion, the combination of synthetic and biological ligaments, you benefit from the best of both worlds.

Biography

Massimo Piracci completed his MBBS from Roma Tor Vergata, Italy in 1992 and subsequently received his MD in Orthopedic and Traumatology from the same University in 1999. He was trained in Orthopedic Surgery in Roma Saint Eugenio Hospital and in Latina Santa Maria Goretti Hospital. From 2003 was HOD in Orthopedic and Traumatology Department in Roma Clinic Annunziatella where he did more than 10.000 surgery. He was also Football Referee for FIGC for 15 years and also external orthopedic consultant for different football team. From 2014 in UAE. He uses the most advanced technologies and biological implant (PRP, Stamina cells, Ozone Therapy) and mini invasive surgery of hip head. He treats the most of orthopedic pathology for children and adults, the most of minor and major trauma, and sport injury with advanced mini invasive technique. For low back pain he uses the treatment with Ozone therapy that resolve the pain giving back a normal life to the patient.



Massimo Piracci

Consultant Orthopedic Surgeon Medcare Orthopedic and Spinal Hospital, Dubai,
United Arab Emirates

Artificial ligaments: Past and present

Introduction: Ozone (O_3) is an unstable allotropic form of oxygen that imparts an oxidizing activity with various biological components. It can generate its immune-modulating, anti-inflammatory, antibacterial, virucidal, fungicidal, analgesic, and other properties depending on the therapeutic dose chosen.

Objectives: Ozone therapy has various therapeutic uses including topical applications for wound healing, treatment of periodontitis, cancer, AIDS, severe acute respiratory syndrome, neurodegenerative diseases and diabetic foot.

Methods: Clinical trials using ozone therapy showed that when this therapy is used alone or in combination it is safe and effective in pain relief and function improvement. Ozone therapy is indicated in lumbar herniated disc. Lumbar herniated disc causes symptoms of sciatica and possible foot pain, numbness or weakness. Ozone is administered in the form of an oxygen-ozone gas mixture, at nontoxic concentrations varying from 1 to 40 μg of ozone per milliliter of oxygen. The optimal concentration of ozone per milliliter of oxygen for intradiscal administration is 27 μg . Several clinical studies on the efficacy of the use of O_2 - O_3 in treatment of lumbar disc herniations have been reported in the literature. Patients with neck pain and or radiculopathy corresponding to disc herniation without cervical cord compression are most suitable for ozone therapy. Ozone therapy is a minimally invasive treatment that provides antiinflammatory effects and pain relief by oxidizing proteoglycan in the nucleus pulposus leading to shrinkage of the disc which compresses the nerve roots. A powerful stimulus to the activation of antioxidant defense is the result of O_3 injected in the peridural space of the conjugation foramen and disc.

Result & Discussion: The overall procedural complications rate is estimated around 0.1%. Steppan J et al (2010) determined that the complication rate was much lower (<0.1%) and the recovery time was significantly shorter with ozone therapy. Magalhaes FN et al indicated the level of evidence in the systematic meta- analysis of therapeutic results of percutaneous injection of ozone for low back pain secondary to disc herniation for long-term pain relief was found to be II-3 for ozone therapy applied intradiscally and II-1 for ozone therapy applied paravertebrally. The grading of recommendation was 1C for intradiscal ozone therapy and 1B for paravertebral ozone therapy.

Conclusion: The literature confirms that minimally invasive therapy with oxygen-ozone is safe to use through percutaneous injections for the treatment of lumbar and cervical pain, particularly when compared to surgery and drug therapy.

O₃ therapy is becoming an effective treatment option as it promotes tissue hyper oxygenation as well as treating painful syndromes affecting muscles, tendons, and joints.

Though O₃ has indicated great success in most indications mentioned, there still needs to be further research conducted to determine its activity.

Biography

Massimo Piracci completed his MBBS from Roma Tor Vergata, Italy in 1992 and subsequently received his MD in Orthopedic and Traumatology from the same University in 1999. He was trained in Orthopedic Surgery in Roma Saint Eugenio Hospital and in Latina Santa Maria Goretti Hospital. From 2003 was HOD in Orthopedic and Traumatology Department in Roma Clinic Annunziatella where he did more than 10.000 surgery. He was also Football Referee for FIGC for 15 years and also external orthopedic consultant for different football team. From 2014 in UAE. He uses the most advanced technologies and biological implant (PRP, Stamina cells, Ozone Therapy) and mini invasive surgery of hip head. He treats the most of orthopedic pathology for children and adults, the most of minor and major trauma, and sport injury with advanced mini invasive technique. For low back pain he uses the treatment with Ozone therapy that resolve the pain giving back a normal life to the patient. He was the HOD of Orthopedic department in Czech Rehabilitation Hospital in Al Ain and HOD of Regenerative and Sport Medicine in Adam Vital Hospital in Dubai. Consultant Orthopedic Surgeon in Saudi German Hospital in Dubai. Consultant Orthopedic surgeon in Emirates Hospital Group, he is Consultant Orthopedic surgeon, Regenerative Medicine and Sport Medicine in Medcare Orthopedic Spinal Hospital Dubai. Speaker well known in many Nation and International Conference and publishing.



Matthew Farrugia^{1*}, Joseph Hanna², Neville Mamoowala², David Hawkes², Alan Highcock²

¹Trauma and Orthopaedic Department, Leighton Hospital, Crewe, UK

²Trauma and Orthopaedic Department, Arrowe Park Hospital, Wirral, UK

PFNA vs TFNA osteosynthesis in neck of femur fractures: Comparison of helical blade proximal fixation failure

Background: The Trochanteric Fixation Failure-Advanced (TFNA) was introduced into Arrowe Park Hospital in 24/11/2021 following replacement of the Proximal Femoral Nail Antirotation (PFNA) system. The TFNA system was upgraded with improvements in the nail and helical blade design. The aim of our study was to assess the failure rates between helical blade fixation in PFNA and TFNA systems.

Methods: A retrospective study reviewed patients who underwent intramedullary nail fixation with PFNA and TFNA systems for intertrochanteric and subtrochanteric neck of femur fractures between January 2019-February 2024. Exclusion criteria: Tumour prophylactic fixation, pathological fracture, atypical bisphosphonate fractures, short nails, proximal femur/shaft fractures, revision surgery. The primary outcome measure was proximal fixation failure defined as non-union, implant fracture, blade cut out, blade back out, blade head penetration, severe collapse >20mm. Radiographs were reviewed by two senior orthopaedic registrars to define failure and Tip Apex Distance (TAD) was measured. Radiographs were reviewed after a minimum 6 month post-operative period. Chi-squared test performed for statistical analysis using SPSS.

Results: A total of 515 IM nail fixation were performed during study period (PFNA 279, TFNA 236). No differences in demographics were observed. The failure rate was 6.8% for PFNA and 5.5% for TFNA, no statistical difference was observed ($p=0.53$). There was no difference in TAD between groups. Most failures were observed in 31A3 and subtrochanteric fractures. Reoperation rates were highest for blade back out in the PFNA group (3/4) and blade cut out in the TFNA group (2/4).

Conclusion: Proximal fixation using helical blade in IM Nailing for neck of femur fractures is a stable construct in the upgraded TFNA system. Failure rates were found to be similar to nailing systems using lag screw fixation.

Biography

Mr. Farrugia studied for a Doctor of Medicine and Surgery, MD at the University of Malta and graduated in 2016. While completing his foundation programme in Scotland, he undertook a Masters in Surgical Sciences at the University of Edinburgh which he graduated in 2019. He was then appointed into a core surgical training programme in Liverpool during which he worked to pursue a career in Trauma and Orthopaedics. After this he was successfully appointed as a Specialty Training in Trauma and Orthopaedics and is currently completing his training in the North-West, Mersey deanery.



Matthew Farrugia^{1*}, Luke Marsh², Siva Sirikonda³, Anjani Singh³

¹Trauma and Orthopaedic Department, Leighton Hospital, Crewe, UK

²Trauma and Orthopaedic Department, Alder Hey Hospital, Liverpool, UK

³Foot and Ankle Orthopaedic Department, Liverpool University Hospital, Liverpool, UK

Are longer metatarsal lengths ubiquitous in patients with primary metatarsalgia?

Background: Metatarsalgia is a generic term used to describe localised forefoot pain around the metatarsals. Primary metatarsalgia is thought to be caused by excessive loading over one or multiple metatarsal heads resulting in inflammation and painful callosities. Maestro et al. in 2003, described an ideal foot morphotype which is currently used to plan for corrective osteotomy in patients with metatarsalgia. The aim of this study is to investigate whether there is a true difference in metatarsal lengths between symptomatic and asymptomatic individuals.

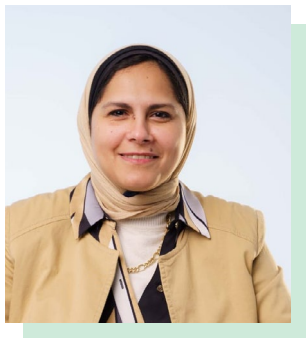
Methods: A retrospective single centre study was carried out between 2019 and 2020. Weightbearing dorsoplantar foot radiographs and patient notes were screened. Patients were grouped into two groups, Group A: Asymptomatic and Group B: Primary metatarsalgia. Exclusion criteria were set to exclude patients with previous foot surgery and secondary causes of metatarsalgia (e.g. Morton's Neuroma). Metatarsal length differences were measured according to Maestro's criteria using Carestream. Measurements were taken as: 1st metatarsal-2nd metatarsal (M1-M2), M2-M3, M3-M4 & M4-M5.

Results: There were 172 patients in Group A and 34 patients in Group B. There was no statistically significant difference across all four metatarsal length differences. This highlights that there is no true overall difference in the metatarsal arcade between the two groups. Twelve patients in group B (35%), underwent Weil's osteotomy. In this sub-group there was a significant difference in the pre-operative metatarsal length difference between M_2-M_1 only ($p=0.035$) compared to Group A. This was due to a longer 2nd metatarsal ($p=0.039$).

Conclusion/Findings: Our results highlight that primary metatarsalgia is an uncommon condition and these patients have a similar metatarsal arcade when compared to the normal asymptomatic foot. A subset of patients with primary metatarsalgia have a long 2nd metatarsal which may benefit from Weil's osteotomy correction.

Biography

Mr. Farrugia studied for a Doctor of Medicine and Surgery, MD at the University of Malta and graduated in 2016. While completing his foundation programme in Scotland, he undertook a Masters in Surgical Sciences at the University of Edinburgh which he graduated in 2019. He was then appointed into a core surgical training programme in Liverpool during which he worked to pursue a career in Trauma and Orthopaedics. After this he was successfully appointed as a Specialty Training in Trauma and Orthopaedics and is currently completing his training in the North-West, Mersey deanery.



Dr. Mervat Sheta

Lecturer of Physical Medicine and Rehabilitation, Faculty of Medicine Alexandria University, Egypt

Role of biofeedback pelvic floor training in elderly patients with obstructed defecation

Pelvic floor rehabilitation is essential to manage elderly patients with obstructed defecation. Program of biofeedback will be discussed with prerequisite, indication, and mechanism of biofeedback in these patients with usage of other physical modalities to improve emptying of large amount of stool without effort. Examples to patients from Alexandria University before and after rehabilitation will be discussed.

Biography

Dr. Mervat Sheta studied medicine at Alexandria university (1998 -2003). She graduated with excellence grade and honor in 2003 in internal medicine and surgery. She received master grade in physical medicine in 2008 at department of physical medicine and rehabilitation to work as assistant lecturer at the same department to be promoted as lecturer in 2016 after receiving PhD in the same department at faculty of medicine Alexandria university, Egypt. Her fine specialty is pelvic floor rehabilitation as topic of her Thesis in PhD and published many articles in pelvic floor rehabilitation.

Miqdad Qandeel^{1*}, Abdullah ElRefae², Mustfa Makkiyah³¹General Surgery, Northwick Park Hospital, Harrow, UK²Trauma and Orthopaedic, Northwick Park Hospital, Harrow, UK³Trauma and Orthopaedic, Hillingdon hospital, Hillingdon, UK**Psoriasis as an independent risk factor for postoperative infections and revision surgeries in joint arthroplasty: A systematic review and meta-analysis**

Psoriasis, a chronic systemic inflammatory disease, is associated with immune dysregulation and comorbidities that may increase complications following joint arthroplasty. Despite the well-documented impact of other inflammatory joint diseases, the role of psoriasis as a risk factor for postoperative infections and revision surgeries has been underexplored. The objective of this study evaluates psoriasis as an independent risk factor for postoperative infections and revision surgeries in patients undergoing joint arthroplasties, including Total Hip Arthroplasty (THA), Total Knee Arthroplasty (TKA), and Other Joint Arthroplasties (OJA).

A systematic review and meta-analysis were conducted in accordance with PRISMA guidelines. Eligible studies compared patients with psoriasis or Psoriatic Arthritis (PsA) to controls without psoriasis, focusing on infection and revision surgery rates. Data were pooled using random-effects models to calculate Risk Ratios (RR) and Odds Ratios (OR), and heterogeneity was assessed using I^2 statistics.

Ten studies involving 4,442,349 patients were included. Psoriasis significantly increased the risk of postoperative infections (RR: 2.27; 95% CI: 1.61–3.22; $p < 0.001$; OR: 1.76; 95% CI: 1.34–2.32; $p < 0.001$) and revision surgeries (RR: 1.31; 95% CI: 0.85–2.00; $p = 0.22$; OR: 1.60; 95% CI: 1.50–1.70; $p < 0.001$). Subgroup analyses showed consistent infection risks across arthroplasty types, with the highest risk observed in THA (RR: 3.07; 95% CI: 1.25–7.54; OR: 1.87; 95% CI: 0.98–3.56). Similarly, psoriasis significantly increased revision risks in TKA (OR: 1.60; 95% CI: 1.50–1.71) and OJA (OR: 1.51; 95% CI: 1.01–2.26).

Psoriasis independently elevates the risk of postoperative infections and revisions following joint arthroplasties. These findings underscore the need for tailored perioperative care, including enhanced infection prevention strategies and multidisciplinary management for patients with psoriasis undergoing joint replacement surgery. Further research should explore the mechanisms underlying these associations and optimize surgical outcomes for this patient population.

Biography

Dr. Miqdad Qandeel studied Medicine at the University of Debrecen. Following his academic training, he continued to develop his clinical and surgical expertise in the surgical field. He is currently practicing in the general surgery at Northwick Park Hospital, where he is actively involved in patient care and surgical procedures. Dr. Qandeel has a strong interest in advancing his surgical techniques and continues to contribute to the field through both clinical practice and ongoing professional development.

Mr. Mohammed Jumaah¹, Mr. Naren Garneti², Mr. Raveen Jayasuriya³, Dr. Michael Kamiza¹, Dr. Ahmed Elmadhi, Mohammed Al Kubaisi^{4*}

¹Orthopaedic SHO

²Consultant Orthopaedic Surgeon

³Orthopaedic SpR

⁴Rotherham NHS Foundation Trust, United Kingdom

Service evaluation of urgent spinal MRI requests for back pain patients in an orthopaedic department

Background and Rationale: There has been a significant rise in urgent spinal MRI scan requests for patients presenting with back pain during on-call sessions within the orthopaedic department. The increase in these requests not only burdens hospital resources but may offer limited clinical benefit. This service evaluation aims to review the departmental practices for requesting urgent spinal MRI scans and align them with national guidelines to ensure optimal care and resource utilization.

Aims and Objectives:

1. Quantify the number of urgent spinal MRI scan referrals for back pain.
2. Assess the appropriateness of these requests by comparing them to national guidelines.
3. Review MRI scan results and their clinical impact.
4. Investigate discussions with the spinal team regarding patient care.
5. Estimate the financial implications of current MRI usage and propose recommendations for future practice.

Methodology: Data was collected retrospectively on 285 patients presenting with non-traumatic spinal concerns between 01/07/2023 and 31/12/2023. Patient data, including demographic information, referral reasons, and MRI results, were gathered from trauma lists and analyzed using Excel. This was compared against national standards for Cauda Equina Syndrome (CES) and other spinal pathologies.

Results: The evaluation reveals a substantial overuse of urgent MRI scans, resulting in significant financial implications for the Trust. A preliminary analysis of the MRI data demonstrates a discrepancy between the number of referrals and the presence of red flags, with only 53% of referred patients identified as having red flag symptoms. Despite this, 63% of referred patients underwent MRI scans. The findings were as follows: 55% of the scans revealed disc bulge or prolapse, 20% were normal, 9% showed degenerative changes, and 5% confirmed Cauda Equina Syndrome (CES).

Conclusion and Recommendations: A more selective approach to MRI scan requests is essential to ensure alignment with national guidelines, reduce unnecessary imaging, and lower costs. Future actions will involve revising departmental protocols, improving documentation practices, and providing staff training on appropriate MRI referral criteria. Additionally, a decrease in the number of positive CES diagnoses on MRI, coupled with an increase in the incidence of CES, is indicative of improved access to MRI scanning.



Mohamed Farag

Nottingham University Hospitals NHS Trust

Management of open fractures: Assessment of adherence to BOA guidelines regarding duration of antibiotics and timing of administration

Background: Open fractures require timely multidisciplinary management to enable optimum recovery and to minimise the risk of infection. British Orthopaedics Association Guidelines recommend administration of prophylactic antibiotics as soon as possible, ideally within 1 hour of injury. In our unit, there were incidences where antibiotics were administered for an inappropriate duration or that they were not administered within 1 hour.

Objectives: An audit was completed to collect data on antibiotic prescribing practices before and after introducing a prescribing bundle on Electronic Prescribing and Medicines Administration systems to monitor and to help improve the adherence to the British Orthopaedic Association Standards for Trauma and Orthopaedics.

Study Design and Methods: A retrospective study was formed in which patients' data was collected from T&O trauma data base. Data collection was completed along one month pre-intervention and one-month post-intervention. The inclusion criteria was any open fracture except for those listed in the exclusion criteria. Any patients with open fractures of midfoot, forefoot, and hand were excluded. The data points collected include whether antibiotics were administered, the antibiotic choice was correct, the antibiotic duration was correct, and antibiotics were given within one hour...

Descriptive statistics was used to analyse the results to compare prescribing practices pre and post introducing the Electronic Prescribing and Medicines Administration systems bundle. This bundle was in collaboration discussions with the head of service and microbiology team and prescribes the correct antibiotics for the correct length of time.

Results: Sample size for pre and post intervention groups were 22 patients in each. There was 100% (n=22) adherence to guidelines for antibiotics being given and the correct antibiotics given in both the pre-and post- intervention group. The appropriate duration was prescribed correctly 73% (n=16) in the pre-intervention group, and it improved to 77% (n=17) post-intervention. A bigger improvement was reflected in administration of antibiotics within 1 hour from 18% (n=4) to 55% (n=12).

Conclusion: Early administration of intravenous antibiotics for treatment of open fractures is mandatory to minimise the risk of infection and to improve clinical outcome for patients. Implementation of the antibiotic bundle in our hospital has improved the management of patient as per guidelines which improved the outcome of open fracture management in our hospital.

Biography

Mohamed Farag MBChB, MRCS, is currently a CT2 trainee in the Orthopaedic-Themed Core Surgical Training Programme at Queen's Medical Centre, part of Nottingham University Hospitals NHS Trust. He has a special interest in the Trauma and Orthopaedics specialty.

Mr. Mohamed Mahmoud*, Mr. Hossam Abodonia

Dorset County Hospital Foundation Trust (DCHFT), Dorchester, United Kingdom

Imaging modalities for diagnosis of occult neck of femur fractures: Current practice of NHS district general hospital

Background: Neck of Femur Fractures (NOFF) are one of the most common fractures, especially in old age community. Nice guidelines recommend Performing surgery on the day of, or the day after, admission. X-ray is usually sufficient to diagnose NOFF. However, in some situations, x-ray doesn't show an obvious fracture despite clinical suspicion of NOFF. The estimated prevalence of occult hip fractures is 2-10% of total hip fractures.

Method: Nice Guidelines recommend Offering an MRI scan if a hip fracture is suspected despite negative X-rays of an adequate standard. If MRI is not available within 24 hours or is contraindicated, to consider a CT scan. We collected the data from both CT and MRI scans for suspected NOFF. We considered the scan to be positive if it defined either intracapsular or extracapsular NOFF. The data was collected for a period of 6 months.

Results: Forty-eight CT scans were performed for suspicion of occult NOFF. The mean age for patients was 83 (53-98) years old. Twelve CTs (25%) were positive for NOFF. Ten of the positive scans were done within 24 hours of the initial x-ray. CT scans done out of working hours were 16 (33%). Our records showed two MRI scans done during the study period. One of them was preceded by a CT with a negative result. Both MRI scans were negative for hip fractures.

Conclusion: MRI scan is the gold standard image modality for occult hip fracture diagnosis. At the same time, a CT scan can provide a suitable alternative if MRI service is not available or could cause a delay in medical service.

Biography

Mr. Mohamed Mahmoud received his medical training at Assiut University Faculty of Medicine in Egypt (2009-2016). He then began his career as a resident doctor in the A&E department at Dorset County Hospital. Due to his undying passion for orthopaedics, he then took a taster week in the Trauma and Orthopaedics department at the same hospital. He, soon after, started his orthopaedics career as a resident doctor when he designed a teaching program for the resident trainees in trauma and orthopaedics. He also took part in several local as well as national research programs and audits aiming to improve the clinical practice and provide a breakthrough in trauma and orthopaedics.



Mohammad W Chaarani

Hamad Medical Corporation/Weill Cornell Medical School Qatar, Qatar

Antegrade rush nailing for fractures of the distal humerus

A single antegrade rush nail is used to treat fractures of the distal humerus extending to the olecranon fossa. In order to stabilise the fracture, the bent tip of the rush nail was directed into the lateral epicondylar ridge. This gives immediate stability. Fractures unite without residual stiffness of the shoulder or elbow. The nail is bent before introduction to facilitate the procedure and produce three-point fixation for additional stability, the entry point is directed lateral to the great tuberosity and the tip is fitted snugly lateral to the olecranon fossa. The technique and outcome will be discussed in details.

Biography

Mohdwlid Elshaarani Chaarani is Fellow of the Royal College of surgeons of Edinburgh. Sr consultant, orthopedic surgeon at Hamad Medical Corporation. Clinical tutor at Weill Cornell medical school Qatar. Interested in pediatric orthopedics and orthopedic trauma.



Mr. Mohamed Wahb*, Dr. Nadeem Saleem, Mr. Mohamed Hashem

Frimley Health NHS Foundation Trust, United Kingdom

Outcomes of measure resected vs gap balance sized TKR local service evaluation

Introduction: Knee replacement surgeries at Heatherwood Hospital are increasing, with 984 Total Knee Replacements (TKRs) performed in 2024 compared to 698 in 2023 (NJR Report). Two common TKR techniques are Measured Resection (MR), which uses anatomical landmarks for bone cuts, and Gap Balancing (GB), Measured Resection on equal soft tissue tension and symmetrical gaps. Evidence comparing these methods remains inconclusive.

Aim:

- To compare postoperative outcomes between MR and GB techniques using the Oxford Knee Score (OKS).
- OKS ratings: Excellent (42–48), Good (34–41), Fair (27–33), Poor (0–26).

Methodology:

- 60 TKRs were performed by a consultant in the second half of 2023 (30 MR, 30 GB).
- Retrospective analysis included demographics (age, sex, BMI), postoperative surgical site infection (SSI), and 18-month OKS.
- Data were compiled using excel.

Results:

- GB technique showed superior outcomes: 60% achieved the maximum OKS vs. 43.3% in the MR group.
- 80% in the GB group scored Excellent vs. 53.3% in MR.
- Fewer GB patients fell into Good or Fair categories, indicating more consistent results.
- Shorter hospital stays were noted in GB (30%) vs. MR (10.7%).
- MR group had a higher mean BMI (30.94 vs. 26.62).

Conclusions:

While broader evidence remains varied, our local evaluation indicates better patient-reported outcomes and shorter hospital stays with the GB technique, without increased complications. Given our high case volume and robust local data, a larger comparative study could help clarify the optimal approach in TKR.

Biography

Mohamed Wahb is a Trauma and Orthopaedic Junior Clinical Fellow at Wexham Park Hospital, part of Frimley Health NHS Foundation Trust in the UK. He graduated from Benha University, Egypt, in 2020 with a degree in Medicine and Surgery. He is also a proud Member of the Royal College of Surgeons of England, reflecting his commitment to continuous professional development and excellence in surgical care.



Mr. Mohamed Wahb*, Dr. Nadeem Saleem, Mr. Mohamed Hashem

Frimley Health NHS Foundation Trust, United Kingdom

Compliance rate of GP referral's to the WPH trauma & orthopaedic service

Introduction: The interface between primary and secondary care is a core feature of the NHS. GPs act as gatekeepers, managing referrals to secondary care. According to The King's Fund, high-quality referrals rely on three principles:

- **Necessity** – timely and appropriate referrals
- **Destination** – directing patients to the right service the first time
- **Process** – ensuring referrals are well executed

The Royal College of General Practitioners (RCGP) has issued a Quality Patient Referrals booklet to support best practices in GP referral management. This audit evaluates local GP referrals to the WPH Trauma & Orthopaedic (T&O) Foot & Ankle Service in line with RCGP guidance.

Aim: To optimise GP referrals to the WPH T&O Service by ensuring patients are seen by the right clinician, at the right time, in the right place—thereby supporting high-quality care and efficient use of MSK service capacity across primary and secondary care.

Methods:

- Retrospective review of the 30 most recent GP referrals to the Foot & Ankle (F&A) Service as of 11/04/2025.
- Data sourced from outpatient clinic lists on EPIC and corresponding e-RS referral letters.

Results:

- Fully compliant referrals: 3/30 (10%)
- Acceptable but non-compliant: 21/30 (70%)
- Non-acceptable referrals: 6/30 (20%)
- Most acceptable referrals were for Hallux Valgus (Arthritis)
- 80% of patients had no initial investigations
- 53% lacked documented physical examination

Conclusion: Only 10% of referrals met full guideline compliance. Most lacked appropriate investigations or examination, highlighting the need for improved referral standards.

Actions: An official poster summarising referral criteria has been sent to local GP services to promote adherence to RCGP guidelines.

Biography

Mohamed Wahb is a Trauma and Orthopaedic Junior Clinical Fellow at Wexham Park Hospital, part of Frimley Health NHS Foundation Trust in the UK. He graduated from Benha University, Egypt, in 2020 with a degree in Medicine and Surgery. He is also a proud Member of the Royal College of Surgeons of England, reflecting his commitment to continuous professional development and excellence in surgical care.



**Muhammad Muneeb Safdar^{1*}, Jake Sumpton²,
Christopher Lodge²**

¹York Hospital

²Hull York Medical School

Management of femoral periprosthetic fractures: An institutional experience at a district general hospital

Introduction: A total hip replacement is one of the most common procedures performed in trauma and orthopaedic surgery. Successful outcomes following arthroplasty surgery, coupled with the ageing population, has contributed to more hip replacements being performed by orthopaedic surgeons. An increase in the incidence of femoral periprosthetic fractures has been observed due to this, leading to an increase in the number of revision hip replacements being performed annually.

Aim: The primary aim of this study was to assess whether there is a higher mortality rate associated with delayed surgical intervention for femoral periprosthetic fractures. This study also assessed whether post-operative complications were associated with delayed surgical intervention.

Methods: The patients were reviewed retrospectively in this cohort study, which was carried out at a district general hospital in the United Kingdom. A retrospective review of the patients from 2018-2022 was carried out by reviewing the theatre records. The patients were split into two groups where the first group analysed the patient outcomes according to the type of surgical intervention. The second group analysed the outcomes according to the timing of surgical intervention being carried out within or after 36 hours of diagnosis.

Results: In total, 88 patients were included in this study where 49 patients had revision surgery and 39 had fixation. It was observed that there was no statistically significant difference in 30-day mortality and one year mortality when analysing the patients according to the type of surgical intervention. Likewise, there was no statistically significant difference in 30-day and one year mortality when comparing the patients according to the timing of surgical intervention of before or after 36 hours; the p values were >0.05 for these two groups. It was noted that there were more post-operative complications for the patients who had surgery within 36 hours of diagnosis and this was statistically significant with a p value of 0.014.

Conclusion and Recommendations: In conclusion, the results of this study are in keeping with the literature. There is no significant impact on 30-day and one year mortality with a delay

in surgical intervention for femoral periprosthetic fractures, unlike native hip fractures. Although the effect of delayed surgical intervention on long term mortality remains uncertain, better outcomes are achieved through medical optimisation and careful planning.

Biography

Muhammad completed his MBCHB from University of Aberdeen. He has actively participated in several audit projects. He also has keen interest in medical education and is currently working as a clinical teaching fellow.



Muhammad Muneeb Safdar*, James Williams

Musgrove Park Hospital, Taunton

Does delayed surgical intervention for ankle fractures affect patient outcomes?

Introduction: Ankle fractures are common injuries that are managed by the trauma and orthopaedic surgeons. Although ankle fractures are commonly sustained by low energy mechanisms, they can also occur due to a high mechanism of injury such as road traffic collisions. The stable ankle fractures are managed conservatively, however, unstable ankle fractures often require Open Reduction and Internal Fixation (ORIF) to restore the ankle mortise and reduce the risk of long-term complications. The timing of surgery, for unstable ankle fractures, can potentially have an impact on patient outcomes. The BOAST guidelines are helpful in the management of ankle fractures, and they recommend doing the surgery within day 1 of the injury.

Objectives: The primary outcome of this study was to assess whether delay in ankle fracture surgery has an impact on patient outcomes, particularly if there are any wound complications. This study also assessed whether delayed surgery for ankle fractures has an impact on fracture union in addition to observing whether diabetes has an impact on patient outcomes.

Methods: This retrospective cohort study reviewed the ankle fractures, that were managed with ORIF at Musgrove Park hospital, from May 2022 to July 2024. The electronic database (EPRO) was used to identify the ankle fractures and the data was collected on an NHS computer using Microsoft Excel. The patients were allocated to early fixation group if they had surgery within one day of the injury and they were allocated to the delayed fixation group if they had surgery after day one of the injury.

Results: Overall, 96 patients with an ankle fracture were reviewed. There were only four patients (4.2%) who were in the early fixation group and had surgery within one day of the injury. Out of the 92 patients (95.8%) who had ORIF after day one of the injury, nine patients (9.4%) had wound complications, from which one patient had diabetes and one patient continued to smoke. Patients, who had early fixation, were not noted to have any wound complications post-operatively. The results were not noted to be clinically significant for the primary outcome between the two groups.

Conclusions and Recommendations: Due to pressures within the NHS, hospitals can struggle to achieve the target of performing ankle ORIF within day one of the injury. Furthermore, delaying the surgery by a few days can result in further swelling or formation of the blisters, which can

delay the surgery even further. Although the results of this study did not observe any clinically significant difference between the two groups, this study is limited by small sample size overall. Hospital should aim to develop pathways that would help to perform ankle ORIF within one day of the injury.

Biography

Muhammad completed his MBCHB from University of Aberdeen. He has actively participated in several audit projects. He also has keen interest in medical education and is currently working as a clinical teaching fellow.



Muhammad Muneeb Safdar*, Andrew Stevenson

Musgrove Park Hospital, Taunton

A clinical audit assessing patients presenting with a supracondylar fracture

Introduction: Supracondylar fractures are the most common elbow injuries in children where the common mechanism of injury is fall on outstretched hand with hyperextension of the elbow. Displaced supracondylar fractures can present with a neurovascular deficit and severe injuries can be limb threatening. The management of these injuries can be conservative or surgical, depending on the severity of the injury. British Orthopaedic Association Standards for Trauma and Orthopaedics (BOAST) have provided guidelines for the management of supracondylar fractures where the importance of documentation of the neurovascular status has been highlighted.

Aims: The primary aim of this audit was to assess the adherence to BOAST guidelines with regards to documentation of the neurovascular status locally at the Musgrove Park Hospital.

Methods: The patients were reviewed retrospectively from March 2020-June 2024. As the clerking of the patients is done electronically on EPRO at Musgrove Park Hospital, the clerking notes were reviewed retrospectively for patients presenting with a supracondylar fracture. The documentation of radial pulse, capillary refill time and the function of anterior interosseous nerve, medial radial and ulna nerves were assessed. The data was recorded in Microsoft Excel on an NHS computer.

Results: Overall, 65 clerking notes were reviewed. The presence of radial pulse was only documented for 23 patients (35.4%), capillary refill time was not documented for 32 notes (49.2%) and median nerve function was not documented for 12 patients (18.5%). The anterior interosseous nerve function was not documented for 18 patients (27.7%). Additionally, ulna and radial nerve function was not documented for 13 patients (20%).

Recommendation and Conclusion: The main limitation of this clinical audit was that this was done retrospectively with a small sample size. Poor documentation of the neurovascular status was observed overall. Out of all the domains assessed, capillary refill time was not documented in most patients. The results of this audit were presented locally at the monthly audit meeting and the possibility of developing a proforma for documentation of the neurovascular status was discussed. A second cycle of this audit is required to ensure that the local practice has been improved.

Biography

Muhammad completed his MBCHB from University of Aberdeen. He has actively participated in several audit projects. He also has keen interest in medical education and is currently working as a clinical teaching fellow.



Muhammad Muneeb Safdar*, Andrew Stevenson

Musgrove Park Hospital, Taunton

A clinical audit reviewing the operation notes

Introduction: It is essential to have clear communication between the multidisciplinary team when looking after the surgical patients. Events in theatre, including the type of operation, is formally documented in the form of operation notes. Adequate documentation of the procedure, as well as the post-operative instructions, are of paramount significance with regards to perioperative care and patient safety. Additionally, inadequate documentation can lead to poor outcomes for medicolegal disputes. The Royal College of Surgeons have provided guidelines with regards to the documentation of the operation notes and have recommended the domains that should be included in the operation note.

Aim: The aim of this audit was to assess the local practice in the orthopaedic surgery department at Musgrove Park Hospital. It was assessed whether the documentation of the operation notes was in line with the guidance provided the Royal College of Surgeons.

Methods: This was a retrospective review of the operation notes where the operation notes were reviewed over a two-week period in November 2024. The operation notes are documented electronically on EPRO and this was used to review the notes. The domains assessed were date, time, type of procedure, name of the operating surgeon and assistant, anaesthetist, theatre, procedure and incision, diagnosis, findings, details of any tissue removed, antibiotic prophylaxis, closure and VTE prophylaxis. Microsoft Excel was used to record the data on an NHS computer.

Results: Overall, 51 operation notes were reviewed. It was observed that 11 patients (21.6%) had antibiotics but this was not mentioned in the operation note. Additionally, the plan for post-operative VTE prophylaxis was not mentioned for 7 notes (13.7%) and 6 operation notes (11.8%) did not have the name of the anaesthetist. There was also 1 operation note (2%) where the patient was on dual antiplatelet therapy pre-operatively but the operation note did not have clear instructions on when to restart them.

Conclusion and Recommendations: Good documentation of the operation notes was observed in the department overall. It is vital to have clear post-operative instructions, particularly for VTE prophylaxis. It was noted that although most of the operation notes had adequate documentation, there was no standardised template and this could be due to the surgeons having their own templates for common procedures. The findings of this audit were presented

locally to the department at the monthly audit meeting and the option of having standardised templates for common orthopaedic procedures was discussed.

Biography

Muhammad completed his MBCHB from University of Aberdeen. He has actively participated in several audit projects. He also has keen interest in medical education and is currently working as a clinical teaching fellow.



Muhammad Mannan^{1,2*}, Faisal Karim^{1,2}, Usman Hafeez^{1,2}, Sarmad Khalil^{1,2}

¹Orthopaedic Surgery, Birmingham Heartlands Hospital, Birmingham, UK

²Department of Orthopaedic Surgery, Ghurki Trust Teaching Hospital, Lahore, Pakistan

Efficacy of Platelet-Rich Plasma (PRP) in treating plantar fasciitis

Introduction: Plantar fasciitis is a prevalent condition characterized by heel pain, commonly affecting middle-aged and older adults. The traditional treatments include orthotics, physiotherapy, and more invasive measures like steroid injections, with varying degrees of success. Platelet-rich plasma (PRP) therapy has been emerging as a potential alternative due to its ability to promote tissue healing through growth factors released by concentrated platelets.

Objective: This study aims to assess the efficacy of PRP in alleviating pain and enhancing functional outcomes in patients with plantar fasciitis unresponsive to conservative treatment methods.

Materials and Methods: Conducted at the Orthopedics Department of Ghurki Trust Teaching Hospital, Lahore, the retrospective study included 140 patients aged 25 to 65 years diagnosed with plantar fasciitis from March 2020 to January 2021. Patients received a 2.5 ml PRP injection at the most tender point of the medial heel, followed by a three-month post-therapy evaluation period to measure treatment efficacy using the Visual Analog Scale (VAS) and the Foot and Ankle Ability Measure (FAAM).

Results: Out of 140 patients, 131 (93.57%) reported significant pain relief post-treatment, with a notable reduction in VAS scores and improvement in FAAM scores. The study found age as a significant factor in predicting the success of PRP treatment, with younger patients showing better outcomes.

Conclusion: PRP therapy proves to be a highly effective treatment for plantar fasciitis, offering substantial pain relief and functional improvement, particularly in cases where traditional conservative treatments have failed. This study supports the integration of PRP injections into standard treatment protocols for plantar fasciitis, recommending further research to standardize treatment practices.

Keywords: Plantar Fasciitis, Platelet-Rich Plasma, PRP Therapy, Pain Management, Orthopedic Treatment.

Biography

Dr. Muhammad Mannan is a Trust Grade Registrar in Trauma and Orthopaedics at University Hospital Birmingham NHS Trust, UK. He completed his FCPS in Trauma and Orthopaedics in Pakistan and obtained a master's degree in medical education from the University of South Wales, Birmingham. Dr. Mannan has authored multiple peer-reviewed publications, and his academic and clinical interests include minimally invasive orthopaedic surgery, complex fracture management, and biologic therapies for musculoskeletal conditions.



Muhammad Mannan^{1,2*}, Shahzeen Eisha², Khandaker T. Ahmed¹, Muhammad Ishfaq Mazari²

¹University Hospital Birmingham NHS Trust, Trauma & Orthopaedics, Birmingham, UK

²Department of Orthopaedic Surgery, Sheikh Zayed Medical College Rahim Yar Khan, Pakistan

Functional outcomes of Distal Tibia Fractures (DTFS) treated with Minimally Invasive Percutaneous Plate Osteosynthesis (MIPPO)

Background: Distal Tibial Fractures (DTFs) are relatively uncommon but pose significant management challenges due to poor vascularity and associated soft tissue injury. Minimally Invasive Percutaneous Plate Osteosynthesis (MIPPO) has emerged as a promising technique to address these issues by preserving fracture biology while ensuring stable fixation.

Objective: To evaluate the functional outcomes and complication rates of closed DTFs treated with MIPPO in adult patients and to assess the influence of patient demographics, mechanism of injury, and fracture classification on outcomes.

Methods: A retrospective study was conducted at Sheikh Zayed Medical College Rahim Yar Khan, Pakistan, between January and December 2022, involving 70 patients aged 18–60 years with closed or Gustilo-Anderson grade I distal tibial fractures. Functional outcomes were assessed using the American Orthopaedic Foot & Ankle Society (AOFAS) score at 6 weeks, 3 months, and 6 months postoperatively. Data were analyzed using chi-square and t-tests, with $p \leq 0.05$ considered statistically significant.

Results: The mean age was 34.04 ± 9.66 years, with males comprising 78.8% of cases. Road traffic accidents accounted for 71.4% of injuries. Fracture types included A1 (30%), A2 (45.7%), and A3 (24.3%). Union occurred most commonly within 12–16 weeks (41.4%). At final follow-up, 30% had excellent, 52.9% satisfactory, 12.9% fair, and 4.3% poor outcomes. Postoperative complications occurred in 12.86% of patients, including malunion (5.7%), infection (4.3%), and ankle stiffness (2.9%). No significant associations were found between functional outcomes and age, gender, or mechanism of injury.

Conclusion: MIPPO is an effective surgical technique for DTFs, offering high rates of excellent and satisfactory functional outcomes with low complication rates. Its minimally invasive nature helps preserve soft tissue integrity and fracture vascularity, making it a valuable option for managing these complex fractures.

Keywords: Distal Tibia Fracture, MIPPO, Minimally Invasive Surgery, Functional Outcome, Orthopaedics.

Biography

Dr. Muhammad Mannan is a Trust Grade Registrar in Trauma and Orthopaedics at University Hospital Birmingham NHS Trust, UK. He completed his FCPS in Trauma and Orthopaedics in Pakistan and obtained a master's degree in medical education from the University of South Wales, Birmingham. Dr. Mannan has authored multiple peer-reviewed publications, and his academic and clinical interests include minimally invasive orthopaedic surgery, complex fracture management, and biologic therapies for musculoskeletal conditions.



Prashant Sharma, Dr. Navdeep Singh Keer*, Loveneesh Krishna

Central Institute of Orthopaedics, VMMC and Safdarjung Hospital, New Delhi, India

Evaluation of functional and radiological outcomes of percutaneous Herbert screw fixation in Jones fractures: A prospective study

Background: Jones fractures, occurring at the metaphyseal-diaphyseal junction of the fifth metatarsal, present a significant risk of delayed union or non-union due to the relative vascular watershed at the fracture site. In highly active individuals, surgical fixation is often preferred to expedite union and early return to function. This prospective study aimed to evaluate the clinical, functional, and radiological outcomes of percutaneous Herbert screw fixation in patients with Jones fractures.

Methods: This was a prospective study conducted at a tertiary trauma centre over 18 months. Thirty-three patients aged 18–60 years with isolated closed Jones fractures underwent percutaneous Herbert screw fixation. Functional outcomes were assessed using the Foot and Ankle Disability Index (FADI) at 1, 2, 3, and 6 months postoperatively. Radiological union was evaluated at 3 weeks, 6 weeks, 3 months, and 6 months via serial radiographs. Statistical analyses included Wilcoxon-Mann-Whitney U tests and Friedman tests, with significance set at $p < 0.05$.

Results: The mean age of participants was 38.7 years, with a male predominance (54.5%). Radiological union was achieved in 84.8% by 6 weeks, 90.9% by 3 months, and 97% by 6 months. Functional scores (mean FADI) improved significantly over time: 61.58 at 1 month, 85.06 at 2 months, 92.06 at 3 months, and 93.55 at 6 months ($p < 0.001$). The overall union rate was 94%, with a low complication rate (18.2%), including minor stiffness, chronic pain, and one case each of delayed union and non-union.

Conclusion: Percutaneous Herbert screw fixation in Jones fractures yields excellent union rates, accelerated functional recovery, and minimal morbidity. Early radiological union strongly correlated with improved FADI scores and earlier return to pre-injury activities.

Disclosure: The authors declare no conflicts of interest related to this study.

Biography

Dr. Navdeep Singh Keer completed his undergraduate training from Maulana Azad Medical College (MAMC), New Delhi, and postgraduate training in Orthopaedics from the Central Institute of Orthopaedics, Safdarjung Hospital, New Delhi. He has a keen interest in trauma surgery, arthroscopy, and sports medicine, with an active passion for research and medical education. He has successfully cleared the MRCS (England) examination and has completed five clinical audits and Quality Improvement Projects (QIPs). Dr. Keer is dedicated to advancing evidence-based orthopaedics and aspires to contribute significantly to surgical innovation, academic research, and the mentoring of future orthopaedic trainees.



Nitish Kumar¹, Dr. Navdeep Singh Keer^{1,3*}, Loveneesh Krishna¹, Protik Mukherjee¹, Balu Ravi²

¹Central Institute of Orthopaedics, VMMC and Safdarjung Hospital, New Delhi, India

²Department of Orthopaedics, The Royal Wolverhampton NHS Trust, Wolverhampton, United Kingdom

³Sports Injury Centre, VMMC and Safdarjung Hospital, Delhi, India

Incidence and functional impact of malrotation following intramedullary nailing of femoral fractures: A prospective CT-based study

Background: Rotational malalignment remains a prevalent yet under-recognised complication following closed intramedullary nailing of femoral shaft fractures. Although Computed Tomography (CT) provides an accurate assessment, literature correlating malrotation with functional impairment remains sparse. The primary aim of this study was to evaluate the incidence and degree of femoral malrotation post-intramedullary fixation and its impact on lower limb functional outcomes.

Methods: This prospective longitudinal study was conducted at a tertiary trauma centre over 18 months. Thirty skeletally mature patients with acute diaphyseal and diaphysio-metaphyseal femoral fractures underwent closed antegrade intramedullary nailing. Postoperative rotational alignment was quantified using CT scans based on the Jeanmart method. Functional outcomes were assessed at 6 weeks, 12 weeks, and 6 months postoperatively using the Lower Extremity Functional Scale (LEFS). Statistical analyses employed paired t-tests, independent t-tests, ANOVA, and Pearson's correlation coefficient, with significance set at $p < 0.05$.

Results: The mean patient age was 28.7 years, with a male predominance (86.7%). Rotational malalignment exceeding 10° was identified in 20% of cases. Mean internal rotation deformity measured 12.6° , and mean external rotation deformity was 8° . Malrotation $>10^\circ$ was significantly associated with inferior LEFS scores ($p < 0.05$). Preoperative fracture comminution demonstrated a significant correlation with increased malrotation ($p < 0.001$). Delayed surgical intervention beyond 10 days was linked to poorer functional recovery ($p = 0.0086$). Radiological union was achieved between 3 to 6 months in the majority, with universal patient satisfaction at final follow-up.

Conclusion: Rotational malalignment following femoral intramedullary nailing adversely affects functional outcomes when exceeding 10° , with a measurable impact on gait and limb performance.

Implications: Routine postoperative CT-based rotational assessment may be considered in high-risk cases (comminuted fractures and delayed presentations) to allow early detection and potential corrective intervention, thereby preventing long-term functional deficits.

Disclosure: The authors report no conflicts of interest related to this study.

Biography

Dr. Navel Singh Keer completed his undergraduate training from Maulana Azad Medical College (MAMC), New Delhi, and postgraduate training in Orthopaedics from the Central Institute of Orthopaedics, Safdarjung Hospital, New Delhi. He has a keen interest in trauma surgery, arthroscopy, and sports medicine, with an active passion for research and medical education. He has successfully cleared the MRCS (England) examination and has completed five clinical audits and Quality Improvement Projects (QIPs). Dr. Keer is dedicated to advancing evidence-based orthopaedics and aspires to contribute significantly to surgical innovation, academic research, and the mentoring of future orthopaedic trainees.



Dr. Navdeep Singh Keer^{1,3*}, Utkarsh Jain¹, Ishaan Siwach¹, Loveneesh Krishna¹, Balu Ravi²

¹Central Institute of Orthopaedics, VMMC and Safdarjung Hospital, New Delhi, India

²Department of Orthopaedics, The Royal Wolverhampton NHS Trust, Wolverhampton, UK

³Sports Injury Centre, VMMC and Safdarjung Hospital, Delhi, India

External fixation vs. calcaneal pin traction in staged management of pilon fractures with low-grade soft tissue injury: A prospective comparative analysis

Background: Pilon fractures are high-energy injuries involving the distal tibial plafond and are often associated with significant soft tissue compromise. Staged management is essential, with initial temporising strategies aimed at protecting soft tissues prior to definitive fixation. While External Fixation (ExFix) remains the standard temporising method, Calcaneal Pin Traction (CPT) is frequently employed in resource-constrained environments. This study aims to compare clinical and functional outcomes between CPT and ExFix in managing pilon fractures with Tscherne grade 1/2 soft tissue injuries.

Methods: In this prospective comparative study, patients with closed pilon fractures were treated with either CPT or ExFix as the initial temporising measure. Baseline demographics, injury characteristics, and time to definitive fixation were recorded. Visual Analogue Scale (VAS) scores were assessed at 48 hours post-procedure to evaluate early pain control. Intraoperative reduction quality was assessed using the Burwell–Charnley criteria. Postoperative complications, including pin tract infections and non-union, were documented. Functional outcomes were evaluated using the American Orthopaedic Foot and Ankle Society (AOFAS) ankle-hindfoot score at six months. Statistical analysis was performed using STATA software.

Results: Patients in the ExFix group demonstrated lower mean VAS scores, indicating superior early pain relief ($p < 0.05$). There was no statistically significant difference between the groups in time to definitive surgery or in the quality of articular reduction. At six months, AOFAS scores were comparable between the CPT and ExFix cohorts. The rates of complications, including superficial pin tract infections and non-union, were similar across both groups.

Conclusion: Both CPT and ExFix are effective temporising options for pilon fractures with low-grade soft tissue injury. Although ExFix offers superior early pain control, CPT is a clinically viable alternative, particularly in resource-limited settings.

Disclosure: The authors declare no conflicts of interest.

Biography

Dr. Navdeep Singh Keer completed his undergraduate training from Maulana Azad Medical College (MAMC), New Delhi, and postgraduate training in Orthopaedics from the Central Institute of Orthopaedics, Safdarjung Hospital, New Delhi. He has a keen interest in trauma surgery, arthroscopy, and sports medicine, with an active passion for research and medical education. He has successfully cleared the MRCS (England) examination and has completed five clinical audits and Quality Improvement Projects (QIPs). Dr. Keer is dedicated to advancing evidence-based orthopaedics and aspires to contribute significantly to surgical innovation, academic research, and the mentoring of future orthopaedic trainees.



Siddharth S Mishra, Neha Sawant*

Department of Neuroscience Physiotherapy, MGM College of Physiotherapy, India.

Effects of dexteria app therapy on hand function in subacute stroke survivors

Background: Stroke is a neurological condition characterised by acute focal injury due to infarction or haemorrhage. Post stroke impairment of hand dexterity is very common and return of hand function is an important rehabilitation goal for functional independence. Newer therapy options like Dexteria app therapy provides task-oriented approach allowing intensive training and repetitions which could prove to be beneficial for improving fine motor function. This study assessed the effect of Dexteria app therapy in comparison to conventional hand therapy in improving hand function in subacute stroke survivors.

Methods: Twenty-six subacute stroke survivors with Brunnstrom stage II and above of hand recovery were randomly divided into two groups- Group A (conventional therapy n=13) and Group B (Dexteria app therapy n=13). Both groups received 60 minutes of therapy for 21 sessions over a period of 30 days. All participants were assessed on Brunnstrom hand recovery voluntary control grading and Jebsen Hand Function Test before starting and after completion of 21 sessions of intervention. Wilcoxon rank sum test was used for statistical analysis.

Results: Stroke survivors in both groups improved in hand function post treatment. Inter-group comparison between groups A and B using the Wilcoxon rank sum test showed Dexteria app therapy group was statistically significantly higher than the conventional therapy group in Jebsen hand function test along with its components with $Z=-3.0$ and $P=0.00$.

Conclusion: Findings of this study showed significant improvement in subacute stroke survivors who received Dexteria app therapy over participants who were administered with conventional therapy. Stroke survivors in Dexteria app therapy group improved in hand precision and hand manipulation component of hand function owing to the multisensory model approach and intensive training nature.

Biography

Neha Sawant is a highly experienced physiotherapist and a researcher, specializing in stroke rehabilitation. She has completed her Master's degree in Adult Neurological conditions and currently, she is practicing as a specialized Stroke physiotherapist in NHS England. Neha's research interest includes exploring options to integrate technology with innovative rehabilitation strategies to create an impact on stroke recovery.



Nicholas Tin Lik Wong^{1*}, Carolyn Yu Tung Wong^{1,2}

¹Department of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China

²Department of Medicine, University College London, London, United Kingdom

Transforming orthopaedics: Harnessing the metaverse for enhanced patient care, education, and collaboration

The COVID-19 pandemic has significantly accelerated the urgency for digital transformation across the healthcare landscape, with orthopaedics being one of the fields that stands to benefit substantially. The integration of advanced technologies, including Artificial Intelligence (AI), the Internet of Things (IoT), robust telecommunication networks, and blockchain, has become essential in redefining patient care paradigms. The introduction of the metaverse—a vast interconnected digital environment that unifies Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR)—represents a groundbreaking development. This innovative platform fosters immersive and interactive experiences, enhancing social engagement between healthcare providers and patients.

In orthopaedics, the application of metaverse technology can profoundly impact various aspects of patient care. For instance, virtual environments can facilitate telemedicine consultations, where patients can interact with their orthopaedic surgeons via lifelike avatars, experiencing a sense of presence that traditional video calls lack. Such interactions can lead to more personalized care, as physicians can better assess patient conditions in a 3D virtual space, allowing for more accurate diagnoses and treatment planning.

Furthermore, the metaverse can revolutionize the education and training of orthopaedic surgeons. Utilizing simulated surgical environments, trainees can engage in risk-free practice, conducting virtual surgeries on 3D models that mimic real-life anatomical structures. This level of immersive, hands-on learning can enhance skill acquisition and confidence among new surgeons while allowing experienced professionals to refine their techniques and stay updated on innovative procedures.

Additionally, the metaverse can streamline operational tasks within orthopaedic practices. Virtual platforms can replace traditional in-person meetings, enabling teams to collaborate effectively regardless of geographical constraints. By organizing and conducting meetings in 3D spaces, orthopaedic teams can foster a sense of teamwork and facilitate real-time discussions on complex cases, improving decision-making processes and treatment outcomes.

To fully realize the potential of these metaverse applications in orthopaedics, a multifaceted approach is necessary. The deployment of such advanced virtual health technologies must prioritize interoperability with existing clinical workflows, ensuring that these innovations complement rather than complicate practitioners' efforts. User-friendliness is also critical; successful adoption will depend on ease of use for both healthcare providers and patients. Compliance with clinical standards, economic feasibility, regulatory requirements, and cybersecurity protocols is non-negotiable, as these factors will underpin the trust and efficacy of virtual platforms.

In conclusion, the orthopaedic community must embrace this transformative moment by continually innovating and adapting to harness the unique capabilities of the metaverse. By leveraging these advancements, the field can enhance patient care, improve surgical outcomes, and ultimately reshape the future of orthopaedics on a global scale. The time for action is now, as integrating metaverse applications could lead to a new era of orthopedic practice that prioritizes patient engagement, education, and clinical excellence.

Biography

Nicholas is currently in his fifth year in MBChB at The Chinese University of Hong Kong. His educational experience is enhanced by extensive training in orthopaedics, including clinical attachments at the St. James's University Hospital and St George's University. Nicholas has a strong dedication for artificial intelligence research in orthopaedics. He actively engages in poster presentations at conferences like the CSHK, among others. His research initiatives are varied, featuring reviews in prominent journals like Heylion. His work encompasses important topics such as deep learning for disease classification in orthopaedics and innovative AI strategies for treating orthopaedic conditions.



Nicholas Tin Lik Wong^{1*}, Carolyn Yu Tung Wong^{1,2}

¹Department of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China

²Department of Medicine, University College London, London, United Kingdom

Leveraging chatgpt and large language models in orthopaedics: Enhancing patient care, diagnostics, and research

ChatGPT, a cutting-edge Artificial Intelligence (AI) chatbot built on Large Language Models (LLMs), has rapidly emerged as a transformative tool across various sectors, notably in orthopaedics. As the healthcare landscape evolves, its benefits and challenges are becoming increasingly recognized, particularly within the medical community. The broad accessibility of ChatGPT allows orthopaedic clinicians to explore an array of applications, ranging from generating differential diagnosis lists for conditions such as fractures and arthritis to streamlining patient documentation processes and optimizing surgical workflows.

In the field of orthopaedics, LLMs exhibit significant utility by effectively assisting clinicians during pre-operative assessments, helping them gather patient histories efficiently. For example, ChatGPT can facilitate the creation of patient education materials by synthesizing information on treatment options for joint replacement surgeries, thereby improving patient understanding and engagement. Furthermore, orthopaedic surgeons can leverage LLMs to generate detailed summaries of current treatment guidelines, ensuring they remain up to date with the latest evidence-based practices.

Despite these advantages, challenges remain in the implementation of LLMs. One of the notable issues is the tendency for LLMs to hallucinate, meaning they may produce responses that appear confident but contain inaccurate information. Such inaccuracies could mislead clinicians, leading to suboptimal patient care. Additionally, there are concerns about biases that may be inherent in the training data of LLMs, which could perpetuate existing disparities in healthcare. The integration of these models into orthopaedic research also poses difficulties, such as the risk of AI plagiarism, where generated content may inadvertently replicate existing literature without proper citation.

This paper aims to provide a thorough overview of LLMs, highlighting the significant advancements, particularly with ChatGPT, that have arisen in recent years. We will review recent studies that evaluate the impact of these language models in the medical field, focusing specifically on their applications within orthopaedics. Understanding the operational mechanisms of LLMs and their potential implications for patient care and clinical outcomes is essential for orthopaedic professionals as the technology progresses. In our discussion, we will elucidate the benefits of utilizing LLMs, which include enhancing diagnostic accuracy

and streamlining communication with patients. Furthermore, LLMs can assist in research by synthesizing complex medical literature, providing orthopaedic specialists with concise summaries of relevant findings. Nevertheless, we will also address the challenges of ensuring the reliability of generated content and the ethical considerations of deploying these models in clinical scenarios.

By comprehensively understanding the advancements and limitations of LLMs, the orthopaedic community can optimize their application in practice and research, thereby improving patient outcomes. As AI technology continues to develop, being informed about the capabilities and ethical implications of LLMs will empower orthopaedic practitioners to enhance their clinical practices and ultimately contribute to a more effective healthcare system.

Biography

Nicholas is currently in his fifth year in MBChB at The Chinese University of Hong Kong. His educational experience is enhanced by extensive training in orthopaedics, including clinical attachments at the St. James's University Hospital and St George's University. Nicholas has a strong dedication for artificial intelligence research in orthopaedics. He actively engages in poster presentations at conferences like the CSHK, among others. His research initiatives are varied, featuring reviews in prominent journals like Heylion. His work encompasses important topics such as deep learning for disease classification in orthopaedics and innovative AI strategies for treating orthopaedic conditions.



Dr. Nirav Valand*, Dr. Arsalan Baig, Dr. Niharika Danthurti, Dr. Amanda Dedekimor, Ms. Isabella Drummond, Mr. Muattaz Kazam, Mr. Al-Tawil Karam

Trauma and Orthopaedics Department, Barking, Havering, and Redbridge University NHS Trust, Romford, United Kingdom

Comparative assessment of diagnostic modalities in retrospective cases of necrotizing fasciitis in a district general hospital

Background: Necrotizing Fasciitis (NF) is a rare but rapidly progressive and life-threatening soft tissue infection, presenting significant diagnostic challenges due to its heterogeneous clinical presentation and the limitations of current diagnostic modalities. Early recognition and intervention are critical to improving patient outcomes, particularly in high-risk populations such as trauma and orthopaedic patients.

Methods: This retrospective study reviewed nine histopathologically confirmed cases of NF managed over a two-year period in a district general hospital. Data on patient demographics, comorbidities, clinical features, laboratory findings—including the Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) score and lactate levels—imaging results, and outcomes were collected and analyzed.

Results: The cohort consisted predominantly of older adults, with a mean age of 57.6 years and a high prevalence of diabetes mellitus (67%). The lower extremities, particularly the thigh, were the most commonly affected sites. Pain, erythema, and swelling were the most frequent presenting symptoms, while classic features such as bullae and shock were less common. The LRINEC score demonstrated limited sensitivity, correctly identifying only 56% of cases as high risk. MRI was highly sensitive in the limited cases performed, whereas CT and X-ray were less reliable. All patients underwent surgical debridement, with an in-hospital mortality rate of 22%. The incidence of NF in this cohort (9.0 per 100,000 person-years) was notably higher than national averages, likely reflecting the elevated risk profile of the trauma and orthopaedic patient population.

Conclusions: The findings highlight the variability in clinical and laboratory presentation of NF and the limitations of relying solely on the LRINEC score for diagnosis. A high index of suspicion and a multimodal diagnostic approach are essential for timely identification and management. Further research, including the integration of artificial intelligence and advanced analytics, may enhance early detection and improve outcomes in this challenging condition.

Biography

Dr. Nirav Valand completed an MBChB with an Honor's degree from King Ceasor University, Uganda (2014–2019) and practiced in Uganda for 3 years and currently in the United Kingdom since 2024. With a strong interest in clinical research and the application of artificial intelligence in healthcare, he is dedicated to improving diagnostic pathways and patient outcomes in acute care settings.



Ola Abu Halawa^{1,2*} MSW, Raphael Lotan² MD, Rachel Dekel¹ Prof, Shiri Shinan-Altman¹ PhD

¹Louis and Gabi Weisfeld School of Social Work, Bar-Ilan University, Ramat Gan, Tel Aviv District, Israel

²Department of Orthopedics, Wolfson Medical Center, Holon, Tel Aviv District, Israel

A longitudinal study of attachment, illness representations, and trust in physician as recovery promoters following hip fracture surgery in older adults

Background: Hip Fractures (HF) are among the most common and debilitating injuries in the elderly population, often resulting in long-term disability, loss of independence, and psychological distress. While most studies in orthopedics have focused primarily on physical recovery markers such as pain levels, mobility, and mortality, limited attention has been paid to psychosocial and emotional factors that may play a key role in shaping the recovery process. There is a growing recognition of the need for a more holistic and patient-centered approach that incorporates emotional resilience, cognitive perceptions of illness, and the quality of relationships with healthcare providers. This study is grounded in two psychological frameworks: Attachment Theory, which explains how individuals regulate stress and form expectations of support in relationships, and the Self-Regulation Model (SRM), which emphasizes the role of cognitive and emotional illness representations in shaping health behaviors and outcomes. Integrating these models into orthopedic research provides a novel understanding of how older adults cope with the challenges of surgical recovery.

Objective: This study aims to investigate the contribution of psychosocial variables- including attachment patterns, illness representations, perceived social support, and trust in the physician-patient relationship—to both physical and emotional recovery following hip fracture surgery. We hypothesize that more secure attachment styles and positive illness representations will be associated with better recovery outcomes. Furthermore, we propose that trust in the physician will moderate the relationship between attachment patterns and recovery: the association will be weaker at higher levels of trust, buffering the effects of insecure attachment.

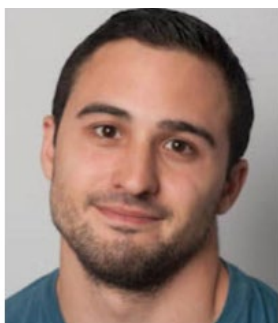
Methods: The study employs a prospective, longitudinal, quantitative design with data collection at three key time points: (1) pre-surgery, (2) 2–5 days post-surgery, and (3) six weeks post-discharge. These intervals were selected to capture the progression from acute medical intervention to early rehabilitation. The study includes 100 cognitively intact, Hebrew-speaking patients aged 65 and older, undergoing surgery for proximal hip fracture at a large tertiary hospital. Exclusion criteria include pathological fractures, midshaft and distal femoral fractures. Validated self-report questionnaires and medical records are used to assess emotional distress, attachment patterns, illness perceptions, functional status, and trust in healthcare providers.

Current Status: Data collection began in November 2024 and is ongoing. As of April 2025, 52 participants have completed all three waves of data collection. The current sample has a mean age of 81. Descriptive trends suggest high variability in recovery patterns, underscoring the relevance of individual psychosocial differences.

Expected Contribution: This study offers an integrative theoretical model grounded in Attachment Theory and the Self-Regulation Model, while extending the framework to include patient-physician trust and social support. It highlights the significance of combining objective physical outcomes with subjective emotional and cognitive indicators. Findings are expected to guide the development of tailored interventions for elderly patients recovering from HF surgery. Ultimately, this approach may enhance patient engagement, reduce hospital stays, improve adherence to medical recommendations, and inform multidisciplinary practices in geriatric orthopedic care.

Biography

Ola Abu Halawa holds a BA in Psychology and an MSW with high honors from Ben-Gurion University (2016), where her thesis focused on postpartum depression in women over 40. She is a certified trauma-focused psychotherapist (2021) and currently a third-year PhD student in Social Work at Bar-Ilan University. With over eight years of experience in healthcare and crisis intervention, she also supervises social work students and lectures at hospital-affiliated nursing schools. Her research focuses on aging, injury recovery, and the integration of psychological and social factors in health outcomes.



Darwin O*, Willmott H

Trauma & Orthopaedic Surgery, East Sussex Healthcare NHS Trust, Hastings, East Sussex, United Kingdom

A meta-analysis of proportions of single-arm studies comparing tibiototalcalcaneal nailing to open reduction & internal fixation in ankle fractures in the elderly

Introduction: Ankle fractures are a common injury in the elderly population. Due to osteoporosis, poor soft tissues, and frequent comorbidities, fixation is often challenging and carries high failure rates. Tibiototalcalcaneal nailing (TTC), also known as hindfoot nailing, has been used as an alternative to Open Reduction and Internal Fixation (ORIF), but few studies have directly compared outcomes between these two interventions.

Methods: A systematic literature search was performed from January 1990 to January 2025 for studies involving TTC or ORIF in patients over 50 years of age with ankle fractures requiring operative intervention utilising PRISMA guidelines. Outcomes included malunion/non-union, mortality, Surgical Site Infection (SSI), overall complication rate, re-operation rate, return to previous activity level, length of hospital stay, and Olerud and Molander (O&M) functional scores. As the studies included did not directly compare these interventions, meta-analysis of proportions for single-arm observational studies was performed in RStudios; proportional outcomes were logit-transformed, and continuous outcomes were pooled using random-effects models. Heterogeneity was assessed using the tau² and I² statistics.

Results: A total of 24 studies were included, consisting of 29,351 patients in the ORIF group, and 301 patients in the TTC group. TTC was associated with significantly higher mortality (25.7% vs 7.3%, $p < 0.001$), surgical site infection (11.9% vs 4.4%, $p < 0.001$), and overall complication rates (32.5% vs 6.4%, $p < 0.001$) compared to ORIF. Functional outcomes were better following ORIF (O&M score: 64.5 vs 50.1, $p = 0.037$). Although TTC patients had a longer length of hospital stay (pooled mean difference +2.50 days), the difference was not statistically significant ($p = 0.710$). Substantial heterogeneity ($I^2 > 80\%$) was observed across several outcomes.

Conclusion: Compared to ORIF, TTC nailing is associated with higher mortality, complication rates, and inferior functional outcomes. ORIF may be preferable when clinically feasible. Future prospective studies, particularly randomised controlled trials, are needed to further clarify optimal treatment strategies for ankle fractures in the elderly population.

Biography

Mr Darwin studied Medicine at the University of Nottingham and graduated in 2021. He completed his Foundation Training in the East Midlands, and then began his Orthopaedic-themed Core Surgical Training in the Kent, Surrey & Sussex deanery.



Omar Taha*, Husam Alaxir

Trauma and Orthopaedics department, Frimley Park Hospital, UK

Principles for antibiotic prophylaxis in joint replacement surgery

Surgical Site Infections (SSIs) remain one of the most serious complications of arthroplasty, associated with increased morbidity, mortality, prolonged hospitalisation, costly revision procedures, and long-term consequences for both patients and healthcare systems. Preventing SSI is therefore a key priority in orthopaedic surgery to safeguard outcomes and maintain the quality of care. Surgical antibiotic prophylaxis is a cornerstone of infection prevention in arthroplasty, although it is not a substitute for meticulous surgical technique or adherence to other essential perioperative measures. In the UK, the Getting It Right First Time (GIRFT) programme has recently issued updated guidance on antibiotic prophylaxis in joint replacement surgery, aiming to standardise practice, improve patient safety, and support antimicrobial stewardship. To evaluate local performance against these national standards, we conducted an audit of elective hip and knee arthroplasty cases at our institution, assessing compliance with the newly published GIRFT recommendations. Findings demonstrated areas of strong adherence alongside opportunities for improvement, highlighting the importance of regular review of perioperative protocols in line with evolving evidence and national guidance. By identifying gaps in practice and reinforcing best standards, this audit provides a platform for improving SSI prevention, ensuring consistent delivery of high-quality orthopaedic care, and contributing to the wider efforts to minimise antimicrobial resistance.

Biography

Omar Taha is a Clinical Fellow in Trauma and Orthopaedics at Frimley Park Hospital. He graduated from Tanta University, Egypt, and moved to the UK to pursue further specialization in orthopaedic surgery. Passionate about improving patient outcomes, he contributes to surgical practice, education, and ongoing departmental initiatives while keeping up with the latest advancements in musculoskeletal health. Outside of work, he enjoys cycling to maintain balance and well-being. He is committed to continuous development and making a positive impact in trauma and orthopaedic surgery.



**Omer Faruk Sevim^{1*}, Mehmet Süleyman Abul¹,
Muhammed Enes Karataş², Furkan Başak³**

¹Department of Orthopedics and Traumatology, Kartal Dr. Lütfi Kırdar City Hospital, Istanbul, Turkey

²Department of Orthopedics and Traumatology, Bartın State Hospital, Bartın, Turkey

³Department of Orthopedics and Traumatology, Ümraniye Training and Research Hospital, Istanbul, Turkey

Could it be *Brucella melitensis*? Recognizing and managing a rare pathogen in periprosthetic infections among patients from Anatolia

Brucella melitensis-associated Periprosthetic Joint Infections (PJIs) are a rare yet critical challenge, especially in endemic regions such as Anatolia. This presentation reviews a case series involving five patients treated at tertiary hospitals. Advanced diagnostics like prolonged culture incubation and serological testing confirmed the infections. Management varied from targeted antibiotics for stable implants to one- and two-stage revision surgeries for cases with implant loosening. All patients achieved infection eradication and excellent functional outcomes. The findings highlight the importance of clinical suspicion, advanced diagnostics, and multidisciplinary treatment approaches in managing these complex infections.

Biography

Dr. Omer Faruk Sevim graduated from Hacettepe University Medical School in 2019 and is currently a resident doctor in the Orthopedics and Traumatology Department at Kartal Dr. Lütfi Kırdar City Hospital, Istanbul. He has presented at international congresses, published multiple research articles in peer-reviewed journals, and has extensive training in advanced orthopedic techniques, including arthroscopy and trauma surgery.



Owen Mitchell*, Peter Ward

Trauma and Orthopaedics, Dorset County Hospital, Dorchester, Dorset, United Kingdom

Weight bearing status after peri-prosthetic proximal femur fracture or revision arthroplasty: A clinical audit

Background: Peri-Prosthetic Proximal Femur Fractures (PPFFs) are becoming increasingly common due to the rising number of Total Hip Arthroplasties (THAs) in ageing populations. These complex fractures often require either Open Reduction and Internal Fixation (ORIF) or revision arthroplasty. Post-operative Weight Bearing (WB) status plays a critical role in recovery, yet there is considerable variability in clinical practice.

Objectives: This audit aimed to evaluate the documentation and implementation of post-operative weight bearing protocols following ORIF or revision arthroplasty for PPFFs. It assessed adherence to best practice guidelines, reasons for deviations, and rates of fixation failure.

Methods: A retrospective audit was conducted at a UK District General Hospital between January 2023 and June 2024. Data was collected from the Hip Fracture Registry. Inclusion criteria were patients with closed PPFFs around THA or hemiarthroplasty; exclusions included fractures involving intra-medullary devices or knee prostheses. Patients were classified using the Vancouver classification (types A-C). Data points included fracture type, treatment modality, post-operative WB status, rationale for WB decision, and fixation outcomes.

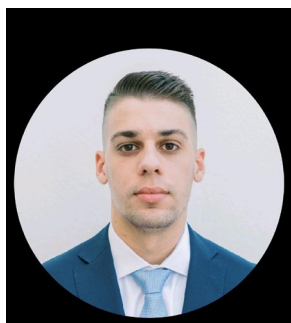
Results: Thirty-eight patients met the inclusion criteria: 4(10.5%) had type A fractures, 28(73.7%) type B, and 6(15.8%) type C. 28(73.7%) patients underwent surgical intervention (19 ORIF, 9 revision arthroplasty), while 10(26.3%) were managed conservatively. Of the surgical group, 22(78.6%) were mobilised as FWB, 4(14.3%) were Limited Weight Bearing (LWB), and 2(7.1%) were Non-Weight Bearing (NWB). LWB was most often attributed to intra-operative identification of poor bone stock; NWB was associated with medial calcar instability or metastatic involvement. Only 1(3%) patient experienced fixation failure, with conservative management adopted due to co-morbidities. A notable finding was the lack of detailed documentation for WB restrictions in LWB and NWB groups, which posed challenges for post-operative rehabilitation.

Conclusions: This audit demonstrates that while the majority of PPFF patients were managed in accordance with national guidance promoting early FWB, a significant proportion received restricted WB without adequate justification. The low rate of fixation failure supports the feasibility

of immediate FWB in appropriately selected patients. However, the absence of clear functional instructions in many cases highlights a need for improved communication and standardised documentation. Further multi-centre studies are required to establish robust, evidence-based post-operative protocols for this growing patient population.

Biography

Owen studied medicine at the University of Plymouth, UK and graduated with a BMBS and BSc (Hons) in 2021. He then started work at Dorset County Hospital, UK. After completing his foundation years, he started work as an Orthopaedic Educational Fellow in 2023 then subsequently as an Orthopaedic Clinical Fellow in 2024, both also at Dorset County Hospital.



Panagiotis Bompolas^{1*} MD, PGCert (Medical Education); Kian Daneshi^{2,3}; Wameth Alaa Jamel⁴ MBChB, MRCS (England); Ming Zien Yu⁵ MD; Yaqoob H. Al Saidi⁶ MB, BCh, BAO; Sina Dehnadi⁷ MD; Sreehari S. Pillai⁸; Ankur Khajuria⁹ MBBS (Dist.), PhD

¹Department of Trauma & Orthopaedic Surgery, Buckinghamshire Healthcare NHS Trust, Stoke Mandeville Hospital, Mandeville Rd, Aylesbury, Buckinghamshire, HP21 8AL, United Kingdom

²Department of Bioengineering, Imperial College London, United Kingdom

³School of Population Health and Medicine, University of Sheffield, Medical School, Beech Hill Rd, Sheffield, S10 2RX, United Kingdom

⁴Department of Plastic and Reconstructive Surgery, Al-Wasity Teaching Hospital, Baghdad Al-Russafa Health Directorate, 10069, Iraq

⁵School of Medical Sciences, University of Science Malaysia, Jalan Universiti, 11700 Gelugor, Pulau Pinang, Malaysia

⁶Ministry of Health-Oman, Suhar Hospital, Department of Neurosurgery, Oman

⁷James Paget University Hospital NHS Foundation Trust, Lowestoft Rd, Gorleston-on-Sea, Great Yarmouth, NR31 6LA, United Kingdom

⁸University College London Medical School, Gower St, London WC1E 6BT, United Kingdom

⁹Department of Surgery and Cancer, Imperial College London, Ayrton Rd, South Kensington, London SW7 5NH, United Kingdom

CONSORT compliance of randomised controlled trials in elective hand surgery: A systematic review

Purpose: The Consolidated Standards of Reporting Trials for Non-Pharmacological Treatments (CONSORT-NPT) guidelines were developed to improve the reporting quality of Randomised Controlled Trials (RCTs). Compliance of RCTs with these checklist criteria ensures transparency, reproducibility, bias minimisation and better application of results into clinical practice. Poor reporting of methodological details in RCTs hinders the reproducibility of study results and compromises the reliability of clinical recommendations. This systematic review evaluates the adherence of RCTs in the field of Elective Hand Surgery (EHS) to the latest updated CONSORT-NPT guidelines.

Methods: Following registration of this systematic review with PROSPERO (CRD42025630289), in January 2025, Cochrane, EMBASE, PubMed and WebOfScience were searched by two independent authors for RCTs in EHS, published since 2017. Relevant studies were identified and scored against each of the 42 CONSORT-NPT sub-criteria. Overall compliance to each sub-criterion and overall compliance of each RCT were calculated.

Results: A total of 58 RCTs met the inclusion criteria, with an overall mean CONSORT-NPT compliance of 66.1%. The highest-reported sub-criteria were scientific background and rationale and participant allocation details (100% each), whereas the lowest were attempts to limit bias without blinding (13.2%) and modifications to trial outcomes post-commencement (17.2%). The Methods section had the lowest compliance (55.7%). A weak but statistically significant correlation was found between the number of authors and reporting compliance ($p=0.0123$, $R^2=0.103$), while no significant relationship was observed between compliance and journal impact factor ($p=0.26$, $R^2=0.01$) or between compliance and number of citations per year ($p=0.1105$, $r=0.2112$).

Conclusions: Reporting quality of RCTs in elective hand surgery remains moderate, with critical gaps in methodological transparency. Stronger collaboration among researchers, journals, funding agencies, and guideline developers is necessary to enhance adherence and ensure high-quality evidence in clinical practice.

Funding: None.

Conflict of Interest: None declared.

Keywords: Compliance, CONSORT, Hand Surgery, Randomised Controlled Trial, Reporting Quality.

Biography

Dr. Panagiotis Bompolas studied Medicine at University of Patras, Greece and graduated with an M.D. in 2022. He is currently working as a Trauma & Orthopaedics CT1 in Buckinghamshire Healthcare NHS Trust and has completed a Post-Graduate Certificate in Medical Education at the University of Warwick. He is a High Yield UK Research Fellow and serves as the Block Supervisor of Year 4 and Year 6 medical students of University of Oxford for their surgical rotations at Buckinghamshire Healthcare NHS Trust.



Panida Poolpipat*, Rachawan Suksathien

Department of Rehabilitation Medicine, Maharat Nakhon Ratchasima Hospital,
Nakhon Ratchasima, Thailand

Resolution of bigeminy PVCs and desaturation following cardiac rehabilitation in alcoholic cardiomyopathy and heart failure: A case report

Background and Aim: Patients with Non-Ischemic Cardiomyopathy (NICM), Atrial Fibrillation (AF), and Congestive Heart Failure (CHF) often experience reduced exercise tolerance and impaired quality of life. Premature Ventricular Complexes (PVCs) and oxygen desaturation are frequently observed during exercise testing. Exercise-Induced Premature Ventricular Contractions (EI-PVCs) are correlated with a higher risk of all-cause death or cardiovascular events in the long term. Patients with heart failure who had large desaturation during exercise and a short 6-minute walk distance have the highest incidence of major adverse cardiovascular events, including rehospitalization for heart failure or cardiovascular death. However, there are few reports on improved exercise tolerance and cardiac arrhythmia after cardiac rehabilitation.

Methods: A 50-year-old male with a history of alcoholic cardiomyopathy (ejection fraction 21%), non-valvular AF, and congestive heart failure was in an outpatient cardiac rehabilitation program.

Result: His initial 6-minute walk test (6MWT) distance was 310 m, with exercise-induced desaturation (SpO_2 93–94%) without EKG monitoring. Second, visit continuous bigeminy PVCs on ECG and SpO_2 94–95% during 6MWT. He started with short-duration walking (5–10 min) and gradually progressed to 30 minutes of continuous exercise. He was followed up and received an update on his Individualized Treatment Plan (ITP) once a month for five visits. After progressive exercise training, his exercise tolerance improved, with a 6-Minute Walk Test (6MWT) distance increasing from 310 m to 430 m. The patient's left ventricular ejection fraction improved significantly from 21% to 54%. Bigeminy PVCs progressively decreased and were absent by the final visit. Oxygen desaturation was resolved, with SpO_2 stabilizing at 98% post-exercise. The patient tolerated moderate-intensity jogging for 30 minutes without significant arrhythmia.

Discussion: The 6MWT is a valuable and widely used tool for assessing exercise tolerance and functional status in patients with heart failure. In this case, the initial Six-Minute Walk Test (6MWT) revealed exercise-induced desaturation. To ensure patient safety, he was instructed to reduce his walking speed to a normal pace, which led to an improvement in SpO_2 to 95%. Although the instructor may terminate testing based on the appearance of the patient or if oxygen saturation falls <80%, a threshold commonly applied in patients with COPD who often have

a lower baseline oxygen level. The specific termination criteria for exercise testing in patients with heart conditions remain undefined; oxygen desaturation during the 6MWT warrants careful consideration.

In a hospital setting, the Six-Minute Walk Test (6MWT) is not only used to assess functional capacity but also helps guide the prescription of appropriate exercise intensity and duration. This allows for the development of a safe and individualized home-based exercise program. Systematic reviews have demonstrated that Home-Based Cardiac Rehabilitation (HBCR) is a safe and effective approach, while also facilitating continued follow-up by making treatment more accessible and less burdensome for patients.

Conclusion: Cardiac rehabilitation contributed to the resolution of exercise-induced bigeminy PVCs and desaturation in this patient. The progressive approach, which included warm-up, gradual intensity adjustment, and monitoring of ECG changes, contributed to patient safety and enhanced cardiovascular function in high-risk cardiac patients.

Biography

Panida Poolpipat graduated with a Doctor of Medicine degree from Mahidol University in 2015 and completed the Thai Board of Physical Medicine and Rehabilitation in 2021. She co-founded the cardiac rehabilitation program at Maharat Nakhon Ratchasima Hospital, which has been operating for four years. Currently, she serves as a teaching physician involved in the training of rehabilitation medicine residents at Maharat Nakhon Ratchasima Hospital, Thailand.



Pradeep Deshpande

Hull University Teaching Hospitals, Hull, United Kingdom

Setting up a TBI outpatient clinic

A clinic was set up to provide advice to mild TBI patients discharged to community there was a rehab physician and he had access to psychologist. The importance of clinical psychology is to support to assess and address both the neuropsychological and psychological consequences of major trauma injuries at both acute and non-acute stages of a patient's recovery is considered a requirement of provision.

Referrals were generated via two routes;

Route 1- MT patients seen by clinical psychology during their inpatient admission who require follow up input or patients referred whilst inpatients but not seen prior to discharge home. These patients were sent an opt in letter four weeks post discharge offering them the opportunity to opt in for further psychology input if they feel this is still required. Opting in patients will call psychology admin to request to be put on the waiting list.

Route 2- Consultants in the trust who are following up major trauma patients, were able to refer to this clinic. Psychological screening measures will be provided to appropriate consultants for use in their clinics, to support referrals through to psychology.

20 referrals were received with mild traumatic brain injury who needed psychology support. Majority were males 17, and most common diagnosis on scan was acute subdural haematoma. All attended the telephone clinic, only 1 was uncontactable. 9 people returned successfully to driving, and 5 returned to work. The average age of patients was 47 years. Most patients 15/20 were managed conservatively by neurosurgeons.

This shows how a successful collaboration works in patients with brain injury, already discharged in community.

Biography

Dr Pradeep Deshpande is a consultant in rehabilitation medicine with special interest in traumatic brain injury and spasticity management using botulinum toxin, and has experience of 24 years in that field. He has presented and published in international conferences and reputed journals.

**Pradeep Deshpande*, Vishal Mehta, Sandhya Jose**

Hull University Teaching Hospitals NHS trust, Hull, United Kingdom

Setting up of a pediatrics complex neuro-disability transition service

Experience of a multidisciplinary virtual pediatric complex neuro-disability clinic that was set up to ensure smooth transfer of clinical care of young people with complex needs using a multidisciplinary model. How to establish a multidisciplinary interdisciplinary service using the expertise of various clinicians in designing a clinic that will ensure smooth transition of care for people with complex neuro-disability from age of 16 to 18 years.

Biography

Pradeep Deshpande has worked as a consultant over 20 years in UK, has published papers in International Conferences and written articles in journals. He has experience of working as specialist in management of post stroke spasticity.



Dr. Pramod Lamichhane*, Dr. Anil Bhattra, Dr. Santosh Kuwar

Alive Hospital, Trauma Centre, Bharatpur, Chitwan

Controversies in orthopaedics, tips tricks and solution

Controversies persist everywhere and so do in orthopaedics. From the beginning of modern orthopaedics, there are controversies in timing of surgery, method of fixation and rehabilitation in certain types of injuries like in multiple trauma, open fractures and fractures with huge swelling. Basic principles of management remaining the same, treatment protocol or modality of treatment depends on the personality of the patient, injury pattern and resources available. Here we simplify and narrate the treatment protocol that we follow for such injuries with case series and examples. From July 2011 to Dec 2022 we operated 13084 orthopaedic cases, 9508 male and 3576 female. All the cases were operated within six hours of presentation to the hospital. Primary definitive internal fixation was done up to GIIIA. External or internal fixation was done in GIIIB cases depending on the nature of injury, personality of fracture and the patient. All the fractures united. There were less number of surgeries, less morbidity and they were with good results.

Keywords: Controversies, Orthopaedics, Solutions, Tips and Tricks.

Biography

Dr. Pramod Lamichhane is a Senior Orthopaedic Surgeon and head of Department of Orthopaedics and the chairperson of Alive Hospital and Trauma Centre. He earned his MBBS and Masters in Orthopaedics degree at the Kathmandu University from 2000- 2009. Dr. Lamichhane worked with Professor Ashok Kumar Banskota at B & B hospital, a busy renowned trauma centre at Kathmandu, Nepal 150 kilometers south west of Kathmandu. His sound knowledge in trauma developed the system of prompt treatment of trauma victims, especially open injuries with excellent results and he was awarded as the best young Orthopaedic Surgeons in 2nd Nepal Japan Annual Orthopaedic Symposium in 2013. He is also sound in Spine surgeries, Paediatric orthopaedics and in rehabilitation of physically disabled persons. He has been organizing national and international CME and workshops regularly. He is also a senior Vice President of Nepal Orthopaedic Association, Chitwan chapter and life member of Asia Pacific Orthopaedic Association.



Pramod Lamichhane

Alive Hospital & Trauma Centre, Bharatpur, Chitwan

Complex orthopaedic trauma, our experience of management

With the advancement of modernization, number of complex trauma along with devastating open fractures and vascular injuries are also increasing. The pattern of trauma is changing from low velocity injury to high velocity injury with time, giving rise to complications like ARDS, FES, multiple organ dysfunction, infection, nonunion, delayed union and prolonged morbidity. Every injury is different and there may not be clear guideline for management of such complex injuries. Every individual should be treated differently. These sorts of injury, in fact, is escalating the time and cost of treatment with prolonged psychological, physiological and social impairment to the family and patient. To overcome or address these problems, it requires a dedicated team, prompt management and dedication. Here we like to share our experience of management of such injuries for the last thirteen years with promising results.

Keywords: Complex, Trauma, Challenge, Management.

Biography

Dr. Pramod Lamichhane is a Senior Orthopaedic Surgeon and head of Department of Orthopaedics and the chairperson of Alive Hospital and Trauma Centre. He earned his MBBS and Masters in Orthopaedics degree at the Kathmandu University from 2000- 2009. Dr. Lamichhane worked with Professor Ashok Kumar Banskota at B & B hospital, a busy renowned trauma centre at Kathmandu, Nepal 150 kilometers south west of Kathmandu. His sound knowledge in trauma developed the system of prompt treatment of trauma victims, especially open injuries with excellent results and he was awarded as the best young Orthopaedic Surgeons in 2nd Nepal Japan Annual Orthopaedic Symposium in 2013. He is also sound in Spine surgeries, Paediatric orthopaedics and in rehabilitation of physically disabled persons. He has been organizing national and international CME and workshops regularly. He is also a senior Vice President of Nepal Orthopaedic Association, Chitwan chapter and life member of Asia Pacific Orthopaedic Association. Also, he was the first author of the book 'Orthopaedics' Practice in Nepal, Controversies, Tips Tricks and Solution.



Prashant Awasthi

William Harvey Hospital, United Kingdom

Why are patients without identifiable etiology of failure dissatisfied following total knee arthroplasty: A systematic review and meta-analysis

Patient satisfaction following primary Total Knee Arthroplasty (TKA) is of great importance to practitioners, and as many as one in five patients report postoperative dissatisfaction. The purpose of this study was to assess patient-specific factors that may have a correlation with being unsatisfied following primary TKA. A comprehensive literature review of four electronic databases was considered for inclusion in this meta-analysis. Upon review, 12 studies were included for analysis. Patient-specific factors for dissatisfaction without failure etiology were evaluated. The final cohort consisted of 27,496 patients who underwent primary TKA, and 2,815 (10.2%) were dissatisfied with their TKA. There was an association found between dissatisfaction and mild osteoarthritis (Relative Ratio [RR]: 1.86; 95% Confidence Interval [CI]: 1.41-2.45; $p=0.0001$), female gender (RR: 1.06; 95% CI: 1.02-1.10; $p=0.004$), and a diagnosis of depression and/or anxiety (RR: 1.46; 95% CI: 1.30-1.64; $p=0.0001$). There was substantial heterogeneity among the studies. Those who may be at higher risk for dissatisfaction include those with mild arthritis, female gender, and depression/anxiety. Future research should focus on the role of any preoperative interventions and possible surgery-specific factors that may increase the chances of patient satisfaction.

Biography

Mr. Awasthi graduated from Southern Medical University in China in 2019 and is currently working as a core surgical trainee in Trauma and Orthopaedics in William Harvey Hospital, Ashford, UK.



Prashant Awasthi

Trauma and Orthopaedics, William Harvey Hospital, Ashford, UK

Why do primary total hip arthroplasties fail in patients under 65 years of age? A systematic review and meta-analysis

Background: Primary Total Hip Arthroplasties (THAs) are increasing among patients younger than 65 years of age. Hence, there is a need to elucidate implant survivorship and etiologies of revision THA. The purpose of this systematic review was to identify: (1) implant survivorship; and (2) the most common etiologies for failure of primary THA in patients younger than 65 years of age.

Methods: A comprehensive search of four major databases was performed. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines were followed in selecting studies, data extraction, and analysis. There were 11 studies selected from a total of 574 studies from searches.

Results: There was a revision rate of 4.5% ($n=2,811$ revisions) with substantial publication bias ($P=0.03$) and heterogeneity among studies ($I^2=88\%$; $P=0.0001$). The implant survivorships at 5, 10, and 15 years were 96% ($n=59,440$), 92% ($n=1,338$), and 84% ($n=788$ hips), respectively. The most common etiology for revision was infection with no publication bias ($P=0.6$) and substantial heterogeneity ($I^2=99\%$; $P=0.0001$).

Conclusions: This review showed high implant survivorships up to 15 years in patients younger than 65 years of age. There are multiple confounders that were not controlled for in this study, and future studies should focus on evaluating patient- and surgery-specific factors that could influence implant survivorship.

Biography

Mr. Awasthi graduated from Southern Medical University in China in 2019 and is currently working as a core surgical trainee in Trauma and Orthopaedics in William Harvey Hospital, Ashford, UK.



Mr Vijay Patil¹, Mr. Praveen Rajan^{2*}, Mr. Sean Symons²

¹Northern Care Alliance, NHS Fund Trust, Royal Oldham Hospital, UK

²Basildon University Hospital, Essex, UK

Growth disturbances following paediatric anterior cruciate ligament reconstruction: A systematic review

Growth disturbances after transphyseal paediatric Anterior Cruciate Ligament (ACL) reconstruction have led to the development of physeal-sparing techniques. The aim of this study is to investigate growth disturbances following paediatric ACL reconstruction and identify associated risk factors. A systematic search on PubMed, Scopus and Web of Science databases was conducted using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to identify case series reporting paediatric ACL reconstructions. Of 518 articles, 78 met the inclusion criteria, and data related to growth disturbances and graft failures were extracted. A total of 2,693 paediatric ACL reconstructions resulted in 70 growth disturbances (2.6%): 17 were varus, 26 were valgus, 13 were shortening, 14 were lengthening and five patients had reduced tibial slope. Some patients showed deformities in more than one plane. Coronal plane deformities were seen more frequently with eccentric physeal arrest and lengthening with intraepiphyseal tunnelling. Shortening and reduced tibial slope were related to large central physeal arrest and anterior tibial physeal arrest, respectively. Sixty-two studies documented 166 graft failures in 2,120 reconstructions (7.8%). The extraphyseal technique was least likely to result in growth disturbances and graft failure. Paediatric ACL reconstruction is a safe and effective treatment of rupture. Growth disturbances are least likely following extraphyseal tunnelling, and those resulting from transphyseal techniques can be minimised by reducing drill size, drilling steep and avoiding the physeal periphery. The insertion of hardware, synthetic material, or a bone plug through the drilled physis should be avoided. There is a greater need for robust long-term data collection, such as national ligament registries, to standardise practice and evaluate the risk of growth disturbance and re-ruptures in this treatment.

Biography

Dr. Praveen Rajan completed his Postgraduate Diploma in Orthopedics from Manipal University in 2007 and earned his MS Orthopedics from DY Patil Institution, Mumbai in 2009. He achieved FRCS in Trauma and Orthopedics in 2018. He previously served as a Consultant Orthopedic Surgeon at the Muthoot Group of Hospitals in India. Currently, he works at Basildon University Hospital, UK. He is actively involved in orthopedic research with international publications. He also led the UK-FATE national audit and contributes regularly to teaching and quality improvement.



Mr. Praveen Rajan^{1*}, Mr Vijay Patil², Mr. Dimitrios³

¹Basildon University Hospital, Essex, UK

²Northern Care Alliance, NHS Fund Trust, Royal Oldham Hospital, UK

³Tsekes Kings Oak Hospital Essex, UK

Management of olecranon fractures in the elderly – Literature review and proposal of a treatment algorithm

Olecranon fractures in the elderly pose unique challenges, especially the displaced fractures due to associated comorbidities, poor tissue quality, higher complication risks and the need for implant removal. Treatment options range from non-operative to various surgical fixation techniques. Currently there is no consensus on the treatment of these fractures in the elderly. We reviewed the literature, according to PRISMA guidelines, using PubMed, Wiley Online Cochrane Library, Scopus and Embase. Papers looking at patients older than 60 years of age and all modalities of treatment were included, and study titles and abstracts were studied.

We found 14 studies which fulfilled our criteria, totaling 271 patients. Of these patients, 112 were treated non-operatively, 29 within limited fixation, 105 with metallic tension band wire fixation and 25 were operated with plate fixation. We found that non-operative as well as limited fixation provided satisfactory results in most patients, depending on the type of fracture. Despite various treatment options available, the decision to treat should therefore be individualized to various factors such as – fracture stability, quality of bone & soft tissues as well as functional demand of the patient. Hence, we recommend a treatment protocol for treating different types of olecranon fractures in the elderly population based on the above factors.

Biography

Dr. Praveen Rajan completed his Postgraduate Diploma in Orthopedics from Manipal University in 2007 and earned his MS Orthopedics from DY Patil Institution, Mumbai in 2009. He achieved FRCS in Trauma and Orthopedics in 2018. He previously served as a Consultant Orthopedic Surgeon at the Muthoot Group of Hospitals in India. Currently, he works at Basildon University Hospital, UK. He is actively involved in orthopedic research with international publications. He also led the UK-FATE national audit and contributes regularly to teaching and quality improvement.



Priya Parekh^{1*}, Sehar Farooq², Abdal Zafar³, Fouad Aziz⁴, Mark Hanna⁵, Muhammad Noor⁶, Edwin Wong⁷, Bijan Yazdanian⁸, Nadia Taha⁹, Hasheef Akram Sirajudeen¹⁰, Paul Koroma¹¹, Ikenna Ugochukwu¹², Francis Irem-Oko¹², Alexandros Papadopoulos¹³

¹Trauma and Orthopaedics, Wirral University Teaching Hospital NHS Foundation Trust, Wirral, United Kingdom

²Trauma and Orthopaedics, Royal Free London NHS Foundation Trust, London, United Kingdom

³Trauma and Orthopaedics, Whittington Health NHS Trust, London, United Kingdom

⁴Trauma and Orthopaedics, Gateshead Health NHS Foundation Trust, Gateshead, United Kingdom

⁵Trauma and Orthopaedics, South Eastern Health and Social Care Trust, Dundonald, United Kingdom

⁶Respiratory Medicine, Countess of Chester Hospital NHS Foundation Trust, Chester, United Kingdom

⁷Trauma and Orthopaedics, University College London Hospitals NHS Foundation Trust, London, United Kingdom

⁸General Medicine, Blackpool Teaching Hospital NHS Foundation Trust, Blackpool, United Kingdom

⁹Plastic Surgery, Leeds Teaching Hospitals NHS Trust, United Kingdom

¹⁰Trauma and Orthopaedics, Surrey and Sussex Healthcare NHS Trust, Redhill, United Kingdom

¹¹Mid Yorkshire Teaching NHS Trust, Wakefield, United Kingdom

¹²Trauma and Orthopaedics, Leeds Teaching Hospitals NHS Trust, United Kingdom

¹³Trauma and Orthopaedics, Hull University Teaching Hospitals NHS Trust, United Kingdom

Suzuki frame fixation in proximal interphalangeal joint fractures: Systematic review and meta-analysis

Background: The Suzuki frame is a commonly used dynamic external fixation system used to manage complex intra-articular fractures of digits, particularly in Proximal Interphalangeal Joint (PIPJ) injuries. This technique utilises Kirschner wires and elastic rubber bands to create controlled traction, whilst permitting fracture reduction and early mobilisation following injury. These factors provide superior stabilisation of fracture fragments than other techniques such as buddy taping and casting, is less invasive than open reduction and internal fixation and avoids long-term complications from retained metalwork. We present the first systematic review and meta-analysis that studies the postoperative function of patients treated with Suzuki frame fixation and measures rates of complications.

Methods: A meta-analysis was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies that assessed the functional or clinical outcome of the Suzuki frame in the management of intra-articular PIPJ fractures of the index, middle, ring and little fingers were included. There was no restriction on age, sex, comorbidities, acuity of injury or fracture pattern. Open Meta[Analyst] software was used to conduct data synthesis and generate forest plots reported at 95% Confidence Intervals (CI). Functional parameters were comprised of PIPJ flexion, extension, overall range of motion, percentage grip strength and Disabilities of the Arm, Shoulder and Hand score. In addition, the range of motion was compared between patients in which the Suzuki frame was applied either within 7 days of injury or after.

Results: 22 studies involving 332 fractures were included from 161 articles. Functional outcomes following Suzuki frame application showed mean range of motion of 83.0 degrees (CI 76.6-89.4, $p<0.001$), mean flexion of 87.2 degrees (CI 83.8-90.7, $p<0.001$), mean extension 7.5 degrees (CI 5.0-10.0, $p<0.001$), percentage grip strength 91.7 % (CI 90.1-93.4, $p<0.001$) and Disabilities of the Arm, Shoulder and Hand score of 3.7 (CI 2.6-4.7, $p<0.001$). There was no significant difference in range of motion between application of the Suzuki frame before or after 7-days of injury (mean ROM 20.4 degrees, CI-20.0-60.8, $p=0.0322$). Documented complications included clinodactyly, arthritis, pin-site infection, reduced joint mobility, pin-site loosening, osteomyelitis and complex regional pain syndrome.

Conclusion: Suzuki frame fixation of PIPJ injuries enable satisfactory functional outcomes with an acceptable rate of complications. Additionally, there was no significant difference in final range of motion when treatment was initiated within or beyond seven days post-injury. Our study was solely based on cohort data. In the future, high-quality randomised controlled trials with extended follow-up periods and standardised outcome measures are warranted to better define the role of Suzuki frame fixation and compare its efficacy against alternative techniques.

Biography

Miss Priya Parekh (MBBS BSc PgCert (MedEd) FHEA MRCS) studied Medicine at King's College London in 2014. During this time, she developed research experience with a Bachelor of Science in Nutrition and was predominantly involved in a randomised controlled trial, the Glu-Pomme Study. During clinical practice, she has been highly involved in medical education and trauma and orthopaedics and has supplemented her experience in these fields with peer-reviewed articles and international presentations. She currently works as a Trauma and Orthopaedic Registrar.



Daniel E. Onobun, Rahim Hussain*, Gerald Lim, Ethel O. Ojo, Chijioke Orji, Althea O. George, Ajibola A. Adebisi

South Warwickshire Foundation Trust, United Kingdom

Evaluating surgical strategies for adolescent idiopathic scoliosis: A meta-analysis of posterior spinal fusion and vertebral body tethering

Introduction: Adolescent Idiopathic Scoliosis (AIS) is a complex three-dimensional spinal deformity affecting adolescents worldwide, often necessitating surgical correction in progressive or severe cases. Posterior Spinal Fusion (PSF) has long been the gold standard, providing reliable curve correction at the cost of spinal mobility. In contrast, Vertebral Body Tethering (VBT) is a motion-preserving technique aimed at growth modulation, appealing particularly to skeletally immature patients. However, concerns about revision rates and long-term outcomes remain. This meta-analysis aims to compare PSF and VBT in terms of curve correction, complication and revision rates, functional outcomes, and patient satisfaction, offering evidence-based insights into the optimal surgical approach for AIS.

Methods: A systematic review and meta-analysis were conducted following PRISMA 2020 and QUORUM guidelines. Eight studies met the inclusion criteria, encompassing randomized controlled trials, cohort studies, and retrospective analyses with a minimum of two years' follow-up. A comprehensive database search included PubMed, Scopus, Cochrane Library, and Google Scholar. Outcomes analyzed included degree of spinal curve correction, postoperative complications, revision surgeries, and patient-centered measures such as functional outcomes and SRS-22 scores. Continuous variables were analyzed using Welch's t-tests and Wilcoxon rank-sum tests. Heterogeneity was assessed using the I^2 statistic, and publication bias was evaluated through funnel plots and Egger's test.

Results: Across all studies, PSF showed significantly superior mean curve correction (79°) compared to VBT (51° ; $p=0.0117$). Revision and complication rates were also lower in the PSF group (17%) relative to VBT (27.8%). While VBT preserved spinal motion and offered improved postoperative functional recovery and flexibility, it demonstrated higher variability in outcomes and a greater risk of tether breakage and overcorrection. SRS-22 scores reflected these trends: VBT patients reported higher functional mobility and earlier return to activity, whereas PSF patients had higher and more consistent satisfaction levels. Statistical analyses confirmed significant differences in revision ($p=0.0211$), complications ($p=0.0225$), and patient satisfaction ($p=0.0188$). No significant heterogeneity was detected ($I^2=0\%$), enhancing the reliability of pooled outcomes.

Conclusion: PSF remains the more robust and consistent surgical intervention for AIS, providing superior radiographic correction and fewer postoperative complications. However, the motion-sparing benefits of VBT make it a compelling alternative for skeletally immature patients prioritizing mobility and growth preservation. While PSF ensures structural stability, VBT offers functional advantages at the cost of increased revision risk. Surgical decision-making should therefore be individualized, balancing curve severity, patient age, skeletal maturity, and long-term functional goals. Continued research is warranted to refine patient selection and improve long-term VBT outcomes.

Biography

Mr. Rahim Hussain graduated from Cardiff University in 2020 and completed his foundation programme in the West Midlands South Deanery. After which he worked as a clinical teaching fellow at Worcester Acute Hospitals NHS trust. During this time, he successfully completed his postgraduate certification in medical education. He has recently completed his core surgical training in the West Midlands deanery and has completed his MRCS during this time as well. Mr. Rahim Hussain has an interest in pursuing higher surgical training in Trauma and Orthopaedics.



Rama Jha*, Umar Daniyal, Nagaraj Prasanth, Peter Peev

London North West Hospital Trust, London, United Kingdom

Improving Weight Bearing Status (WBS) documentation compliance as per British Orthopaedic Association (BOA) guidelines in a North West London district general hospital: A 2-cycle closed-loop audit

Background: Weight Bearing Status (WBS) is a core pillar in orthopaedic practice, crucial for patient recovery. Despite updated British Orthopaedic Association (BOA) guidelines, WBS documentation has been historically poor, impacting patient care and timely discharges.

Aim: This audit aimed to improve the recording rate and documentation compliance of WBS at a District General Hospital (DGH) in North West London.

Methods: We carried out a 2-cycle closed-loop prospective audit on the WBS documentation within our Trauma & Orthopaedic (T&O) department. The electronic notes of T&O inpatients were collected in the first cycle (September–December 2024) and analysed against the BOA guidelines, including WBS recording rates, documentation timing and BOA-recommended term utilisation. These findings were shared at our daily Trauma Meeting over a 2-week period as part of the intervention. Subsequently, a second data collection cycle was conducted (May–July 2025) to re-review for compliance, and the subsequent interventions for Cycle 2 included: posters in doctors' office, regular Occupational Therapy (OT) and Physiotherapy (PT) involvement, ongoing reinforcement in trauma meetings and the introduction of a dedicated WBS documentation proforma.

Results: 50 patients with both upper and lower limb fractures were included in both cycles. Cycle 1: although 66% (n=33) had a WBS recorded, only 36% (n=12) used the BOA-recommended terms. Post- intervention, the former increased to 74% (n=37), with just under half using the recommended WBS terms (46%). However, documentation often occurred late in admission (e.g., post-operatively). In Cycle 2, we initially found the WBS documentation compliance slightly dipped (60%) pre-intervention, compared to December. However, following the second cycle intervention, significant improvement was demonstrated: WBS was recorded for 90% (n=45) of patients, and crucially, adherence to BOA-recommended terms also dramatically increased to 93% (n=42; overall adherence 84%), with documentation starting to be recorded from admission clerking. This highlights a substantial positive change in compliance over the two cycles.

Conclusion: Both cycles showed progressive improvement in WBS documentation compliance and BOA-recommended term adherence. Cycle 2, with its multi-faceted interventions, yielded significantly enhanced rates. While challenges with earlier documentation may persist, this audit demonstrates the positive impact of targeted efforts. Given the initial slight decline in compliance between both cycles however, our next step is to embed the WBS proforma and relevant information into resident doctors' induction workbooks for new rotations, aiming to further improve adherence and early documentation across the trust.

Biography

Dr. Rama Jha is a Foundation Year 1 Resident Doctor at the London North West Hospital (LNWH) Trust having recently graduated from Imperial College London with a First Class Honours BSc in Medical Sciences with Anaesthetic and Critical Care. She has recently completed jobs in Trauma & Orthopaedics (including General Surgery), Cardiology and Urology, and has a special interest in research, having published within research groups and presented at national and international conferences, with the goal of pursuing an academic career.



Rida Lakho^{1*}, Dr. Mattia Loppini²

¹Humanitas Univeristy, Milan Italy, final year medical student

²Associate professor at Humanitas University and Orthopedic and trauma specialist

A retrospective cohort study of postoperative complications in Mako robot arm-assisted and conventional knee arthroplasty

Background: Robotic-assisted Total Knee Arthroplasty (TKA) has gained popularity as a precision-driven alternative to conventional TKA, with purported benefits in alignment accuracy and tissue preservation. However, its impact on early postoperative complications and functional outcomes remains under critical evaluation. This retrospective cohort study aimed to compare short-term clinical, laboratory, and functional outcomes between patients receiving Mako robotic-arm assisted TKA and those undergoing conventional TKA.

Methods: A total of 140 patients (70 per group) undergoing unilateral TKA between January 2021 and December 2023 at Humanitas IRCCS, Rozzano, Italy, were analyzed. Functional outcomes were assessed using the Tegner-Lysholm Knee Scoring Scale (TLKSS) at one and six months postoperatively. Secondary variables included Range of Motion (ROM), Numeric Rating Scale (NRS) for pain, C-Reactive Protein (CRP) levels, hemoglobin concentration on postoperative day 3, and postoperative complications such as swelling and infection. Independent-samples t-tests, ANOVA, chi-square tests, and multiple regression analyses—including Lasso and Ridge regression—were employed. Machine learning regression models were also used to determine key predictors of functional outcomes.

Results: The Mako group demonstrated higher TLKSS scores (mean=87.9±11.2) compared to the conventional group (mean=83.5±13.4; $p=0.04$ after multivariate adjustment). ROM was also greater in the robotic group ($106.3^{\circ}\pm 12.5^{\circ}$ vs. $101.7^{\circ}\pm 14.8^{\circ}$), with statistical significance achieved in regression analysis ($\beta=0.21$, $p=0.036$). CRP levels were significantly lower in the robotic group (mean=7.3±3.5 mg/dL) than the conventional group (9.6±4.2 mg/dL; $p=0.017$). Hemoglobin levels showed no significant difference (Mako=11.1±1.3 g/dL, Conventional=10.7±1.5 g/dL; $p=0.12$). Swelling occurred in 21.4% of Mako patients vs. 38.6% in conventional patients ($p=0.035$). Infection rates were lower in the Mako group (6.3% vs. 10.5%), though not statistically significant ($p=0.18$). Lasso regression identified swelling, infection, and CRP as the strongest negative predictors of TLKSS, while ROM was positively associated. The Ridge model achieved the best fit ($R^2=0.61$).

Conclusion: Robotic-assisted TKA using the Mako system is associated with improved short-term functional outcomes and reduced postoperative inflammation and swelling. While not a dominant predictor in isolation, robotic technique amplifies recovery benefits when.

Biography

Rida Lakho is a final year medical student at Humanitas University in Milan, Italy. She is an incoming Foundation year 1 doctor at Watford general Hospital in Watford, Hertfordshire. She has been passionate about orthopedics and arthroplasty surgeries since her third year of medical school. She also has deep-seated passion for research on orthopedics, particularly in arthroplasty interventions of the hip, knee and shoulder with a dedication to improve patient care and surgical outcomes. In this journey, she has undertaken electives in both United Kingdom and Italy to enhance her knowledge and understanding in the field of orthopedics.



Prof. Ron Shor

The Hebrew University of Jerusalem, Israel

Ways to promote the inclusion of students with mental illness in universities

Objectives: The inclusion of persons with Severe Mental Illness (SMI) in universities has become a focus of policy initiatives and an opportunity to promote their recovery. However, there is limited knowledge about the actual experiences of students with SMI in social and academic inclusion. Social inclusion involves integrating students with SMI with other students, while academic inclusion pertains to their active participation in academic activities and studies.

Methods: A qualitative study was conducted with 80 students with SMI participating in Supported Education programs at major universities in Israel. The students responded to open-ended questions about the barriers and difficulties they faced in advancing their social and academic inclusion, their experiences of success, and what helped them overcome these challenges.

Results: The findings highlight obstacles to academic inclusion, mainly caused by the effects of mental illness, and barriers to social inclusion, which also arise from how students in universities view students with mental health issues. The emotional support provided by mentors in Supported Education programs played a crucial role in assisting students with these challenges. They particularly valued the personalized relationships and the safe environment these mentors offered. However, they also noted that support during individual meetings might not be enough to address external barriers like stigma.

Conclusions: The findings highlight the crucial role of individual support from mentors in addressing inclusion challenges. However, such support alone is not enough to ensure that studies of students with SMI will necessarily lead to feelings of social inclusion and integration. Therefore, the social and academic inclusion of students with SMI must be addressed at a broader systemic level, such as through a whole campus strategy to overcome these challenges.

Biography

Prof. Ron Shor is a researcher in the field of psychiatric rehabilitation. His research primarily focuses on services that promote the rehabilitation of individuals with mental illness, as well as studies about family caregivers of persons with mental illness.



Roger H. Coletti MD

Interventional Health, PA, Lewes, DE, USA

EMG guided chemodenervation for post-laminectomy syndrome and rotator cuff repair

Post-laminectomy syndrome is reported to range from 20 to 60%. The etiology of post-laminectomy syndrome is stated to be variable but multiple treatment modalities focus on nerve blocks or nerve ablation. Patients requiring a laminectomy procedure commonly have secondary chronic muscle spasms which are likely to persist despite a successful surgical procedure. Relief of the secondary chronic spasm and pain will lead to an increased overall success rate for the surgical procedure. It has been demonstrated that the CMECD[®] procedure that makes use of EMG guidance and the off-label use of phenoxylbenzamine successfully resolves chronic muscle spasm and resulting chronic pain with a single procedure. An additional use of the CMECD[®] procedure is presurgical such as in the case of rotator cuff injury with retraction of the muscle. A case report will be described where the retracted muscle was treated with the CMECD[®] procedure allowing the surgeon to perform a more successful repair than would have been possible without the pretreatment. The procedure consists of identifying sites of Spontaneous Electrical Activity (SEA) in the muscle which correspond to areas of chronic ischemia secondary to unresolved chronic muscle spasm. The injectate includes Lidocaine and dexamethasone to mitigate short-term and medium-term discomfort from the procedure. Lidocaine also immediately resolves the SEA allowing mapping of the areas successfully treated which facilitates identification of areas yet needing to be treated. Pain resolution is immediate allowing the treated individual to try various movements to illicit other adjacent or distal sites of pain. Local discomfort at the sites of injection may persist for up to one week but typically lasts 3-4 days. Phenoxylbenzamine creates a covalent bond on the alpha-adrenergic receptor resulting in a functional duration of action of 2-3 months as the receptors have to be replaced slowly over time. Individuals treated with the CMECD[®] procedure do not demonstrate recurrence of muscle spasm or pain unless the original or similar overuse injury is repeated. The CMECD[®] procedure use is unrestricted and can be quickly learned and the phenoxylbenzamine/dexamethasone injectate to which Lidocaine is added can be obtained from a Delaware pharmacy and shipped to nearly all states within the United States. Phenoxylbenzamine can also be obtained from a US manufacturing source and shipped worldwide.

Biography

Dr. Coletti did a fellowship in interventional cardiology in New York and had a career in interventional cardiology in New Jersey and Delaware, USA. He was board certified in internal medicine, cardiovascular disease, interventional cardiology, and nuclear cardiology. He had an interest in chronic muscle spasm and found that chronic muscle spasm had an ischemic etiology and developed a technique using EMG guidance to reverse the ischemia and resolve the chronic muscle spasm. His publication in this area is 12 abstracts, a book and 2 recent articles. He is currently retired from clinical practice and no longer has institutional affiliations.



Roger H. Coletti, MD

Interventional Health, PA, Lewes, DE, USA

Treatment of chronic muscle spasm and pain with the CMECD® procedure

It has been noted by multiple researchers that there is Spontaneous Electrical Activity (SEA) at painful trigger points. This author has studied chronic muscle spasm and found that SEA is always present and appears to be the cause for the chronic nature of muscle spasm. Chronic muscle spasm can last for years and cases where the spasm lasted for decades were not only found but successfully treated with the CMECD® procedure. This procedure consists of EMG guidance searching for the SEA and using a combination of phenoxybenzamine, lidocaine and dexamethasone to extinguish the SEA. Large areas of muscle often need to be treated. Thanks to lidocaine acting as an antiarrhythmic, the SEA is extinguished within seconds and the phenoxybenzamine then takes over after about one hour. With the resolution of the SEA, the muscle can immediately relax. The phenoxybenzamine forms a covalent bond on the alpha motoneuron receptor and the result is a duration of action of 2-3 months. This is enough time for the muscle to recover the prolonged effect of ischemia resulting from the prolonged spasm. Muscles treated in this fashion need only a single injection. Recurrences are rare and only occur if there is a repeat overuse or traumatic injury. The CMECD® procedure is available for use by any medical caregiver that is licensed to give injections. The ability to permanently relieve chronic pain without the use of opioid drugs should prompt interest in this procedure.

Biography

Dr. Coletti received a BA from Georgetown University College of Arts and Sciences. He received a Master of Arts from Hofstra University. He received his MD from State University of New York at Downstate. His medical internship and residency was performed at Nassau County Medical Center in East Meadow, NY. He did two years of cardiology fellowship at Columbia Presbyterian Medical Center in New York and then transferred to Westchester County Medical Center where he completed one year of Interventional Cardiology fellowship. He was awarded FACC, FASNC, and FSCAI fellowship status. Current interest is chronic muscle spasm and pain.



Mr. Rohit Ravindran Nair*, Muhammed Ehsan Nazeer, Jabez Gnany, Jayadeep Jayachandran Saraswathy, Pradeep Kumar, Rohit Manikandan Nair, Ansaba Naseer

Department of Trauma and Orthopaedics, North Cumbria Integrated Care NHS Foundation Trust, Carlisle, Cumbria, United Kingdom

Fibula nail fixation versus open reduction and internal fixation for distal fibula fractures

Introduction: Fibular fractures, particularly those involving the distal fibula, are commonly treated with Open Reduction and Internal Fixation (ORIF). However, Intramedullary (IM) nailing has emerged as an alternative, particularly in patients at risk of wound complications.

Aims and Objectives: This systematic review evaluates the efficacy, safety and biomechanical advantages of IM nailing as compared to ORIF.

Methods: A systematic literature search was conducted using PubMed, EMBASE, and Cochrane databases. Studies comparing IM nailing with plating for fibular fractures were included. Outcomes assessed included union rates, complication rates, functional outcomes, and time to weight-bearing.

Results: A total of 10 studies were included, incorporating 1,580 patients. Union rates for IM nailing were 98.6% as compared to 97.2% for ORIF. Complication rates were significantly lower with IM nailing (14%) versus ORIF (29%), particularly in terms of wound infections and hardware irritation. Functional outcome scores, including American Orthopaedic Foot and Ankle Society (AOFAS) and Olerud-Molander scores, were comparable or slightly better in the IM nailing cohort. IM nailing allowed for earlier weight-bearing and had fewer secondary surgical interventions.

Conclusion: IM fibular nailing is a viable alternative to ORIF, offering reduced soft tissue complications, earlier rehabilitation and comparable union rates. Future randomized controlled trials are warranted to further delineate patient selection criteria and long-term functional outcomes.

Keywords: Fibula Nail Fixation, ORIF, Distal Fibula Fractures.

Biography

Mr Rohit Ravindran Nair completed his MBBS and graduated from Kasturba Medical College, Mangalore, India in 2016. He then pursued postgraduation in Orthopaedics and obtained his MS (Orthopaedics) degree from JSS Medical College, Mysuru, India in November 2020. Subsequently he obtained the degree of MRCS (England) in 2022. He worked as a Trust Doctor ST1/2 in Orthopaedics at Blackpool Teaching Hospitals NHS Foundation Trust from May 2023 to November 2024. Currently, he is working as a Trust Registrar in Trauma and Orthopaedics at North Cumbria Integrated Care NHS Foundation Trust. He has published two research articles in Pubmed-indexed journals.



Rohit Ravindran Nair*, Dr Adersh Gopinathannair, Dr Pradeepsyam Prasad, Mr Brijesh Ayyaswamy, Mr Anoop Anand

Department of Trauma and Orthopaedics, Blackpool Teaching Hospitals NHS Foundation Trust, Blackpool, Lancashire, United Kingdom

Short-to-medium term functional and radiological outcomes of intra-articular calcaneum fracture fixation using sinus tarsi approach

Introduction: The extensile lateral approach for calcaneum fracture fixation has high complication rates of 25-30%. Sinus tarsi approach is a minimally invasive surgical technique for fixing calcaneal fractures with minimal wound complications.

Aim: To assess the short-to-medium term functional and radiological outcomes and complication rates of intra-articular calcaneum fracture fixation using sinus tarsi approach.

Methodology: Retrospective study of 27 patients with intra-articular displaced calcaneum fractures fixed using sinus tarsi approach from 2015-2022. All patients had pre-operative radiographs, CT scans and appropriate DVT prophylaxis. Sanders classification and pre- and post-operative Bohler angle measurements were used. Functional outcome was measured using Manchester Oxford Foot Questionnaire (MOxFAQ) scores and complications rates, including subtalar fusion rates, were assessed.

Results: Our study had a male to female ratio of 4:1 with a mean age of 48 years (22-79) with 1 to 8 years follow-up. Ten patients were active smokers. The mean pre-operative Bohler angle was 9.41 ± 8.2 and achieved post-operative Bohler angle was 27.5 ± 5 with an improvement in the Bohler's angle of 18 ± 3.5 , which is statistically significant (P value < 0.0001). The mean MOxFAQ score was 55.93 (27.8-78.3). One patient developed wound infection requiring implant removal. 8 patients had radiological evidence of arthritis but none required fusion. All but five patients were able to return to their pre-injury occupation.

Conclusion: In our study, patients had fair to good functional outcomes with good radiological outcomes and less revision rates. Minimally invasive calcaneal fracture fixations using sinus tarsi approach significantly restores bohler angle with minimal complication rates.

Biography

Mr Rohit Ravindran Nair completed his MBBS and graduated from Kasturba Medical College, Mangalore, India in 2016. He then pursued postgraduation in Orthopaedics and obtained his MS (Orthopaedics) degree from JSS Medical College, Mysuru, India in November 2020. Subsequently he obtained the degree of MRCS (England) in 2022. He worked as a Trust Doctor ST1/2 in Orthopaedics at Blackpool Teaching Hospitals NHS Foundation Trust from May 2023 to November 2024. Currently, he is working as a Trust Registrar in Trauma and Orthopaedics at North Cumbria Integrated Care NHS Foundation Trust. He has published two research articles in PubMed-indexed journals.



Ron Blehm PT, CEEAA, CSFI, CFPS

EEI Physio, LLC Minneapolis, MN 55406, United States

Silos of specialized care: A cautionary tale

Our practice and expertise is often focused on differential diagnosis and applying the best evidence-based practice to address or remediate the identified pathology. To that end, research is often set up to find the best intervention(s) to address the identified loss of function. This encourages providers to specialize and our continuing education is focused on practicing at the top of licensure by specializing in certain more focused fields of interest (orthopaedics, sports, geriatrics, pelvic health etc) (PMID: 36270118) However, patients are complex and multi-faceted (PMID: 29040347) and often require a more wholistic or whole-person view as well as broad-strokes of more diverse interventions. (PMID: 35273832) This is often at odds with practice and payment models that are more siloed. (PMID: 32056829) We will discuss ideas, opportunities and recommendations to expand our ability to address patient's needs beyond their reason for referral (PMID: 27539292) and how Rehab Medicine may be positioned to have greater influence on health-related patient outcomes. (PMID 32143634, PMID: 22261213, PMID: 34551322, PMID: 37025707, PMID: 24029295)

Biography

Ron Blehm continues daily clinical practice and is the owner of EEI Physio, LLC. In addition to clinical work: Co-Op Study 470: Persian gulf war unexplained illness PMID: 11384792 & 12636462. Non-pharmacological interventions for the management of fibromyalgia. PMID: 16945248. In-clinic testing and assessments for delaying disability in people with parkinson disease using a sensorimotor agility exercise program PMID: 19228832. Performing alpha and beta patient trials for mini BEST test PMID: 20461334 & PMID: 23547173. Effects of group, individual, and home exercise in persons with parkinson disease: A randomized clinical trial PMID: 26308937.



Sai Viswan Thiagarajah

Northern Care Alliance, United Kingdom

Evaluation of autograft contamination in Anterior Cruciate Ligament (ACL) reconstruction and its clinical impact; A systematic review and meta-analysis

Background: Understanding the characteristics of Intra-Operative Graft Contamination (IOGC) in Anterior Cruciate Ligament Reconstruction (ACLR) may guide infection control measures. Aim: To determine the rate and characteristics of intra-operative graft contamination during ACLR and its clinical impact in relation to the development of post-operative infection.

Methods: A systematic review and meta-analysis using Cochrane methodology was performed. PubMed, Embase, CINAHL, and Cochrane CENTRAL were searched. Studies reporting on the rate of autograft contamination, Hamstring Tendon (HT) or Bone Patellar Tendon Bone (BPTB) grafts, during ACLR were included. Meta-analysis was conducted using a random effects model. The study was prospectively registered with PROSPERO (CRD42024570199).

Results: Literature search identified 175 studies. After removing duplicates and ineligible studies, 12 qualified for evaluation. Meta-analysis showed that the estimated rate of graft contamination during ACLR was 12.3% (CI 7.8-19%) when examining HT and BPTB grafts together. Similar rates were observed when examining HT and BPTB grafts in isolation (11.9%, CI 7.2-18.9, versus 14%, CI 7.1-25.6%,). Meta-analysis of two studies that directly compared contamination between the preparation stage versus harvesting stage showed a higher risk for the former OR 3.23 (1.01-10.39, P=0.049). Cultures were mostly monomicrobial and Staphylococcus Epidermidis was the most commonly isolated organism. There was no clear association between IOGC and post operative full-blown infection, but the evidence assessing this parameter was sparse and any link to chronic low-grade infection could not be established.

Conclusion: There is a high rate of autograft contamination during ACLR and elaborate infection prevention measures are required to reduce this.

Biography

Sai Viswan Thiagarajah studied medicine at University of Edinburgh graduating in 2021. He is a core surgical trainee in the North West of England.



Sai Viswan Thiagarajah

Northern Care Alliance, United Kingdom

Local implementation of girft guidance can reduced cauda equina syndrome related service pressures without negatively impacting diagnosis-retrospective observational study at a district general hospital

Background: Cauda Equina Syndrome (CES) is a rare but serious neurosurgical emergency requiring substantial resources to ensure its safe exclusion. Get It Right First Time (GIRFT) published recommendations in February 2023 to guide clinicians assessing potential cases with respects to the decision to undertake scanning. Within our local hospital this framework has been adopted by the on-call orthopaedic service to help manage the high volume of referrals it receives. The aim of this audit is to assess whether implementing GIRFT guidance eased CES related service pressures without reducing our sensitivity for diagnosing this emergency.

Methods: Retrospective review of all patients undergoing MRI scanning to exclude CES during two 6-month periods. GIRFT guidance was published in February 2023. The first period (01/08/2022-31/01/2023) was pre-GIRFT guidance and the second period (01/08/2024-31/01/2025) was more than one year after GIRFT publication. Exclusion criteria were any self-discharges before scanning, outpatient scanning or scanning for trauma/infection. Data was extracted using predesigned proformas. Statistical analysis was undertaken using Chi-squared and two sample T testing.

Results: There were 175 inpatients MRI scans to exclude CES during the first period versus 159 during the second. In the second 6 months, there was a significant reduction in percentage of patients requiring admission (42.77% versus 56.57%, $p=0.011$) and an increase in the percentage of patients scanned on the day of presentation, although the study was inadequately powered to show significance (61.64% versus 52%, $p=0.076$). There was no change in the sensitivity of inpatient scans for identifying CES (4.57% versus 4.4%, $p=0.941$).

Conclusion: Our results show that adoption of the GIRFT pathway within our hospital reduced pressure on our services without negatively impacting detection of CES. These findings could be used to drive similar practices in other district general hospitals.

Biography

Sai Viswan Thiagarajah studied medicine at University of Edinburgh graduating in 2021. He is a core surgical trainee in the North West of England.



Salim Hirani

Neurophysiology Department, Ysbyty Gwynedd Hospital, Bangor, North Wales, UK.
LL57 2PW

Placement of reference electrode position in motor nerve conduction study of ulnar nerve

Background: Ulnar nerve is the second most common entrapment neuropathy in the hand at the wrist and at across elbow. There are various techniques have been developed to diagnosed the entrapment. Ulnar nerve supply to wrist at the two main muscles First Dorsal Interosseous (FDI) and Abductor Digiti Minimi (ADM). Many research shows that FDI muscle is use to diagnose an early entrapment across elbow. Recording from FDI muscles, there is an issue in placing the reference electrode placement due to its positive deflection.

The aim of this research to identify which is the best position to place the reference electrode in FDI muscles.

Method: A total of 46 hands were included in this study. Data was collected based on the extensive and detailed description mentioned in different research papers. The tests were performed by a qualified clinical physiologist (Neurophysiology) using a Keypoint 9033A07 machine, used in line with departmental protocol (Ulnar nerve screening protocol 1.1, 2020). All data was recorded numerically to ensure methodological reliability.

Result: Out of 46 hands tested for the Nerve Conduction Study (NCS) by placing reference electrode in three different places i.e. tendon of the FDI muscles at the base of digit II, over the thumb and tendon of ADM muscles at the base of digit V. Tendon of the FDI muscles at the base of digit II shows positive deflection in all hands with amplitude range between 6-15 mV. Over the thumb show the baseline slightly elevated to get accurate distal motor latency with amplitude between 5-8mV. And tendon of ADM muscles at the base of digit V shows correct baseline for accurate distal motor latency with the amplitude range 10-18mV.

Conclusion: This study shows that to record the best and clear response by placing the reference electrode at the tendon of ADM muscles at the base of digit V is more reliable as compare to other two areas.

Biography

Salim Hirani and he studied BSc in Karachi University, Pakistan in 1990. He is Reg. Technologist from ECNE board UK in 1999. He has completed his on the job training in the field of Physiological Measurement services of one year 6 months from The Aga Khan University Hospital, Karachi Pakistan in 1989. He is registered with RCCP. He has almost 28 years' experience in Neurophysiology and 5 years in Cardiopulmonary field. He worked in three different countries in the field of Neurophysiology. He established a new Neurophysiology department in Torbay Hospital. His paper on Refine grading of CTS published in MBC open access journal which achieve great welcome. His next paper on grading of ulnar nerve at elbow published in Research Gate and is almost ready for publication in other journal. Two other research is under process.



Salim Hirani, Chief Clinical Physiologist (Neurophysiology)

Neurophysiology Department, Ysbyty Gwynedd Hospital, Bangor, North Wales, UK.
LL57 2PW

Neurophysiological grading tool of ulnar nerve entrapment across wrist and across elbow with case presentation

Ulnar Nerve Entrapment Across the Elbow (UNEAE) and across wrist (UNEAW) is the second most common entrapment of the hand after carpal tunnel syndrome. There are few gradings available for UNEAE and lesser in UNEAW.

The aim of this research is;

1. To create a clinically appropriate ulnar nerve entrapment grading tool to covers both area of entrapment in one research paper.
2. To see the relation of sensory nerve involvement across wrist with the entrapment across elbow and to evaluate its effectiveness in terms of compatibility with previous research, without any invasive tests like needle EMG examination.
3. To identify the lesion below and across wrist as well as across elbow in order to support the Clinical Physiologist (CP) to grade them properly and also help the consultant in deciding to treat with conservative or surgical treatment.
4. To compare the recording from the First Dorsal Interosseous (FDI) muscles with the Abductor Digiti Minimi (ADM) muscle to see which muscle is more sensitive and shows early changes in ulnar nerve entrapment.

The proposed revised grading system is based on more nuanced, descriptive categories, ranging from normal, early, mild, moderate and severe. To create full grading system of UNEAW and UNEAE some additional category of clinical grading is therefore proposed.

Biography

Salim Hirani has worked in Neurophysiology for more than 30 years. He did is Neurophysiology course from United Kingdom. He has worked in several different countries and can speak 4-5 languages. His three papers on this research: Refined Grading of Carpal Tunnel syndrome in BMC journal in 2019, Neurophysiological Grading tools of ulnar nerve entrapment across elbow in Journal of Neurology, Neurological Science and Disorders in 2023 and Neurophysiological Study for Ulnar Entrapment at Wrist in Journal of Psychiatry and Behavioural Sciences in June 2023 have already been published.



Dr. Samson Selvaraj.J*, Dr. Henry Prakash. M, Dr. Thomas Anand Augustine

Consultant Physiatrist, Poovanthi Institute of Rehabilitation and Elder Care, Madurai, Tamil Nadu, India

Immersive virtual reality: A new direction in the management of neuropathic pain in spinal cord injury

Objectives:

- **Main:** To study the reduction in neuropathic pain using immersive virtual reality as a modality.
- **Secondary:** To evaluate the presence of depersonalization in persons with spinal cord injury who have neuropathic pain and the effect of virtual reality on it.

Trial design: Double blinded, Randomized controlled trial.

Setting: Rehabilitation center of a tertiary care teaching Hospital in South India.

Participants: 52 persons with Spinal Cord Injury (SCI) ASIA A, B and C who had neuropathic pain score of 12 or more on LANSS scale and who were on stable pharmacological treatment. Randomized using computer generated block randomization.

Methods: The intervention group was given immersive VR environment exposure in the form of virtual wheelchair propulsion, cycling, and walking on a VR head-mounted display, for 15 minutes per session, 2 sessions per day, 5 days a week, for 2 weeks. The control group was shown 2D animated films for the same period, in the same device.

Outcome measures:

- Visual Analog Scale (VAS) for neuropathic pain
- Cambridge Depersonalization Scale (CDS) for depersonalization.

Result: 43 patients completed the study (intervention - 23; control – 19). VAS showed statistically significant improvement in both groups ($p < 0.005$). However, the reduction in pain was two times greater in intervention than the control. CDS showed statistically significant improvement with immersive VR intervention group ($p = 0.003$)

Conclusion: Immersive VR is a potent nonpharmacological, non-invasive modality for management of neuropathic pain in Spinal Cord Injury (SCI) with minimal adverse effects, portability, ease of use and customization. It improves embodiment and enables ownership in paraplegics. Thereby immersive VR may help in improving quality of life in SCI population.

Keywords: Spinal Cord Injuries, Paraplegia, Neuralgia, Depersonalization, Virtual Reality, Rehabilitation

Biography

Dr. Samson Selvaraj earned his MBBS degree from Bharath University, India, in 2018. He subsequently served as a Junior Resident (non-postgraduate) in the Department of Radiodiagnosis at Christian Medical College (CMC), Vellore, for two years. Pursuing his interest in rehabilitation medicine, he joined the MD program in Physical Medicine and Rehabilitation (PMR) at CMC, Vellore, and completed his postgraduate training in 2023. Following this, he continued as a Senior Resident in the Department of PMR at CMC until September 2024. Since October 2025, Dr. Samson Selvaraj has been serving as a Consultant Physiatrist at the Poovanthi Institute of Rehabilitation and Elder Care, a leading center for neurorehabilitation in South India.



Dr. Samson Selvaraj. J

Consultant Psychiatrist, Poovanthi Institute of Rehabilitation and Elder Care, Madurai,
Tamil Nadu, India

Neurorehabilitation services in a South Indian rehabilitation institute – Issues and challenges

India faces a growing burden of neurological conditions such as stroke, traumatic brain injury, and neurodegenerative disorders. However, the availability and accessibility of neurorehabilitation services remain limited and uneven. This problem is expected to worsen due to the rising trend of non-communicable diseases and demographic shifts associated with increased life expectancy. In India, a majority of individuals with disabilities reside in rural areas, where accessibility, availability, cost-effectiveness, and utilization of rehabilitation services are significant concerns.

The high burden of neurological disorders, combined with a shortage of neurorehabilitation services, presents a significant barrier to effective neurorehabilitation. Furthermore, there is a notable lack of government-led neurorehabilitation services in India, creating critical gaps in care. In this context, our rehabilitation institute has taken on a pivotal role in partially addressing this need by providing accessible services to communities in our region. Rehabilitation services are often concentrated in urban centers, making access difficult for the large rural population in need. Not all rehabilitation services are covered by insurance, making it even more challenging for individuals to afford necessary care.

This presentation explores the practical challenges and systemic barriers encountered in delivering neurorehabilitation services at a leading rehabilitation institute in South India. Despite increasing demand from patients with stroke, spinal cord injury, traumatic brain injury, and other neurological conditions, the institute operates under constraints typical of low-resource settings. Key challenges include limited access to multidisciplinary teams and a shortage of trained professionals—particularly Physical Medicine and Rehabilitation (PMR) physicians, occupational therapists, and speech therapists with expertise in neurorehabilitation. Additional barriers include inadequate funding and poor integration of rehabilitation with primary and community health systems.

Our experience highlights marked urban-rural disparities in service access, inconsistent referral pathways, and limited public awareness regarding the benefits of early and sustained rehabilitation. Financial constraints, particularly for long-term therapy, remain a major deterrent for many patients.

Nevertheless, the institute is working to overcome some of these barriers through low-cost rehabilitation models. These innovations demonstrate the potential for scalable solutions, though sustained support through policy reforms, workforce development, and infrastructure investment is essential.

This case study provides valuable insights into the broader challenges of delivering effective neurorehabilitation in resource-limited environments and proposes context-specific strategies that could be adapted globally.

Keywords: Neurorehabilitation, South India, Resource-Limited Settings, Workforce, Access to Care

Biography

Dr. Samson Selvaraj earned his MBBS degree from Bharath University, India, in 2018. He subsequently served as a Junior Resident (non-postgraduate) in the Department of Radiodiagnosis at Christian Medical College (CMC), Vellore, for two years. Pursuing his interest in rehabilitation medicine, he joined the MD program in Physical Medicine and Rehabilitation (PMR) at CMC, Vellore, and completed his postgraduate training in 2023. Following this, he continued as a Senior Resident in the Department of PMR at CMC until September 2024. Since October 2025, Dr. Samson Selvaraj has been serving as a Consultant Psychiatrist at the Poovanthi Institute of Rehabilitation and Elder Care, a leading center for neurorehabilitation in South India.

**Sebastiaan Fischer**

Erasmus Medical Center, Netherlands

3D-planned corrective osteotomy for the treatment of distal radioulnar joint instability in diaphyseal forearm malunion

Introduction and Research Question: Forearm fractures are common in children. A potential complication is symptomatic malunion, which typically results in limited pronation and/or supination. In rare cases, rotational movement is preserved, but the malunion causes instability of the Distal Radioulnar Joint (DRUJ) and ulnar-sided wrist pain. Soft tissue procedures are often employed to address this instability. This study evaluates the effect of a 3D-planned corrective osteotomy using patient-specific drill and cutting guides to improve DRUJ stability and reduce ulnar wrist pain.

Methods: In this retrospective cohort study, patients with a diaphyseal forearm malunion sustained during childhood, presenting with DRUJ instability but no evident limitation in forearm rotation, were included. All patients underwent a corrective osteotomy of the radius and/or ulna using 3D-printed patient-specific drill and cutting guides. The primary outcome was pain, measured by the Numeric Rating Scale (NRS) at rest and under load, six months postoperatively. Secondary outcome was subjective function, assessed using the Patient-Rated Wrist/Hand Evaluation (PRWHE) score.

Results: Ten patients were included (mean age:— years; 50% male). Postoperatively, all patients demonstrated a stable DRUJ without the need for an additional soft tissue procedure. NRS pain under load decreased significantly from 5.1 to 2.4 ($p=0.02$). Pain at rest showed no significant change. The PRWHE score improved significantly from 53 to 23 ($p=0.04$).

Conclusion: A 3D-planned corrective osteotomy without adjunctive soft tissue procedures results in significant improvements in both pain and function in patients with DRUJ instability secondary to diaphyseal forearm malunion.



**Dr. Sharlet Shabu Pappachan (SHO), Dr. Jane Snook
(Consultant Orthogeriatrician)**

Geriatrics, Ortho-geriatrics, The Princess Alexandra Hospital Trust, Harlow, Essex,
U.K

A breakthrough in post-operative care: Differentiating statin-induced necrotising autoimmune myopathy from sepsis in orthopaedic surgery

Background: Differentiating post-operative complications is a critical aspect of orthopaedic surgery. Necrotising autoimmune myopathy, a rare condition, can closely mimic sepsis after hip hemiarthroplasty, leading to diagnostic delays. This presentation highlights a breakthrough in the diagnostic approach to this clinical mimic.

Case Presentation: A 79-year-old male underwent a left hip hemiarthroplasty. His course was complicated by persistent pyrexia and markedly elevated inflammatory markers, with C-Reactive Protein (CRP) peaking at 493 mg/L. Despite extensive screening, all microbiological investigations were negative. Nine days post-operatively, he developed severe pain and rapidly progressive symmetrical quadriparesis with muscle power reduced to 1/5 and Creatine Kinase (CK) levels peaking at 1081 U/L. A comprehensive myositis-specific antibody panel was entirely negative, confounding the diagnosis.

Outcomes: Facing clinical deterioration, a therapeutic trial with a modest dose of 20 mg oral prednisolone was initiated. The patient demonstrated a dramatic clinical response within days. Temperature spikes ceased, inflammatory markers plummeted, and muscle power rapidly improved. He progressed from being bedridden to mobilising with a mobility aid within two weeks.

Conclusions: This case underscores a critical diagnostic challenge in geriatric orthopaedics. Statin-induced necrotising autoimmune myopathy must be a key differential in patients with unexplained post-operative weakness, extreme inflammation, and negative infectious workups, even in seronegative cases. Early recognition and a therapeutic trial of corticosteroids are crucial for optimal outcomes and represent a significant breakthrough in managing these complex post-operative complications. This case provides a strong argument for updating post-operative assessment protocols.

Biography

Dr. Sharlet Shabu completed her M.B.B.S from a prestigious medical college in India, graduating among the top three in her class. She is currently working in Orthogeriatrics at The Princess Alexandra Hospital NHS Trust and has passed MRCP Part 1, with plans to pursue Internal Medicine Training. Dr. Shabu has a strong interest in Orthogeriatrics and Rheumatology, complemented by additional training in Palliative Medicine. She is actively involved in Quality Improvement projects focused on enhancing the use of FRAX scores and improving postoperative management of osteoporotic patients through timely administration of Zoledronic Acid to optimize bone health and patient outcomes.



Shilpa Purushotham^{1,2*}, Nathan Hodson³, Carolyn Greig^{4,5,6}, Adrian Gardner^{7,8}, Deborah Falla¹

¹Centre of Precision Rehabilitation for Spinal Pain (CPR Spine), School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham, Birmingham, B15 2TT, UK

²Institute of Clinical Sciences, College of Medical and Dental Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK

³Department of Sport and Exercise Sciences, Institute of Sport, Manchester Metropolitan University, Manchester, M15 6BH, UK

⁴School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham, Birmingham, B15 2TT, UK

⁵MRC-Versus Arthritis Centre for Musculoskeletal Ageing and Health, University of Birmingham, Birmingham, B15 2TT, UK

⁶National Institute for Health Research, Birmingham Biomedical Research Centre at University Hospitals Birmingham NHS Foundation Trust, Birmingham, B15 2TT, UK

⁷The Royal Orthopaedic Hospital NHS Foundation Trust, Northfield, Birmingham, B31 2AP, UK

⁸College of Health and Life Sciences, Aston University, Birmingham, B4 7ET, UK

Microscopic changes in the multifidus muscle in people with low back pain associated with lumbar disc herniation

Lumbar Disc Herniation (LDH) is a common degenerative condition causing Low Back Pain (LBP) and neuropathic pain due to nerve root irritation and compression. Previous studies have examined the microscopic changes in the spinal extensor muscles in people with LBP, with the Multi Fidus (MF) being the most studied in people with LDH due to its uni-segmental innervation. However, there are conflicting findings regarding the Multi Fidus (MF) muscle's microscopic changes in LDH patients. So, this observational study aimed to compare the affected MF to the adjacent MF on the ipsilateral and contralateral sides in LDH patients and examined correlations with clinical features of LBP. Four muscle biopsies were collected from each of 30 surgical participants. Immunohistochemistry was performed on tissue sections and imaged with an epifluorescence microscope. Data on muscle fibres' cross-sectional area, perimeter, diameter, and composition were analysed using two-way Anova, while pathological fibres were analysed using Anova. Pearson's correlation was employed to examine MF microscopy associations with clinical features. Results revealed no significant differences in the outcome measures between the affected MF and MF from other sites, though they were significantly greater for type I fibres compared to type II fibres, irrespective of MF location. There were significantly more pathological fibres present in the affected MF ($p < 0.05$). A weak but significant negative correlation was found between type I fibres and LBP clinical features, though no such correlations were observed for type IIA fibres. In conclusion, LDH primarily impacts the pathological status of the MF rather than fibre phenotype or size, and the severity of clinical features affects the size of type I fibres.

Biography

Shilpa is a qualified medical doctor from India with nearly 8 years of clinical experience in Ireland. Following this, she pursued an academic career as an Anatomy Teaching Fellow at the University of Birmingham. She is pursuing her PhD due to her interest in the clinical anatomy/pathology of the back and in contributing to clinical medicine in the conservative management of the back pain population.



Steve Robins^{1*}, Nick D Clement²

¹University of Sunderland School of Medicine, Sunderland, United Kingdom

²Edinburgh Orthopaedics, Royal Infirmary of Edinburgh, United Kingdom

Predictors associated with failing to achieve a Patient Acceptable Symptom State (PASS) in the Oxford Knee Score (OKS) following Total Knee Arthroplasty (TKA)

Aim: To define the Patient Acceptable Symptom State (PASS) in the Oxford Knee Score (OKS) following Total Knee Arthroplasty (TKA), and to identify independent preoperative factors associated with failure to achieve this threshold.

Methods: A retrospective cohort study that included patients who underwent primary TKA during an 8-year period was undertaken. A total of 3,304 patients completed both preoperative and 6-month postoperative OKS. The PASS was defined using Receiver Operating Characteristic (ROC) curve analysis, with patient satisfaction at 6 months as the anchor. Logistic regression was performed to identify independent preoperative predictors of achieving the PASS.

Results: A threshold of ≥ 31 points in the OKS was identified as the PASS (AUC 0.865, 95 % CI 0.850–0.881), of which 70.6% patients achieved this. Patients failing to achieve a PASS were younger, had a lower BMI, and worse baseline Patient Reported Outcome Measures (PROMs) (all $p < 0.001$). A pre-operative $OKS \leq 19$ was associated with non-achievement of PASS (AUC 0.707), while higher pre-operative OKS (Odds Ratio [OR] 1.09 per point) and EQ-VAS (OR 1.01 per point) were independently associated with achieving a PASS (both $p < 0.001$). Those attaining a PASS were more likely to be satisfied with their TKA (OR 15.3). Nevertheless, 54.4 % of patients below the PASS threshold still reported being satisfied with their TKA.

Conclusion: The PASS was defined as ≥ 31 points in the OKS at 6 months following TKA. Lower preoperative OKS and EQ-VAS scores were associated with failure to achieve this threshold. While PASS attainment closely correlated with satisfaction, 54% of those not achieving a PASS were still satisfied, highlighting the need for individualised interpretation of outcome measures.

Level of Evidence: Retrospective study, Level III.

Keywords: Oxford Knee Score, PASS, Knee, Arthroplasty, Satisfaction.

Biography

Steve Robins is a third-year medical student at the University of Sunderland with a strong interest in orthopaedic surgery and outcomes research. He has contributed to several orthopaedic projects, including a systematic review and registry-based analysis, and leads clinical audits within the Orthopaedic department at Sunderland Royal Hospital. Steve also founded his university's orthopaedic society and is actively involved in academic teaching and event coordination. With a growing academic portfolio, he plans to apply for Core Surgical Training with a focus on trauma and orthopaedics. This project represents his first first-author submission for presentation and publication.



Dr. Surayya Mamun FY2, Mr. Ali Ilyas SpR

Arrowe Park Hospital, Wirral University Teaching Hospitals



Assessment of compliance with boast guidelines on weightbearing following lower limb trauma surgery at Arrowe Park hospital

Background: The British Orthopaedic Association Standards for Trauma (BOAST) provide national guidance on postoperative weightbearing instructions following lower limb trauma surgery. Clear, standardised terminology and rehabilitation planning are essential to ensure safe and effective mobilisation, reduce complications, and improve multidisciplinary communication.

Aims: To assess compliance with BOAST guidelines on weightbearing documentation at Arrowe Park Hospital, identify deviations in terminology, and implement improvements in postoperative care planning and documentation.

Methods: A retrospective review of lower limb trauma cases was conducted between 5th August and 29th September 2024. Data were collected on weightbearing status as documented in theatre notes and the time to physiotherapy-led mobilisation post-surgery. Compliance was measured against BOAST standards, which mandate the use of specific terms (Non-weightbearing, Limited weightbearing, and Unrestricted weightbearing) and require a documented rehabilitation plan with review at least every 72 hours.

Results: Although most patients were mobilised appropriately post-surgery, only 17% of cases used BOAST-compliant terminology. Commonly used non-standard terms included WBAT (Weightbearing as tolerated), FWB (Full weightbearing), and hybrid terms such as FWBAT. Documentation also included vague or percentage-based instructions, which are discouraged by BOAST. These findings highlight a gap in standardisation, which could affect clarity and patient outcomes.

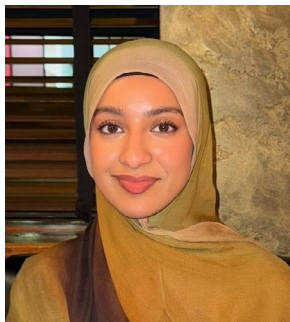
Interventions and Progress: In response, educational posters were disseminated in theatre, and the postoperative proforma on Cerner was updated to align with BOAST terminology. A second audit cycle is now underway, with data collection due to complete in September 2025. Preliminary results are looking promising, suggesting an improvement in compliance and greater use of standardised terminology.

Conclusion: Initial findings demonstrate the need for improved adherence to BOAST guidelines, particularly regarding consistent and accurate weightbearing terminology. The implemented changes aim to standardise practice and enhance multidisciplinary communication, with ongoing evaluation expected to confirm sustained improvements.

Biography

Dr. Surayya Mamun is a resident doctor based in the North West of the UK with a keen interest in trauma and orthopaedics. She is committed to advancing patient care through quality improvement projects and is particularly focused on optimising surgical outcomes and rehabilitation pathways. Dr. Mamun actively engages in clinical audit and research to support evidence-based practice within the field.

Mr. Ali Ilyas is an Orthopaedic Registrar currently training in the North West Deanery, with specific interest in general trauma and lower limb arthroplasty. He graduated from the Royal College of Surgeons in Ireland – Bahrain in 2019, before completing his Foundation Training in the South West of England and Core Surgical Training in the North West. He has also completed a Postgraduate Certificate in Surgical Education, reflecting his commitment to teaching and training the next generation of surgeons. Alongside his clinical work, he maintains a strong interest in surgical innovation and improving patient outcomes in orthopaedics. Outside of medicine, Dr. Ilyas enjoys staying active through basketball and badminton, and pursues his creative side through calligraphy.



Dr. Surayya Mamun FY2, Mr. Ali Ilyas SpR

Arrowe Park Hospital, Wirral University Teaching Hospitals



Standardising microbiology result tracking to reduce missed cultures in a district general hospital orthopaedic department: A quality improvement initiative

Background: Missed or delayed review of microbiology culture results can lead to inappropriate antimicrobial therapy, delayed escalation, and patient harm. Within our orthopaedic department, extended and enrichment cultures (>48-hour incubation) were identified as being at particular risk of being overlooked, due to inconsistent documentation and absence of a standardised tracking process.

Aim: To implement a structured and reliable method for recording microbiology culture results and associated actions, ensuring timely review of all orthopaedic aspirate results and reducing the risk of missed or delayed treatment.

Methods/Intervention: We introduced an Orthopaedic Aspirate Results Record, a standardised logbook designed to capture patient identifiers, specimen date, interim and final culture updates, additional findings (e.g., white cell count, Gram stain, sensitivities), and clinician sign-off confirming review and action. The logbook was incorporated into the daily trauma meeting, where results are reviewed collectively to ensure accountability and consistency.

Measures of Success: Outcomes assessed include: (1) timeliness of review (percentage of extended/enrichment cultures reviewed within the expected timeframe); (2) completeness of documentation (proportion of cultures with full entries and sign-off); (3) reduction in missed results (via incident reports and case reviews); and (4) staff feedback on usability and perceived impact on patient safety.

Results: The intervention has recently been implemented, with formal data collection ongoing. Early use suggests improved consistency in documentation, and informal staff feedback has been positive, with the logbook considered simple to use and helpful in maintaining oversight. The first formal evaluation is planned at three months.

Conclusion: A structured results record embedded into daily trauma meetings provides a reliable and low-cost process for monitoring microbiology cultures in orthopaedics. This intervention has the potential to reduce missed results, improve accountability, and enhance patient safety. Ongoing evaluation will determine its long-term sustainability and impact.

Biography

Dr. Surayya Mamun is a resident doctor based in the North West of the UK with a keen interest in trauma and orthopaedics. She is committed to advancing patient care through quality improvement projects and is particularly focused on optimising surgical outcomes and rehabilitation pathways. Dr. Mamun actively engages in clinical audit and research to support evidence-based practice within the field.

Mr. Ali Ilyas is an Orthopaedic Registrar currently training in the North West Deanery, with specific interest in general trauma and lower limb arthroplasty. He graduated from the Royal College of Surgeons in Ireland – Bahrain in 2019, before completing his Foundation Training in the South West of England and Core Surgical Training in the North West. He has also completed a Postgraduate Certificate in Surgical Education, reflecting his commitment to teaching and training the next generation of surgeons. Alongside his clinical work, he maintains a strong interest in surgical innovation and improving patient outcomes in orthopaedics. Outside of medicine, Dr. Ilyas enjoys staying active through basketball and badminton, and pursues his creative side through calligraphy.



Dr. Tathagath Tiwary¹, Dr. Dilip Kumar Naidu²

¹Department of Orthopaedics, SRM Medical College Hospital and Research Centre, Chennai, India

²Professor, Department of Orthopaedics, SRM Medical College Hospital and Research Centre, Chennai, India

A prospective observational study to assess the functional outcomes of open Latarjet procedure for recurrent anterior shoulder dislocations in a tertiary care setting

Introduction: The shoulder joint's remarkable range of motion makes it susceptible to dislocations and recurrent anterior shoulder dislocations are common, often leading to associated injuries and functional limitations. The Open Latarjet procedure has emerged as a primary surgical intervention, but its effectiveness and outcomes warrant further investigation.

Aims and Objectives: This study aimed to evaluate the effectiveness of Open Latarjet procedure in managing recurrent anterior shoulder dislocations, assess functional outcomes, evaluate complications, and determine recurrence rates following the procedure.

Methods and Materials: This prospective observational study was conducted at SRM Medical College Hospital and Research Centre, Chennai, involving 30 patients with recurrent anterior shoulder dislocations from August 2022 to August 2024. Patients underwent preoperative and postoperative assessments of the open Latarjet procedure, and follow-up assessments were performed at regular intervals. Data were analyzed using descriptive statistics and inferential tests.

Results: The study involved 30 patients with a mean age of 42.7 ± 17.8 years. The mean number of dislocations was 9 ± 4 . Of the participants, 19 (63.3%) experienced 5-10 dislocations, 8 (26.7%) had 10-15 dislocations, and 3 (10%) had 15-20 dislocations. Significant improvements were noted in functional outcomes at the 1-year follow-up: mean abduction increased from 109.3 ± 20.1 to 149.3 ± 23 ($P=0.001$), adduction from 30.1 ± 4.5 to 54.9 , forward elevation from 85 ± 5.9 to 131.3 ± 8.9 , internal rotation from 55.9 to 86 degrees, and external rotation from 29 to 54.3 degrees (all $P < 0.05$). Patient satisfaction was high at 73.3%, with a low complication rate of 16.7%. UCLA scores rose significantly from 11.6 to 34.3, while OSIS scores dropped from 49.7 to 15.9 (both $P < 0.05$).

Conclusion: The Open Latarjet procedure demonstrated favourable outcomes in managing recurrent anterior shoulder dislocations, with significant improvements in functional outcomes and patient satisfaction rates. Complications were minimal, supporting the procedure's effectiveness in improving patient outcomes.

Biography

Dr. Tathagath Tiwary pursued post graduation in orthopaedic surgery at SRM Medical College Hospital and Research Centre, Chennai. He has a keen interest in traumatology and complex trauma. His research focuses on shoulder surgery and functional outcomes. He is actively involved in academic activities and research.



Dr Trishul Sonoji Dhumal*, Dr Nitin Vijay Kimmatkar

Department of Orthopaedic IGGMC Nagpur India

Functional and radiological outcome of U-shaped sacral fracture in 9-year-old male child a rare case

Introduction: U-shaped sacral fracture in paediatrics population are rare and infrequently documented, typically resulting from high energy trauma such as road traffic, falling from height, heavy object impacts. these fractures are often accompanied by other injuries like head, spine, pelvis and are frequently overlooked. They carry a high risk of neurological deficit and mechanical instability.

Material and material: An 9-year-old male child presented to us in casualty department following an injury caused by a heavy object falling on him. Child complains of sever back pain and inability to walk with no neurological deficit. Primary stabilization was performed followed by initial investigation like radiographic X-ray and computed tomography scans. After a Preadnestic checkup done and operative treatment was planned. Percutaneous sacroiliac joint screw fixation was conducted using 5mm cancellous screw which is minimally invasive procedure to stabilize the sacroiliac joint.

Results: Early surgical intervention ensured sacropelvic stability, enabling mobilization by post-operative day 3. Patient was discharge on post-operative day 5 without needing ambulatory support. follow up visits 1 month,3month,6months,8 months showed full range of movement, no pain and no movement limitation. With excellent long term radiographic functional outcome.

Discussion: The Sacrum serves as keystone for pelvic ring. U shaped sacral fracture is multiplanar injury with severe spinal axial loading results resulting in vertical bilateral fracture between alar and sacral segment coupled with a horizontal fracture between S1 and S2 due to sacral rotational movement, leading to dissociation. this fracture type was first described by Roy Camille in 1984. Management options include non operative and operative approaches with various surgical technique.

Conclusion: Occurrence of u shaped sacral fracture in paedritics population is rare. Surgeons often have limited experience in diagnosing and managing this injury .at the most recent follow up child reported no complaint and was able to participate in all school activities including sports.

Biography

Dr Trishul Sonoji Dhumal studied MBBS from Topiwala National Medical College Mumbai India doing Ms. Orhtopaedic from IGGMC Mayo Hospital Nagpur.



Dr Trishul Sonoji Dhumal*, Dr Nitin Vijay Kimmatkar

Department of Orthopaedics, IGGMC Nagpur India

Functional outcomes and quality of life scores of angle blade plate in pertrochanteric femur fracture

Introduction: Pertrochanteric femur fracture can present as either stable or unstable patterns often involving comminution of lateral and posterior medial wall. Both intra and extramedullary implant can be used for treatment, with angle blade plate been an extramedullary, bone preserving option. Angle blade plate offers angular stability and helps shields the lateral wall from stress.

Methods and Material: Case series involving thirty patients of pertrochanteric femur fractures managed with angle blade plate were studied. of this, 28 had intertrochanteric and 2 subtrochanteric femur fractures .in three cases, angled blade plate was used for revision surgery following failed intertrochanteric femur fracture treatment. All 30 patients were discharge within 3-5 days post operatively, with mobilisation starting on day one. Functional outcomes and quality of life scores were evaluated using modified harris hip score and sf 36 score follow up at 4 weeks, 3 months, and 6 months.

Results: The minimum follow- up period was of 6 months. radiological union was achieved in ninety percent patient with a zero infection rate. Functional outcomes and quality of life score was assessed at 4 weeks, 3months, and 6months using modified harris hip score and sf 36-score. By end of 3months all patient was mobilised without any ambulatory support. However, limitation was mortality of two patients, other two experienced treatment failure and underwent revision surgery.

Conclusion: Angled blade plate is technically demanding procedure. Been as an extramedullary implant, its functions as load sharing and tensioning device for the floating lateral wall. The primary goal of our study was to achieve early postoperative mobilisation enchancing the patient's ability to perform daily activites and return to their premorbid level of function.

Biography

Dr Trishul Sonoji Dhumal Studied MBBS at Topiwala National Medical College Mumbai and currently doing Ms. Orthopaedics in IGGMC Nagpur India.



Dr. Wazir Fahad Jan

Department of Health and Medical Education, Jammu & Kashmir, India

A study on management of neglected shaft femur fractures by open intramedullary nailing

Background: Fracture shaft of femur is a common and major musculoskeletal injury and in most of the cases the patients are immediately brought to hospitals for specialist orthopaedic management. However, it is not uncommon in developing countries especially in rural India for these injuries to be neglected initially due to the widespread practice of quackery. The purpose of this study was to evaluate the effectiveness of open intramedullary nailing in the management of neglected fracture shaft femur patients in relation to achievement of union and functional results.

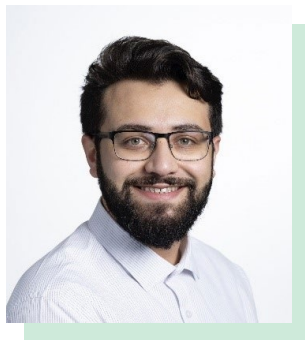
Methods: This was a prospective observational study conducted on 20 patients presenting to the Orthopaedic OPD of SHKM Government Medical College Hospital, Nalhar, Nuh, Haryana between August 2013 and December 2016, with a diagnosis of neglected fracture shaft of femur. All the patients underwent single stage open reduction and internal fixation with interlocking intramedullary nails. The patients were followed up for a period of 1 year. The patients were analysed for union and functional results.

Results: All the fractures united and the average time of union was 22.6 weeks. The average range of motion of the knees improved from 34 degrees in the preoperative period to 114.5 degrees in the postoperative period. Two patients developed superficial infections at the incision site which resolved with local drainage and oral antibiotics. All the patients were able to return to their preinjury occupation.

Conclusions: Thus results of our study demonstrate that single stage open intramedullary nailing is a safe and effective surgical procedure for the treatment of neglected fractures of shaft of femur.

Biography

Dr. Wazir Fahad Jan obtained his M.B.B.S degree from ASCOMS, University of Jammu in 2009. He then did postgraduation in the field of Orthopaedics. He has two postgraduate qualifications in the discipline of Orthopaedics. 1. Diploma Orthopaedics (D. ORTHO) obtained from University of Jammu in 2013. 2. (Diplomate Of National Board) DNB Orthopaedics from National Board of Examination in Medical Sciences (NBEMS), New Delhi in 2016. He has extensive expertise in the field of Orthopaedic surgery having performed a wide variety of orthopaedic surgical procedures. He has more than 15 publications published in national and international journals.



Dr. Yahya Abu-Seido*, Dr. Frances Freer, Mr. James Li, Mr. Michael David

Trauma and Orthopaedics Department, University Hospitals Coventry and Warwickshire NHS Trust, Coventry, United Kingdom

Improving efficiency in elective hand surgery: A check and consent clinic model to reduce day-of-surgery cancellations

Elective hand surgery lists are often disrupted by last-minute cancellations or delays, usually due to unresolved medical issues, symptom changes, or incomplete consent — particularly when there is a long gap between listing and surgery. To address this, we introduced a consultant-led check and consent clinic to review patients shortly before their procedure.

We retrospectively reviewed all patients attending the clinic between April 2022 and January 2024. Day-case hand surgery patients were included, and clinic letters and operation notes were reviewed for demographics, management changes, and reasons for alteration.

67 patients were seen. 31 (46%) had a change in management:

- 10 were converted to non-operative care (splints or injection)
- 11 required no further treatment due to symptom resolution or comorbidities
- 10 underwent a modified procedure (e.g., unilateral instead of bilateral, or change in approach)
- The clinic prevented 21 same-day cancellations, saving nearly four full-day operating lists. Based on NHS national tariffs, clinic costs were £11,323, while avoided procedures saved £23,940, giving a net saving of £12,617.

A pre-operative check and consent clinic significantly reduced day-of-surgery cancellations and improved theatre efficiency. This model could be adapted to other elective orthopaedic pathways.

Biography

Dr. Yahya Abu-Seido is a Core Surgical Trainee in Trauma and Orthopaedics at University Hospitals Coventry and Warwickshire NHS Trust. He graduated from University College London Medical School and completed his Foundation Training before working as a Junior Associate at McKinsey & Company, where he supported healthcare and operational improvement projects. This experience sparked his interest in optimising surgical services and patient pathways. Returning to clinical training allowed him to combine his passion for trauma and orthopaedics with his background in service improvement.

3rd Edition of Global Conference on
**Physical Medicine
and Rehabilitation**

3rd Edition of
**World Orthopedics
Conference**

SEPT
15-17

POSTER PRESENTATIONS



Ambrose Loc Ngo^{1*}, Cameron Sabet², Gabrielle Dykhous³, Ayah Ibrahim⁴, Taylor J. Manes⁵, Arsalaan Sayyed⁶, Shaheryar Asad⁷, Benjamin C. Taylor⁸ MD

¹College of Osteopathic Medicine, Kansas City University, Joplin, MO, USA

²Georgetown University Medical Center, Washington, DC, USA

³Weill Cornell Medical College, Weill Cornell Medicine, New York, NY, USA

⁴Burrell College of Osteopathic Medicine, Las Cruces, NM

⁵Campbell University School of Osteopathic Medicine, Lillington, NC, USA

⁶Department of Orthopaedic Surgery, OhioHealth Doctors Hospital, Columbus, OH, USA

⁷California Northstate University College of Medicine, CA, USA

⁸Grant Medical Center, Columbus, OH, USA

Temporal analysis of the epidemiology of upper extremity amputations in the United States: An analysis of the global burden of disease database from 1990-2019

Background: Upper extremity amputations are devastating injuries on medical, psychological, and functional levels alike. To better understand their epidemiology, this study aimed to evaluate the region- and sex-specific differences of both unilateral and bilateral upper extremity amputations across the United States (U.S.) from 1990–2019.

Methods: The global burden of disease database was utilized to collect epidemiological data pertaining to upper extremity amputations in the U.S. from 1990–2019. This data included Years Lived with Disability (YLDs), prevalence rates, and incidence rates per 100,000 people. Using the U.S. census bureau definitions, the data was stratified into four regions: The Northeast, the Midwest, the South, and the West. Differences in YLDs, prevalence, and incidence rates between regions and between sexes were evaluated. Statistical significance was defined as $p < 0.05$.

Results: From 1990-2019, the U.S. saw a 34.51% decrease in YLDs, 34.34% decrease in the prevalence, and a 37.38% decrease in the incidence of unilateral upper extremity amputations. In addition, the U.S saw a 51.32% decrease in YLDs, 48.94% decrease in the prevalence, and 56.80% decrease in the incidence of bilateral upper extremity amputations. Nationally, men were more likely to experience higher rates of YLDs, prevalence, and incidence of unilateral UEAs ($p < 0.001$). Regional analysis demonstrated that the northeast region demonstrated the highest overall mean YLDs, prevalence and incidence of upper extremity amputations, whereas the south region experienced the lowest rates. Men were more likely to experience higher YLDs, prevalence, and incidence of unilateral and bilateral upper extremity amputations in each of the regions compared to women ($p < 0.05$).

Conclusions: From 1990 to 2019, the U.S. experienced a decrease in the YLDs, prevalence, and incidence of upper extremity amputations. Men experienced higher rates than women across each region. The northeast had the highest overall rates, while the south had the lowest. These trends highlight significant gender and regional disparities in the impact of upper extremity amputations.

Biography

Ambrose Ngo is a second-year medical student at Kansas City University College of Osteopathic Medicine (KCU-COM). He earned a Bachelor of Arts in Sociology from UCLA, followed by a Master of Science in Stem Cell Biology and Regenerative Medicine from USC. Since beginning medical school, he has engaged in diverse research projects spanning anatomy, osteopathic medicine, and medical education. Ambrose is committed to leveraging insights from conferences and research to develop the skills necessary to become a well-rounded and competent physician. After medical school, he aspires to specialize in orthopedic surgery.



Ambrose Ngo^{1*}, Gabrielle Dykhous², Phillip McKegg³, Peter Spencer⁴, Arsalaan Sayyed⁵, Taylor J. Manes⁶, Morgan Turnow³, Nathaniel Long³

¹Kansas City University, College of Osteopathic Medicine, Joplin, MO, USA

²Weill Cornell Medical College, Weill Cornell Medicine, New York, NY, USA

³Detroit Medical Center, Harper University Hospital, Detroit, MI, USA

⁴Ohio University Heritage College of Osteopathic Medicine, Cleveland, OH, USA

⁵Campbell University School of Osteopathic Medicine, Lillington, NC, USA

⁶Department of Orthopaedic Surgery, OhioHealth Doctors Hospital, Columbus, OH, USA

Epidemiology of shoulder dislocations in the united states from 1990 to 2019: A temporal study using the global burden of disease database

Introduction: The shoulder joint is a common site for joint dislocation, with many individuals suffering from recurrent dislocations following treatment. The purpose of this study was to evaluate the epidemiology of shoulder dislocations in the United States from 1990 - 2019.

Methods: The Global Burden of Disease database was utilized to collect epidemiological data on shoulder dislocations in the United States (U.S.) from 1990 - 2019. This data included age-standardized rates of Years Lived with Disability (YLDs), prevalence rates, and incidence rates per 100,000 people. Using the U.S. Census Bureau definitions, the data were stratified into four regions: The Northeast, Midwest, South, and West. Bartlett's test was used to assess whether the variance of the dataset was equal. Welch's ANOVA was performed to assess differences in YLDs, prevalence, and incidence rates between regions.

Results: From 1990-2019, there was an 8.69% decrease in mean YLDs, an 8.69% decrease in prevalence rates, and a 9.14% decrease in mean incidence rates of shoulder dislocations. Women experienced a 0.78% increase in mean YLDs, a 0.77% increase in mean prevalence rates, and a 0.27% increase in mean incidence rates of shoulder dislocation. Men experienced a 15.45% decrease in mean YLDs, a 15.45% decrease in mean prevalence rates, and a 15.82% decrease in mean incidence rate of shoulder dislocations. Regardless of region, men were more likely to experience a higher mean rate of YLDs (1.06 vs. 0.79, $p < 0.001$), higher mean prevalence rates (17.16 vs. 12.70, $p < 0.001$), and higher mean incidence rates (115.25 vs. 84.59, $p < 0.001$) of shoulder dislocations. The West region experienced the highest mean rate of YLDs, the highest mean prevalence rates, and the highest mean incidence rates of shoulder dislocation. The Northeast region experienced the lowest mean rates of YLDs, mean prevalence rates, and mean incidence rates. Men experienced higher mean rates of YLDs, prevalence, and incidence of shoulder dislocations compared to women ($p < 0.001$).

Conclusion: From 1990 to 2019, the U.S. witnessed a decline in mean YLDs, incidence and prevalence rates for shoulder dislocations. This trend varied by gender, with men experiencing

notable decreases across these metrics, while women saw slight increases. Overall, men consistently had higher rates of shoulder dislocations compared to women. Geographically, the Western region had the highest rates, whereas the Northeast had the lowest.

Biography

Ambrose Ngo is a second-year medical student at Kansas City University College of Osteopathic Medicine (KCU-COM). He earned a Bachelor of Arts in Sociology from UCLA, followed by a Master of Science in Stem Cell Biology and Regenerative Medicine from USC. Since beginning medical school, he has engaged in diverse research projects spanning anatomy, osteopathic medicine, and medical education. Ambrose is committed to leveraging insights from conferences and research to develop the skills necessary to become a well-rounded and competent physician. After medical school, he aspires to specialize in orthopedic surgery.



Ampili Elizabeth Mathews

Te Whatu Ora Hawke's Bay Hospital, New Zealand

Paediatric cervical spine development and ethnic variation: A CT based study from a New Zealand cohort

Purpose: To define the sub-axial cervical spine dimensions in a paediatric cohort and assess influence of ethnicity.

Overview of literature: Variation in cervical spine dimensions is linked to the risk of myelopathy or spinal cord injury. Previous studies have reported ethnic differences in adult canal dimensions, either as absolute values or canal: Vertebral Body (VB) ratios. However, data on children is limited.

Methods: CT scans of children <18 years (excluding pathology) were assessed for Anteroposterior (AP) and transverse VB and canal dimensions at the mid-pedicle level, and canal: VB ratios calculated. Correlation and ANCOVA analyses compared findings between New Zealand European (NZE) and Māori.

Results: 111 patients were assessed (63 NZE, 48 Māori). VB and canal dimensions were larger in NZE, however canal: VB ratios were smaller in NZE (significant at C7 only, $p=0.011$). Age correlated strongly with mean VB AP diameter and moderately with canal: VB ratio. ANCOVA showed ethnicity (NZE) significantly predicted VB dimensions, especially transverse diameter at C4–6, while age had a lesser effect. Canal: VB ratios decreased with age from C3 to C7, with lower R^2 values suggesting additional influencing factors.

Clinical relevance: This is the first study using local paediatric data to assess cervical spine development. Vertebral body dimensions correlated more strongly with age than canal dimensions, with ethnicity having a modest but notable effect—especially on transverse VB diameter. These multifactorial findings have implications for trauma assessment, and the evaluation of SCI risk in adolescents, particularly in high-impact sports.

Keywords: Paediatric Cervical Spine, Spinal Canal, Vertebral Body, Ethnicity.

Biography

Dr Ampz Mathews is a non-training Orthopaedic Registrar at Waikato Hospital, New Zealand. With a background in biochemistry and a strong interest in surgical education, her research has explored imposter syndrome among junior orthopaedic registrars and the role of psychological safety in operative learning. She is currently involved in studies on operative autonomy, clavicle fracture management, and imaging accuracy in upper limb trauma. Her work aims to enhance both registrar training and patient outcomes.



Carolina Pavlenco^{1*} BS, CSCS; Bilal Khilfeh¹ BS; Xing Wang² Ph.D; Michael Saper² DO, ATC, CSCS

¹University of Washington School of Medicine, Seattle WA

²Seattle Children's Hospital, Seattle WA

Six month shoulder instability-return to sport after injury scale predicts return to sport and patient reported outcomes at 1-year after arthroscopic shoulder surgery in adolescent athletes

Background: Return To Sport (RTS) after shoulder stabilization surgery depends on both functional recovery and psychological readiness. The Shoulder Instability-Return to Sport after Injury (SIRSI) scale is a validated tool for assessing psychological readiness, but its role in predicting 1-year postoperative outcomes, including Patient-Reported Outcomes (PROs) and RTS success, has not been studied extensively.

Purpose: To evaluate the relationship between 6-month SIRSI scores and PROs and RTS at 1-year follow-up in adolescent patients after arthroscopic shoulder stabilization.

Study Design: Retrospective cohort study.

Methods: Adolescent patients with shoulder instability who underwent arthroscopic shoulder surgery were included. SIRSI scores, which range from 0 to 100, were used to assess psychological readiness, with a score of 55 or higher indicating readiness for RTS. Additional PROs, including the American Shoulder and Elbow Surgeons (ASES) score, Tegner Activity Scale, QuickDASH, and Pediatric/Adolescent Shoulder Survey (PASS) score, were collected at 6 months and 1-year postoperatively. Spearman's correlation was used to evaluate associations between 6-month SIRSI scores and 1-year PROs, while Mann-Whitney U tests compared SIRSI scores between RTS success and failure groups. Changes in PROs from 6 months to 1 year were assessed using the Wilcoxon signed-rank test.

Results: Twenty-three adolescent athletes (median age 16.99 years; 65.2% male) were included. Surgery was performed for anterior instability in 69.6% of patients. The dominant arm was involved in 69.6% of patients. Correlations were observed between 6-month SIRSI scores and 1-year ASES ($\rho=0.42$, 95% CI [0.01, 0.71]) and Tegner Activity Scale scores ($\rho=0.51$, 95% CI [0.12, 0.76]). The overall RTS rate was 73.9%. Athletes who returned to their primary sport had higher median 6-month SIRSI scores compared to those who did not return (78.3 % vs 46.7%, $p=0.01$). All participants showed statistically significant improvements in SIRSI, ASES, Tegner, QuickDASH, and PASS scores between 6 months and 1 year ($p<0.05$).

Conclusion: Psychological readiness assessed by SIRSI at 6 months is a significant predictor of 1-year functional recovery as demonstrated by patient-reported outcomes and RTS success. Athletes with SIRSI scores ≥ 55 were more likely to successfully return to sport, underscoring the scale's utility in postoperative assessments.

Biography

Carolina Pavlenco, a third-year medical student at University of Washington, holds a bachelor's in Nutrition and Exercise Physiology from Washington State University and is a Certified Strength and Conditioning Specialist. Inspired by working with athletes, in medical school, she focused on research utilizing force plates in ACL injury prevention and now has a growing interest in pediatric sports medicine. Born in Moldova, she mentors underrepresented students and is the founding president of the Ruth Jackson Orthopedic Society UW student chapter to encourage women to pursue orthopedic surgery and promote diversity in the field. Her free time is spent long-distance running.



Franchesca Morel^{1*}, Francisca Rijo² Md

¹Universidad Iberoamericana (UNIBE), Santo Domingo, Dominican Republic

²Centro De Rehabilitación Dra. Rijo, Higüey, Dominican Republic

Early postoperative mobilization reduces the risk of adhesive capsulitis following shoulder arthroscopy

Introduction: Adhesive capsulitis or frozen shoulder is a frequent complication after shoulder arthroscopy, mostly associated with delayed postoperative mobilization. This condition often leads to fibrosis of the joint capsule, persistent pain, functional impairment, and even a second surgical intervention.

Objective: To determine that early initiation of physical therapy (less than 30 days post-op) reduces the incidence of adhesive capsulitis and improves clinical outcomes.

Methods: A retrospective observational study was conducted with six adult patients (aged 45–60) who underwent shoulder arthroscopy for tendon or rotator cuff repair. Based on the time of initiating physical therapy, patients were categorized into two groups:

- Early Mobilization Group: Therapy started within 10-20 days post-surgery
- Delayed Mobilization Group: Therapy started after ≥ 30 days post
- Clinical outcomes assessed included:
- Active abduction ranges of motion (ROM, in degrees)
- Functional mobility score (FM scale: 1–5)
- Pain improvement-Clinical diagnosis of adhesive capsulitis (based on restricted ROM and pain)

Result:

Early Mobilization Group (n=4):

Patient 1: Achieved ROM of 110° when the initial ROM was 80°, FM initial score of 2/5 for an achieved score of 3/5, with significant pain reduction and no signs of adhesive capsulitis. 16 days post op when started.

Patient 2: Achieved ROM 95° when the initial ROM was 50°, FM initial score of 2/5 for an achieved score of 3/5, with significant pain reduction and no signs of adhesive capsulitis. 20 days post op when started

Patient3: Achieved ROM 90° when the initial ROM was 60°, FM score of 2/5 for an achieved score of 3/5, with significant pain reduction and no signs of adhesive capsulitis. 18 days post op when started.

Patient4: Achieved ROM 105° when the initial ROM was 60°, FM score of 3/5 that remains the same. with significant pain reduction and no signs of adhesive capsulitis. 10 days post op when started.

Delayed Mobilization Group (n=2):

Both patients showed to the consult with more than 30 days post-surgery with an immobilized shoulder for all those days presenting limited ROM ($<60^\circ$), lower FM scores ($\leq 2/5$), persistent pain, and were diagnosed with adhesive capsulitis. One of them required a second surgical intervention.

Conclusion: Early postoperative mobilization after shoulder arthroscopy is associated with a lower or zero incidence of adhesive capsulitis and improved functional recovery even in middle aged adults. These preliminary findings supports and confirms the relevancy of the incorporation of early physical therapy into postoperative protocols for shoulder surgeries.

Limitations: Small sample size; further prospective studies are recommended.

We encourage orthopedic surgeons to refer patients to physical therapy as early as possible after surgery. Prolonged shoulder immobilization is not recommended and may contribute to the development of adhesive capsulitis and the patient recovery can be slower and painful or may need and second surgical intervention.



Gibraltar Conde Aideé^{1*}, Roa Suárez Alfredo Alejandro¹, Torres Carranza Erika Antonia¹, Santiago Germán David², González Martínez Jonathan Josue², Martínez Soriano Estefanya Samara¹

¹High Specialty Medical Unit of Traumatology, Orthopedics and Rehabilitation Dr. Victorio de la Fuente Narváez. North Physical Medicine and Rehabilitation Unit, Mexican Social Security Institute, México City, México

²High Specialty Medical Unit of Traumatology, Orthopedics and Rehabilitation Dr. Victorio de la Fuente Narváez. Traumatology Hospital, Mexican Social Security Institute, México City, México

Association between arthropathy and peripheral neuropathies in adults with hemophilia

Introduction: Musculoskeletal hemorrhages are the most frequent in People with Hemophilia A and B (PWH), among them hemarthroses have an incidence of up to 70%, evolving to arthropathy. One of the neurological complications of arthropathies are injuries due to entrapment in peripheral nerves, combined with different adjacent causes.

Objective: To establish the association between the degree of hemophilic arthropathy and the presence of peripheral neuropathies in PWH.

Material and Methods: An observational, analytical and retrospective study of PWH was carried out, from 08/18/2023 to 07/05/2024. 15 records of PWH from the outpatient and electrodiagnosis service were analyzed. The inclusion criteria were: Adult PWH with arthropathy, who had undergone electroneuromyography studies with a conclusion of peripheral neuropathy and the non-inclusion criteria: They did not have recent x-rays. The following variables were analyzed: Age, degree of hemophilic arthropathy, type of peripheral neuropathy, occupation, laterality, use of walking aids and comorbidities. Statistical analysis was performed with Spearman's correlation test. The protocol was approved by the health ethics and research committee with registration number R-2024-340-068.

Results: A sample of n=15 patients with a diagnosis of hemophilic arthropathy and peripheral neuropathy was analyzed. The average age was 31±9.6 years. The most frequent peripheral neuropathy was the median nerve (27%) and peroneal nerve neuropathy (20%), the most affected body segment was the lower limb in 67%, at least 53% presented nerve damage and 78% of older patients presented severe grade IV and V arthropathy (Rho=-0.612, p=0.015 and Rho=-0.628, p=0.012), OR=42.0, p=0.010 and OR=18.0, p=0.041.

Conclusions: There is an association between the degree of arthropathy in PWH and the presence of peripheral neuropathies. The most common arthropathy occurred in the lower extremities. However, the most common neuropathy was of the median nerve, which can be attributed to the prolonged use of walking aids, followed by peroneal nerve neuropathy, a consequence of entrapment due to arthropathy.

Prophylactic hematological treatment and comprehensive treatment, including rehabilitation, modify the evolution of arthropathy and its complications.

Biography

M.D. Aidee Gibraltar Conde studied Medicine and speciality of Rehabilitation Medicine at the National Autonomous University of México (UNAM) graduated in 2006. She received fellowship in 2010 and 2017 supervised by Felipe Querol at the La Fe Hospital, Valencia, Spain. She obtained the position of an Titular Professor at the UNAM. She works in High Specialty Medical Unit of Traumatology, Orthopedics and Rehabilitation Dr. Victorio de la Fuente Narváez of the Mexican Social Security Institute in México City, and collaborate in National Hemophilia Federation of the Mexican Republic for 15 years. She has published on topics neurological rehabilitation and haemophilia rehabilitation.



Gibraltar Conde Aideé

High Specialty Medical Unit of Traumatology, Orthopedics and Rehabilitation

Dr. Victorio de la Fuente Narváez. North Physical Medicine and Rehabilitation Unit,
Mexican Social Security Institute, México City, México

Advances in hemophilia rehabilitation

Physical medicine and rehabilitation aim to evaluate, diagnose, prevent and treat disability in people. Specifically in patients with hemophilia, its objective is to maintain the highest degree of functional capacity and independence, maintain neuromusculoskeletal functioning as much as possible, as well as prevent hemarthrosis and arthropathies. The clinical evaluation in hemophilia is carried out based on the joint health scale (HJHS v. 2.1), which assesses joint characteristics such as inflammation, range of motion, crepitation, pain, muscle strength and gait. It is important to consider joint evaluation with ultrasound and other imaging studies such as magnetic resonance imaging.

Prevention of arthropathy is one of the main goals of treatment. Replacement with coagulation factor concentrates has been shown to prevent or reduce the impact of arthropathies.

Rehabilitation treatment helps reduce pain, reduce hemarthroses, improve joint and muscle function, with the aim of reducing the impact of anatomical and/or physiological deficiencies, improving daily activities and thus the social and work participation of patients in their environment.

Rehabilitation treatment must consider pharmacological options, physiotherapy, occupational therapy, as well as the prescription of orthoses and/or prostheses, gait aids, technical aids, without neglecting the psychosocial aspects of the patients to have a comprehensive rehabilitation treatment that goes beyond physical therapy, hence the benefit of including a multidisciplinary team.

As in other pathologies, in hemophilia it has been demonstrated with evidence that the basis of rehabilitation treatment is therapeutic exercise (strengthening, balance, flexibility, proprioception), helping to reduce pain, increasing ranges of movement, strength, stability, improving the progress and quality of life of patients. Last but not least, another objective in rehabilitation is to encourage physical activity and sport in patients.

Biography

M.D. Aideé Gibraltar Conde studied Medicine and speciality of Rehabilitation Medicine at the National Autonomous University of México (UNAM) graduated in 2006. She received fellowship in 2010 and 2017 supervised by Felipe Querol at the La Fe Hospital, Valencia, Spain. She obtained the position of an Titular Professor at the UNAM. She works in High Specialty Medical Unit of Traumatology, Orthopedics and Rehabilitation Dr. Victorio de la Fuente Narváez of the Mexican Social Security Institute in México City, and collaborate in National Hemophilia Federation of the Mexican Republic for 15 years. She has published on topics neurological rehabilitation and haemophilia rehabilitation.



Hao Hong

Department of Orthopaedic Surgery, Chongqing Orthopedic Hospital of Traditional Chinese Medicine, Chongqing, China

Unilaterally extrapedicular versus transpedicular kyphoplasty in treating osteoporotic lumbar fractures: A randomized controlled study

Objectives: The unilaterally extrapedicular approach is adopted increasingly to perform balloon kyphoplasty in treating osteoporotic lumbar fractures, which is intended to improve radiological and clinical efficacy. We compared the efficacy and safety of this method with a unilaterally transpedicular approach.

Methods: The unilaterally extrapedicular approach is adopted increasingly to perform balloon kyphoplasty in treating osteoporotic lumbar fractures, which is intended to improve radiological and clinical efficacy. We compared the efficacy and safety of this method with a unilaterally transpedicular approach.

Results: A total of 80 participants were assigned to the treatment group (n=40) and control group (n=40), with three and two patients lost to follow-up during 12 months in the two groups respectively. At one month postoperatively, the treatment group showed a greater reduction in VAS score from baseline, compared with the control group (mean difference between groups=0.63, 95% CI 0.19-1.06). There were no significant between-group differences in restoration in anterior, middle, and posterior vertebral body ($P>0.05$). No significant differences were found in the rate of cement leakage and perioperative hemoglobin loss ($P>0.05$).

Conclusion: Compared with balloon kyphoplasty via the unilaterally transpedicular approach in treating lumbar OVCFs, the unilaterally extrapedicular approach appears to be promising in achieving effective pain relief, adequate cement infusion, short operation time, less fluoroscopy exposure, and comparable risk of cement leakage and vessel injury. It is an alternative approach for lumbar OVCFs treated by kyphoplasty.



Hemanth Senthilnathan

Te Whatu Ora New Zealand, New Zealand

Comparing measurement techniques for posterior tibial slope

The Posterior Tibial Slope (PTS) is a critical anatomical feature of the tibia that influences knee biomechanics, particularly in relation to Anterior Cruciate Ligament (ACL) injuries and knee osteoarthritis. The measurement is usually taken on short knee lateral radiographs, but it is not certain which is the most accurate and comparable measurement to the full length radiograph.

Background: The posterior tibial slope has been linked to knee stability and function, with variations in its angle affecting the risk of ACL injuries and the development of osteoarthritis. Understanding the measurement techniques and implications of PTS is essential for clinicians and researchers.

Methods: This scoping review synthesizes 4 current papers that include current methodologies for measuring PTS. We screened 774 paper, 32 included for full text review and 4 included for the final analysis. They described radiographic techniques, and variations in measurements in short leg lateral knee radiographs compared to long leg radiographs.

Results: Studies indicate that on average the posterior tibial slope is over-estimated by 3 degrees on short leg radiographs compared to long leg radiographs. There is not enough data to comment on the difference between measurements of posterior tibial slope from anterior or posterior tibial cortex, when comparing to long leg radiographs. This shows an area needed for further research and development in this field.

Conclusion: Accurate assessment of the posterior tibial slope is vital for understanding its role in knee pathology. Further research is recommended to evaluate the most accurate measurement method and its applicability to future orthopaedic procedures including robotic assisted total knee arthroplasty.

Biography

Hemanth Senthilnathan, Studied in University of Otago, Dunedin, New Zealand. Graduated 2019. Present working in Hawkes Bay Hospital, a non urban area as Orthopaedic Registrar. Also worked in Queensland, Australia



Joseph McAuley*, Adam Burns, Deil Patel, Bryn Jones

Department of Trauma & Orthopaedic Surgery, Glasgow Royal Infirmary, 84 Castle Street, Glasgow, Scotland

Factors affecting transfusion and haemoglobin drop following IM tibial nails

Introduction: Our current hospital MSBOS requires 2x valid Group & Saves for IM tibial nails. There are no national or international guidelines for this operation, and there are very few published papers discussing blood loss following IM tibial nails. As this injury is high risk for compartment syndrome and we felt the risk of transfusion was low, we suspected excess unnecessary testing was causing surgical delays and cost. A retrospective cohort study was carried out to investigate the rate and risk factors for transfusion and Hb drop following IM tibial nails.

Method: Patients details were collected for all IM tibial nails in GRI between 1/1/2020–1/1/2025. Open fractures requiring free flap coverage and polytraumas were excluded. Open fractures which were viable for primary wound closure were included. Risk factors assessed included sex, age, BMI, fracture type, approach, ASA, pre-op Hb, tourniquet use, TXA use, coagulation screen, platelets, antiplatelet/anticoagulant use and smoking status.

Results: 189 patients met inclusion criteria from 1/1/2020–1/1/2025. The median age was 44 with an even spread of patients across ASA 1-3. 304 G&S were sent purely on acute admission and 34 units of packed red cells were cross-matched. Of those, 3 patients (1.59%) required transfusion post-op, all day 2 post-op, one of whom was transfusion dependent at baseline. 134 patients had pre-and post-op FBC. Average Hb drop was 23.01 ± 11.18 g/L. Open fractures showed a statistically significant increase in Hb drop ($p=0.001$). Pre-op anaemia showed a statistically significant decrease in post-op Hb drop ($p=<0.001$). This was confirmed on univariate and multivariate analyses. There were no other statistically significant correlations.

Conclusion: Open fractures were more likely to cause an increased Hb drop, whilst presence of anaemia pre-op caused a reduced Hb drop. This did not correlate to an increased risk of transfusion as all transfusions were closed fractures. With only 3 transfusions, factors contributing to transfusion requirements could not be analysed. We feel this supports the hypothesis that our local MSBOS G&S requirements for IM tibial nails should be reduced.

Biography

Dr. Joseph McAuley studied Medicine at the University of Dundee, Scotland and graduated with MBChB in 2022. During this time, he undertook an intercalated BSc degree in Applied Orthopaedic Technology, completing this in 2020. He has since worked in the west of Scotland, completing foundation training and working as a Clinical Fellow in Orthopaedics at Glasgow Royal Infirmary.



**Joseph McAuley*, Nima Razii, Jack Clark,
Ashish Mahendra, Sanjay Gupta**

Department of Trauma & Orthopaedic Surgery, Glasgow Royal Infirmary, 84 Castle Street, Glasgow, Scotland

Injectable synthetic bone graft substitute (GeneX) in the surgical management of benign bone tumours: Further experiences from a tertiary musculoskeletal oncology centre

Background: Intralesional curettage is a common treatment for benign bone tumours, often leaving contained bone voids that require filling. There is no national or international consensus regarding the best method or material for filling these defects. GeneX, a synthetic composite of β -tricalcium phosphate and calcium sulfate, offers osteoconductive properties with complete resorption and radiolucency, beneficial for post-operative imaging surveillance with plain radiographs. There is little data published regarding the use of GeneX in this setting, and this case series is intended to add to the evidence bank for surgeons considering its use.

Methods: We conducted a retrospective case series at a tertiary musculoskeletal oncology centre including 22 patients treated between April 2019 and May 2025. All patients underwent curettage of benign lesions with subsequent GeneX implantation. Data on demographics, lesion characteristics, radiographic incorporation, complications, and functional recovery were analysed.

Results: The cohort included 22 patients (13 males, 9 females; mean age 38 years). Most common diagnoses were enchondroma and aneurysmal bone cyst. Radiographic evidence of graft incorporation into bone was observed in 86% of cases within 3–12 months. Of the three without radiographic confirmation, two lacked adequate follow-up imaging—one had no postoperative radiographs, and the other had imaging only at 8 weeks, likely before resorption onset. The final patient experienced wound breakdown and infection necessitating graft removal and revision to PMMA. One non-GeneX-related fracture was managed conservatively. All patients returned to full weight-bearing, with the majority doing so by 6 weeks postoperatively. No tumour recurrences were noted during follow-up (mean: 33.9 months).

Conclusion: GeneX appears to be a safe and effective bone graft substitute for filling contained defects following curettage of benign bone tumours. Its complete resorption and radiolucent final state support its use in oncologic settings where follow-up imaging clarity is essential. Further studies with control groups are warranted to validate long-term comparative outcomes.

Biography

Dr. Joseph McAuley studied Medicine at the University of Dundee, Scotland and graduated with MBChB in 2022. During this time, he undertook an intercalated BSc degree in Applied Orthopaedic Technology, completing this in 2020. He has since worked in the west of Scotland, completing foundation training and working as a Clinical Fellow in Orthopaedics at Glasgow Royal Infirmary.



José J. Aponte-Reyes MD, José I. Acosta-Julbe MD, Joseph Salem-Hernández* BS, Emmanuel J. Belardo Del Río MD, Fernando J. Arocho-Oquendo BS, Christian A. Foy Parrilla MD, FAAOS

School of Medicine, University of Puerto Rico, Medical Sciences Campus, San Juan, Puerto Rico

Functional outcomes and imaging-related factors in distal radius fractures among older adults: A comprehensive review

Background: Distal Radius Fractures (DRFs) are common in older adults, often resulting in significant functional impairments and reduced quality of life. Radiographic parameters such as dorsal/volar angulation, radial inclination, radial height, ulnar variance, and articular incongruity are emphasized in treatment planning, yet their relationship with functional recovery remains inconsistent. This systematic review synthesizes evidence from 23 studies to evaluate the associations between imaging-related factors and functional outcomes in elderly DRF patients, aiming to inform strategies that prioritize functionality over strict radiological alignment.

Methods: A review of 23 studies was conducted, analyzing radiographic parameters—dorsal/volar angulation, radial inclination/height, ulnar variance, and articular incongruity—and their relationship with functional recovery. Outcomes were assessed using metrics such as the Disabilities of the Arm, Shoulder, and Hand (DASH) score, the Patient-Rated Wrist Evaluation (PRWE), grip strength, and range of motion. Treatment approaches, including surgical (e.g., volar locking plate fixation) and conservative (e.g., casting) methods, were evaluated for their effectiveness.

Results: Radial inclination/height (14/23 studies), dorsal/volar angulation (10/23), and ulnar variance (10/23) were the most frequently studied radiographic factors. Surgical interventions improved radiological alignment but did not consistently correlate with better functional outcomes. Radial shortening and articular step-off were associated with worse outcomes, while radial inclination and ulnar variance correlated with improved recovery. Grip strength and range of motion emerged as stronger predictors of functional recovery than radiographic alignment, underscoring the importance of patient-centered approaches. Variability in findings highlights the influence of individual factors like age, comorbidities, and activity levels.

Conclusion: Radiological parameters have limited predictive value for functional recovery in elderly DRF patients. Management should prioritize functionality, grip strength, and range of motion over radiographic alignment. Personalized protocols are essential to address the unique needs of older adults and improve long-term outcomes.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Biography

Joseph Salem is a rising fourth-year medical student at the University of Puerto Rico School of Medicine with a strong background in orthopaedic surgery research. Of Puerto Rican and Lebanese descent, he brings a diverse perspective to his work in musculoskeletal health. His work focuses on clinical and imaging-related outcomes in distal radius fractures, the efficacy and long-term recovery of surgical interventions for lateral epicondylitis, and the cross-cultural adaptation and validation of the Early-Onset Scoliosis Self-Report Questionnaire. He has presented his research at national and international conferences, with key contributions in robotic-assisted total joint arthroplasty, surgical burnout in Hispanic populations, and cross-cultural adaptations of orthopaedic assessment tools. Additionally, he has authored case reports, including a rare presentation of bilateral tibial tubercle avulsion fractures in an adolescent athlete. He has also participated in competitive research internships, including a program at Northwestern University Feinberg School of Medicine, where he studied healthcare disparities. His research background extends to molecular and regenerative biology, with undergraduate work on intestinal regeneration in echinoderms published in peer-reviewed journals. Passionate about advancing musculoskeletal research, he strives to contribute to evidence-based orthopaedic care through both clinical practice and academic inquiry.



Joseph Salem-Hernández^{1*} BS; Cristian Cortés-Nieves¹ BS; Hiroko Matsumoto² MD; Pablo Marrero¹ MD, FAAOS; Norman Ramírez-Lluch³ MD, FAAOS-FAAP

¹School of Medicine, University of Puerto Rico, Medical Sciences Campus, San Juan, Puerto Rico

²Harvard Medical School, Pediatric Orthopaedic Surgery Department, Boston, Massachusetts

³Mayagüez Medical Center, Pediatric Orthopaedic Surgery Department, Mayagüez, Puerto Rico

Cross-cultural adaptation and validation of the Spanish version of the Early-Onset Scoliosis Self Report Questionnaire (EOSQ-SELF)

Purpose: The Early-Onset Scoliosis Self-Report Questionnaire (EOSQ-SELF) is a self-assessment tool for measuring Health-Related Quality of Life (HRQoL) in children with Early-Onset Scoliosis (EOS). It complements the 24-item Early-Onset Scoliosis Questionnaire (EOSQ-24), which relies on proxy reporting. Originally validated in English and Chinese, this study aims to translate, culturally adapt, and validate the EOSQ-SELF for Spanish-speaking Hispanic populations, enhancing its applicability in assessing HRQoL in children with EOS.

Methods: A cross-sectional study was conducted from August to September 2024 with children aged 7 to 14 years diagnosed with EOS, recruited from pediatric orthopedic centers in Puerto Rico. The EOSQ-SELF was translated and culturally adapted using forward-backward translation and expert review. Participants completed the questionnaire twice, with a two-week interval. Reliability was evaluated through internal consistency (Cronbach's α) and test-retest reliability. Content validity was assessed by an expert panel, while discriminative ability was analyzed using nonparametric tests and regression. (Approved by IRB)

Results: Thirty participants (mean age 11 years, 53.3% female) provided valid responses. The mean Cobb angle was $60.12^\circ \pm 18.30^\circ$. The Spanish EOSQ-SELF demonstrated excellent internal consistency (Cronbach's $\alpha=0.937$) and effectively distinguished between different scoliosis severities and types.

Conclusions: The Spanish EOSQ-SELF is a reliable and valid tool for assessing self-reported HRQoL in Hispanic children with EOS. It has significant utility in clinical and research settings, broadening the scope of EOS patient-centered care.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Biography

Joseph Salem is a rising fourth-year medical student at the University of Puerto Rico School of Medicine with a strong background in orthopaedic surgery research. Of Puerto Rican and Lebanese descent, he brings a diverse perspective to his work in musculoskeletal health. His work focuses on clinical and imaging-related outcomes in distal radius fractures, the efficacy and long-term recovery of surgical interventions for lateral epicondylitis, and the cross-cultural adaptation and validation of the Early-Onset Scoliosis Self-Report Questionnaire. He has presented his research at national and international conferences, with key contributions in robotic-assisted total joint arthroplasty, surgical burnout in Hispanic populations, and cross-cultural adaptations of orthopaedic assessment tools. Additionally, he has authored case reports, including a rare presentation of bilateral tibial tubercle avulsion fractures in an adolescent athlete. He has also participated in competitive research internships, including a program at Northwestern University Feinberg School of Medicine, where he studied healthcare disparities. His research background extends to molecular and regenerative biology, with undergraduate work on intestinal regeneration in echinoderms published in peer-reviewed journals. Passionate about advancing musculoskeletal research, he strives to contribute to evidence-based orthopaedic care through both clinical practice and academic inquiry.



Shafeeqah Zainab¹, Julia Wong^{1*}, Tong Guo¹, Jonathan Tang², Emily Guo³

¹Health and Social Sciences Cluster, Singapore Institute of Technology, Singapore

²Department of Music, University of Sheffield, United Kingdom

³Department of Rehabilitation, National University Hospital, Singapore

It's better for me to live positively: Experiences of persons with aphasia participating in an online choir group in Singapore

Aphasia is an acquired communication impairment caused by damage to the brain. Persons with Aphasia (PWAs) encounter difficulties communicating with others and often experience significant life-altering psychosocial outcomes (e.g., social isolation, loss of jobs and hobbies).

Group singing activities help with speech rehabilitation, reduce stress and improve mood. However, there is little research on online group singing.

To understand how aphasia has affected PWAs and to explore their experiences of participating in an e-choir, we interviewed six PWAs using the Assessment for Living with Aphasia with additional questions pertaining to their participation in the choir. Participants were recruited via Zoom at the start of an e-choir session and in-person when they attended a community event led by the same non-profit organisation that runs e-choir. Consent was sought using an aphasic-friendly participant information sheet and consent form, and all interviews were video recorded. We then transcribed the interviews verbatim and analysed them thematically.

We found that having a positive mindset enhanced PWAs' sense of autonomy and emotional well-being. While PWAs shared that they were unable to do many activities previously enjoyed, having a positive mindset allowed them to seek alternative activities. They enjoyed participating in the choir as they felt comfortable with fellow PWAs who understand each other. Music therapists and volunteers who ran the e-choir over Zoom were encouraging; they provided annotated slides, simplified instructions and taught at a slower pace. The e-choir provided a safe space for PWAs to interact with people outside of their families, which is important for PWAs who might zip [their] mouth when engaging with unfamiliar others. Lastly, the e-choir was more logistically accessible for PWAs who had mobility difficulties, but it might be challenging to build deep connections with others online.

This study shows that PWAs can benefit from participating in e-choirs. Future research could explore ways to enhance its delivery through virtual technology, or to compare with PWAs who participated in in-person choirs.

Biography

Dr. Julia Wong is an Assistant Professor at the Singapore Institute of Technology. She is a Sociologist by training and her research interests lie in the fields of complementary therapies, client empowerment and trauma-informed care.



Macy Leung M.S*, Alvin Poon C.H

Rehabilitation Services and Social Enterprise Division, The Salvation Army, Hong Kong, China

Evaluating the effectiveness of information technology in rehabilitation training for individuals with intellectual and physical disabilities- single case study with multiple-baseline design

Background: This study examined the effectiveness of Information Technology (IT) in rehabilitation training for individuals with physical and Intellectual Disabilities (ID). With increasing integration of technology into healthcare, IT offers potential solutions to address limitations in traditional rehabilitation methods, particularly for populations with complex needs such as ID. Conventional therapies often struggle to sustain engagement or address multifaceted challenges, including motor skill deficits and barriers to independence. This study sought to explore how IT tools could enhance participation, functional outcomes, and psychosocial well-being in this population.

Objective: The primary aim was to evaluate the impact of IT-integrated rehabilitation on functional independence and engagement for adults with ID. Specific goals included (1) improving balance, limb strength, Range of Motion (ROM), and agility; (2) fostering independence in daily living activities (e.g., dressing, toileting); and (3) assessing participant satisfaction and motivation through technology-driven interventions.

Methods: Seven adults with ID participated in a 12-week program involving 40-minute weekly sessions. IT tools — a treadmill, interactive panel, motion-sensor video games, and a standing frame — were selected to target critical functional domains. Each session comprised 30 minutes of IT-based training (e.g., balance games, gait exercises) and 10 minutes of assessments conducted by occupational therapists or physiotherapists. Interventions were tailored to individual capabilities, with adjustments to treadmill speed, game difficulty, and task complexity. Clinical metrics (balance, strength, ROM) and qualitative observations (participation, engagement, satisfaction) were systematically recorded.

Result: Quantitative analysis revealed no statistically significant functional improvements across participants. However, transient gains in balance and mobility were observed during the baseline phase. Qualitative feedback highlighted overwhelmingly positive experiences: participants described sessions as fun, expressed eagerness to attend (happy to attend), and reported heightened motivation (look forward to next session). Clinicians noted increased participation and enjoyment, suggesting improved engagement compared to conventional therapies.

Discussion: The absence of significant functional changes may reflect the short intervention duration, which may inadequately address cumulative motor and cognitive deficits associated with ID and aging. This aligns with prior studies suggesting that prolonged, frequent sessions are critical for measurable progress in populations with complex needs. The lack of functional decline suggests a clinically meaningful maintenance effect, preserving independence in a population prone to physical deterioration. The overwhelmingly positive feedback and sustained participation further emphasizes the application of technology can enhance engagement rather than traditional therapy.

Conclusion: This study demonstrates that IT-integrated rehabilitation fosters engagement, motivation, and psychosocial well-being in adults with ID, even without significant functional improvements. The observed maintenance effect and positive participant experiences advocate for technology as a complementary tool in rehabilitation frameworks.

Biography

Ms. Leung graduated with a BSc in Occupational Therapy and obtained a master's degree in counseling. She has 28 years of extensive experience spanning pediatrics, adult care, and geriatrics across hospital, private, and NGO sectors. Currently, she serves as a Senior Occupational Therapist in Rehabilitation Services at The Salvation Army. She is responsible for planning and promoting innovative clinical techniques, driving service development and enhancing care delivery to meet evolving community needs. She also has a keen interest in conducting studies to evaluate service quality and ensuring continuous improvement in therapeutic offerings.



Maria Jonnalín C. Santos*, MD and Sharon D. Ignacio, MD, FPARM

Department Rehabilitation Medicine, University of the Philippines-Philippine General Hospital, Manila, Philippines

Rehabilitation management of a pediatric patient with mixed bone and soft tissue arteriovenous malformation of the lower extremity: A case report

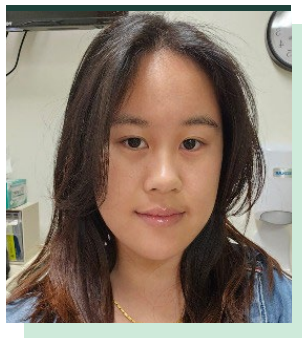
Arteriovenous Malformations (AVMs) are aggressive vascular anomalies that often result in significant morbidity. When present in the lower extremity, it can present with disabling consequences such as pain, hemorrhage, ulceration, dermatologic or osseous changes and clinical manifestations such as leg length discrepancy and pathologic fractures. Embolization therapy is the standard of care of AVMs while extensive lesions often require surgical interventions, including amputation for severe cases.

This is a case of a 16-year-old female seen at a tertiary hospital diagnosed with congenital soft tissue arteriovenous malformation with intra-articular and intra-osseous involvement of the lower extremity presenting with pain, skin discoloration, swelling and mass on the left lower extremity. Because of the extent of disability and severity of the lesion, the patient and the family were already appraised for above knee amputation. However, due to religious reasons, this was not feasible. The patient was then referred for rehabilitation to maximize conservative management and facilitate return of function. At the end of the patient's inpatient rehabilitation and after follow-up during teleconsultation, the patient was able to go back to her usual ADLs, recreational activities and with noted improvement in gait pattern during ambulation.

This case report highlights the role of rehabilitation in the disabling consequences of a congenital lower extremity arteriovenous malformation to facilitate return of function.

Biography

Dr. Maria Jonnalín began her journey in the medical field by earning her Bachelor of Science in Physical Therapy as a valedictorian of her class in 2014 at the De La Salle Health Sciences Institute. She then earned her Doctor of Medicine degree from the University of the East Ramon Magsaysay Memorial Medical Center in 2019. After one year of Post Graduate Internship at the University of the Philippines-Philippine General Hospital (UP-PGH), she pursued residency training in Rehabilitation Medicine at the same institution. Currently, she is an Associate of the Philippine Academy of Rehabilitation Medicine.



Michelle Ho*, Isaac Ho, Qian Wang

ILab Research Institute, Mountain View, CA 94043

Hyperuricemia-induced proinflammatory and immunosuppressive dysregulation circulating immune cell

Background: Hyperuricemia, characterized by elevated serum uric acid levels, is often asymptomatic but has been associated with gout, kidney diseases, autoimmune disorders, cancer, and metabolic syndrome. The clinical management of asymptomatic hyperuricemia remains controversial due to unclear pathogenic effects on individuals. This study aimed to investigate the impact of soluble Monosodium Urate (MSU) stimulation on circulating immune cells to understand the potential immunological consequences of elevated uric acid levels.

Methods: Leukocyte Reduction System (LRS) cells were cultured with or without soluble MSU at 100 $\mu\text{g/mL}$ for 24 hours. Total RNA was extracted for RNA-seq analysis, and cell culture supernatants were collected for Enzyme-Linked Immunosorbent Assay (ELISA) analyses. Differential gene expression analysis as well as gene ontology and pathway enrichment analyses were conducted.

Results: MSU stimulation resulted in significant alterations in gene expression, with 2,228 genes upregulated and 1,636 genes downregulated (\log_2 fold change >0.5 , false discovery rate <0.05). There was a notable shift in immune cell proportions, including decreased percentages of B cells, plasma cells, T cells, and monocytes, and increased percentages of macrophages, Natural Killer (NK) cells, mast cells, eosinophils, and neutrophils. MSU stimulation significantly elevated the production of Th1 cytokine Interferon-Gamma ($\text{IFN}\gamma$) and Th2 cytokine Interleukin-13 (IL-13), as well as proinflammatory cytokines Tumor Necrosis Factor-Alpha ($\text{TNF-}\alpha$), Interleukin-1 beta (IL-1 β), and Interleukin-6 (IL-6). Elevated levels of myeloid lineage-stimulating cytokines, namely Macrophage Colony-Stimulating Factor (M-CSF), Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF), and Granulocyte Colony-Stimulating Factor (G-CSF), and the chemokine CCL2 were observed, indicating enhanced bone marrow and myeloid cell mobilization. Additionally, there was upregulation of inhibitory immune checkpoint molecules such as programmed cell death protein 1 (PD-1), Programmed Death-Ligand 1 (PD-L1), Programmed Death-Ligand 2 (PD-L2), CD276, Lymphocyte-Activation Gene 3 (LAG3), and V-domain Ig Suppressor of T cell Activation (VISTA), suggesting a shift toward an immunosuppressive state.

Conclusions: MSU stimulation induces significant changes in circulating immune cells, promoting proinflammatory responses and altering cell proportions toward inflammatory phenotypes while concurrently upregulating immunosuppressive mechanisms. These findings suggest that asymptomatic hyperuricemia may have pathogenic effects on immune function. Proactive management of elevated uric acid levels could be crucial in mitigating hyperimmune reactions and maintaining immune homeostasis, even in the absence of clinical symptoms. This study also demonstrated that LRS cells are a valuable model for studying immune cell interactions under stressed conditions.



Mykola O. Zorin

Department of Nervous Diseases and Neurosurgery, Dnipro State Medical University,
Dnipro, Ukraine
2 MC Endoscopic neurosurgery, Dnipro, Ukraine

Percutaneous laser microdiscectomy in the treatment of thoracic intervertebral disc protrusions: Difficulties and dangers

One of the causes of thoracalgia is a protrusion of the thoracic Intervertebral Discs (IVD). Treatment of these protrusions is often ineffective.

Objective: To improve the outcomes of treatment of thoracalgia caused by protrusions of the thoracic IVD, using the method of Puncture Laser Microdiscectomy (PLM).

Materials and Methods. A retrospective analysis of treatment outcomes of 64 patients with thoracalgia at the Endoscopic Neurosurgery Medical Center in the period from 2000 to 2023 was carried out. The patients ranged in age from 24 to 67 years. There were 48 (75.5%) men, 16 (24.5%) women. Puncture laser microdiscectomy was performed in 42 patients under the control of a C-Arm operating fluoroscope (Philips, the Netherlands), 22-under CT-assisted method (Toshiba, Japan).

Results: In the presence of only one affected disc, it was easy to determine the level of PLM appropriate for the level of pain (56% of cases), whereas in the presence of detection of two or more affected discs, it was a difficult task. In such cases, lidocaine blockade (lidocaine test) of one of the spinal roots corresponding to the presumably affected disc was performed. Of the 28 patients in whom two or more affected IVDs were identified, lidocaine test blockade was applied in 14 cases. The lidocaine test provides more accurate determination of the level of damage to the IVD (which is related to the severity of pain) and contributes to a better effect of PLM. However, the difference was not statistically significant ($p=0.509$). In 10 cases, PLM was performed on two IVDs. Complications were reported only in 3 patients operated on under the control of a fluoroscope. In 2 of them it was caused by technical errors. Thus, in one patient, the needle penetrated the pleural cavity and damaged the lung. A needle insertion into the spinal canal was the cause of complication in two cases. No neurological symptoms were noted, but both patients developed symptoms of meningism after 24 hours. A diagnostic lumbar puncture in the cerebrospinal fluid revealed an admixture of blood as a consequence of an error during the PLM. The incidence of positive outcomes in the treatment of thoracic IVDs with PLM method was 89%.

Conclusions: Puncture laser microdiscectomy of thoracic IVD protrusions is an effective method of treating persistent thoracalgia. A lidocaine test should be performed to identify the source of pain in case of several IVD injuries. Performing PLM under CT assisted surgery does not increase the efficacy of surgery but avoids complications.

Keywords: Thoracalgia, Thoracic Intervertebral Discs, Laser Microdiscectomy.

Biography

Mykola O Zorin is in Department of Nervous Diseases and Neurosurgery of the Dnieper Medical University, Doctor of Medical Sciences. He is Chairman of the Neurosurgical Association of the Dnepropetrovsk region. He was one of the first in Ukraine to operate with a microscope: aneurysms of the cerebral arteries, tumors of the brain and spinal cord, and others. In recent years he have been interested in minimally invasive spine surgeries. Director of the Endoscopic Neurosurgery Medical Center Author of more than 300 scientific articles.



Pedro Víctor López Plaza^{1*} PT PhD, Ismael Ordoñez² PT, Lorenzo Escutia²

¹Blanquerna Health Faculty, Ramon Llull University FCS, Barcelona, Spain

²Researcher, Barcelona, Spain

Effects of proprioceptive sensitivity stimulation via the sura electrodevice on kinematics, kinetics and spatiotemporal parameters of gait. Pilot study patient survivors of stroke

Background and Aims: Recovery of function in people with Central Nervous System (CNS) injury after stroke is very much like a relearning process that takes advantage of preserved sensorimotor circuits. Relearning can be optimised by providing appropriate proprioceptive (or deep sensory) information to the spinal cord with the aim of maximally engaging the preserved neural circuits. The development of the SURA electrodevice offers this sensitive input mechanism. The study evaluates the impact of the SURA device on the functional recovery of stroke (CVA) patients, focusing on dynamic balance.

Methods: It is a randomized controlled clinical trial with 30 participants, dividing the subjects into an intervention group with the device activated and a control group without activation. The intervention included motor point stimulation of the gastrocnemius, soleus, and peroneal muscles, combined with standard rehabilitation sessions.

Results: Preliminary results showed significant improvements in balance (measured by the Berg scale), gait speed (10-meter walk test), and muscle strength, particularly in hip and ankle flexion and extension. Additionally, the intervention group demonstrated superior motor control, as reflected in electromyography, with more stable and synchronized muscle activation patterns, approaching values seen in healthy subjects. Improvements in joint range of motion in the hip and ankle were also observed, suggesting better control in the gait cycle.

Conclusions: The conclusions indicate that the SURA device could facilitate neuroplastic reorganization in stroke patients by providing a peripheral proprioceptive stimulus that influences the planning and execution of motor commands. Its accessible and non-invasive nature positions it as a promising tool for community-based rehabilitation.

Biography

Dr. Pedro V López studied physical therapy at the Ramon Llull University, Barcelona, Spain and graduated as PT in 2000. Subsequently I started my career in clinical care, teaching and research up to the present day at the same University. I received the PhD degree in 2016 at the Miguel Hernandez de Elche University, Alicante, Spain.



Qilong Jiang

Department of Orthopaedic Surgery, Chongqing Orthopedic Hospital of Traditional Chinese Medicine, Chongqing, China

A novel computed tomography-based three-column MLP classification of intertrochanteric fracture

Objectives: The aim of our study was to introduce a novel Three-Dimensional Computed Tomography (3DCT)-based three-column classification (named MLP classification system) of intertrochanteric fractures and evaluate its reproducibility and reliability.

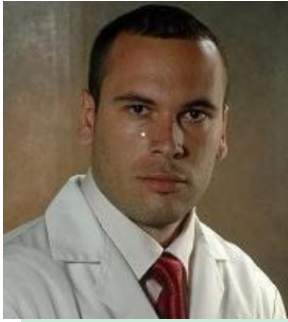
Methods: From September 2022 to September 2024, a total of 266 consecutive patients (67 male, 199 female; mean age 80.7 years) with intertrochanteric fractures were included in this study. The fracture in each case was assessed using a novel three-dimensional computed tomography-based three-column classification. Two examiners tested the intra and inter-observer reliability of this new classification system using kappa variance.

Results: The intertrochanteric region was divided into the medial column, lateral column, and posterior column. Intertrochanteric fractures were documented as $M_{0/1/2}-L_{0/1/2/3}-P_{0/1/2/3}$. All fractures were classifiable into the new classification system. The intra-observer kappa values were 0.92 and 0.90, while the inter-observer kappa value was 0.82, both indicating almost perfect reliability.

Conclusion: This novel 3DCT-based MLP classification system for intertrochanteric fractures is comprehensive, and reproducible with good agreement. It is based on proximal femur biomechanic characteristics and traumatic mechanism, contributing to formulating more reasonable treatment protocols involving various late-model internal fixation devices.

Biography

Dr. Qilong Jiang received his PhD degree from the Chongqing Medical University in 2013. He then became an Attending Physician in the Department of Orthopaedic Surgery, Chongqing Orthopedic Hospital of Traditional Chinese Medicine. He was promoted to an Professor in the Chongqing College of Traditional Chinese Medicine in 2023. He has published 7 peer-reviewed SCI articles and serves as a reviewer for the KSSTA, Archives of Orthopaedic and Trauma Surgery, Journal of Orthopaedic Surgery and Research, and World Journal of Orthopedics. His ongoing research interests are Sports Medicine, Arthroplasty, and Arthroscopy.



Sadat Mazreku

GHOL Nyon Hospital, Switzerland

Acute traumatic complete rupture of the muscular body of the biceps brachii case presentation

Introduction: Acute traumatic complete rupture of the muscular body of the biceps brachii is a rare condition, with few cases reported in the literature. This case highlights the effectiveness of early surgical intervention in improving clinical and functional outcomes for patients with this specific injury.

Method: A 36-year-old right-handed, healthy, and active man sustained an injury in a road traffic accident involving a seatbelt. He presented to the emergency department with pain, deformity, and functional impairment of the left upper limb, particularly reduced elbow flexion and forearm supination.

Clinical examination revealed tenderness and pain over the biceps brachii, along with a visible groove in the medial muscle. X-rays ruled out bony lesions, and MRI confirmed a complete rupture of the biceps brachii with no other complications.

Surgical intervention was performed. A peripheral overlock suture using Vicryl 2 was applied to anchor each muscle stump. Four modified Kessler sutures of PDS 1 were then placed on each stump. With the elbow in flexion, the muscle ends were approximated and sutured under minimal tension. The overlock sutures were anchored together, reinforced with two cross-stitches of PDS 1. Final inspection confirmed restored continuity. The postoperative protocol included initial immobilization followed by progressive rehabilitation.

Results: Postoperatively, an articulated brace locked at 90° was applied, followed by rehabilitation with a progressive extension mobilization scheme of 20° per week. The patient was monitored at 2–6 weeks, 3 months, and 6 months. MRI at 3 months showed good healing with no suture failure. Clinically, the patient demonstrated progressive improvement in muscle function, achieving full range of motion and strength recovery.

Discussion: Acute closed complete muscle rupture of the biceps brachii is a rare but significant injury requiring thorough diagnosis and appropriate management. Muscle trauma recovery is challenging due to the limited regenerative capacity of muscle tissue. The literature indicates that biceps brachii muscle ruptures occur notably in parachutists using static lines. This emphasizes the importance of recognizing such injuries in specific populations (Huard et al., 2002; Heckman C Levine, 1978; Oliva et al., 2013).

Conclusion: The management of acute, closed, traumatic, and complete biceps brachii muscle ruptures requires individualized treatment. Early diagnosis, timely intervention, and tailored rehabilitation are essential for favorable outcomes. Further research is needed to establish standardized guidelines for managing these rare injuries.

Biography

Sadat Mazreku is a Chief Resident at Nyon Hospital in Switzerland, in the Orthopedic Department. He completed his medical training in Switzerland and about to obtain his specialization in orthopedics.



Mr. Samer Elhoushy

Biomedical Engineering, Washington University in St. Louis, St. Louis, Missouri, United States

Injectability analysis of an alginate-based hydrogel for stem cell therapy in intervertebral disc injury treatment

Intervertebral Disc (IVD) injury is a major factor contributing to lower back pain, which is believed to affect up to 80% of the general population. Alginate could be a low-cost and effective solution for IVD injury in clinical settings, but its mechanical properties need further optimization for more efficient applications. Alginate hydrogels are widely studied because they can be easily cross-linked and because researchers can control their cross-linking and injection times.

Literature has established alginate as an effective treatment for IVD injury. Tan et al. (2021) investigated the potential of cRGD and AG73, which are integrin- and syndecan-binding peptides, respectively, to restore Nucleus Pulposus (NP) cells. The NP region is essential for disc function but deteriorates chronically with age, contributing to spinal degeneration. By adding cRGD and AG73 peptides to alginate, the researchers observed significant increases in NP-specific markers, including proteoglycan production and N-cadherin expression. The dual-ligand hydrogels promoted a rounded NP cell shape, especially in 3D cultures, where clustering mimicked the natural microenvironment. These findings reinforce the importance of ligand presentation, suggesting that peptide-functionalized alginate hydrogels could be ideal for IVD repair.

Injectability, a mechanical property based on a material's viscosity that measures how easily a liquid can be injected through a syringe, is important to consider in clinical alginate hydrogel applications. Muir et al. (2024) further explore this by analyzing the injectability of a hyaluronic acid-based granular hydrogel with Zirconium Oxide (ZrO₂). This hydrogel demonstrated excellent injectability, self-healing behavior, and mechanical stability suitable for IVD applications. When injected into a goat model of disc degeneration, the hydrogel restored disc height and prevented further collapse. Its radiopacity, or the ability to absorb UV light or X-rays, enabled in vivo imaging using fluoroscopy and CT. This study highlights the need for hydrogels that are both mechanically functional and clinically traceable, supporting my project's focus on the injectability and delivery efficiency of alginate-based hydrogels.

In this project, I investigated the synthesis, crosslinking, and performance testing of alginate hydrogels to evaluate their injectability, cellular compatibility, and potential use in IVD regeneration. I prepared 1 mL of 1% alginate hydrogel and injected it using an injection device set to a 300 μ L/min rate through two different needle gauges: 19G and 25G. As a control, I also

tested 1 mL of pure dPBS. Results indicated that alginate was significantly less injectable than dPBS in 19G needles ($p < 0.01$), but there was no significant difference in injectability in 25G needles ($p > 0.05$). These findings demonstrate the potential of alginate to be injected using 25G needles in clinical applications and are further validated by the Muir et al. (2024) paper, which used similar extrusion setups to assess injectability.

There is a large clinical need for minimally invasive, biomaterial-based therapies that can restore disc function and prevent further degeneration. In the future, the results of this project could be applied to using an alginate-based hydrogel to inject into the disc of either a joint dealing with an IVD or with rheumatoid arthritis.

Biography

Mr. Elhoushy studies Biomedical Engineering and Healthcare Management at Washington University in St. Louis. At Washington University, he studied under the Huebsch Lab, a Biomedical Engineering lab with extensive experience in biomaterials and tissue engineering. Elhoushy was a National Merit Scholar at American Heritage High School in Palm Beach Gardens, Florida, and conducted scientific research across all four years of high school. He was selected by NASA's CubeSat Launch Initiative (CSLI) program in 2019 to develop a small satellite mission in the field of electrical engineering, which launched in 2022.



S. Umar Hasan^{1*}, Alina Pervez¹, Alan R Norrish²

¹Department of Trauma and Orthopaedics, Queen's Medical Centre, Nottingham University Hospitals NHS Trust, Nottingham NG7 2UH, United Kingdom

²Academic Unit of Injury, Recovery and Inflammation Sciences, Academic Orthopaedics, Trauma and Sports Medicine, School of Medicine, Faculty of Medicine and Health Sciences, University of Nottingham, Queen's Medical Centre, Nottingham NG7 2UH, United Kingdom

Fractures under the lens: How smart are our machines?

Objective: To systematically evaluate the diagnostic accuracy of Artificial Intelligence (AI) models for detecting paediatric appendicular fractures on plain radiographs.

Methods: This systematic review and meta-analysis followed the PRISMA-DTA guidelines. MEDLINE, Scopus, Cochrane Library, and Web of Science were searched from inception to May 2025. Eligible studies included paediatric patients (<21 years) where AI models assessed plain radiographs for fractures, using human readers as the reference standard. Primary outcomes were pooled sensitivity, specificity, Diagnostic Odds Ratio (DOR), positive Likelihood Ratio (LR⁺), and negative Likelihood Ratio (LR⁻). Risk of bias was assessed using QUADAS-2. Random-effects models and Hierarchical Summary Receiver Operating Characteristic (HSROC) curves were applied.

Results: Seventeen studies met inclusion criteria, with 11 contributing to meta-analysis (over 10,000 radiographs). Pooled sensitivity was 0.92 (95% CI: 0.89–0.94) and specificity was 0.90 (95% CI: 0.85–0.94), with a false-positive rate of 0.10 (95% CI: 0.06–0.15). The HSROC curve demonstrated high overall discriminative ability. Subgroup analyses showed comparable diagnostic performance for upper extremity fractures (sensitivity 0.91, specificity 0.89) and lower extremity fractures (sensitivity 0.89, specificity 0.94). The pooled DOR was 104.6 (SD 31.3), LR was 9.32 (SD 2.22), and LR⁻ was 0.089 (SD 0.016). Most studies were assessed as low risk of bias. However, notable limitations included the predominance of retrospective, single-centre designs and limited external validation.

Conclusion: AI models, particularly deep learning architectures, demonstrate high diagnostic accuracy for detecting paediatric appendicular fractures on radiographs, approaching expert-level performance and improving the diagnostic abilities of junior clinicians. Despite promising results, most evidence comes from retrospective and internally validated studies, raising concerns about generalizability. Future research should prioritize prospective multicentre validation, workflow integration, and assessment of clinical impact before widespread clinical adoption. AI has the potential to become a valuable adjunct in paediatric fracture diagnosis, enhancing detection accuracy and optimizing care pathways, but its implementation must be guided by robust evidence, ethical oversight, and clear clinical protocols.

Biography

Dr. Syed Umar Hasan earned his MBBS from Dow Medical College, Karachi, in 2021. He then worked for 18 months as a clinical researcher at Aga Khan University Hospital, Karachi, before relocating to the UK. Since December 2024, he has served as a resident physician at Queen's Medical Centre, Nottingham University Hospitals NHS Trust. Dr. Hasan is first author on 15 PubMed-indexed publications and was awarded Best Poster at both AKUH and the International Diabetic Federation in 2023. His work combines clinical practice with research excellence, advancing pediatric diagnostics and improving patient care.



Yong Cheol Jun* M.D, Sung Cheol Park M.D

Department of Orthopaedic Surgery, Pride Hospital, Asan, Korea

Biportal endoscopic spinal surgery for lumbar spinal stenosis

Lumbar decompression surgery is the standard procedure for lumbar spinal stenosis. A variety of surgical techniques have been introduced, ranging from open surgery to minimal invasive surgery. Minimally invasive methods are preferred because of less pain after surgery and shorter hospital stay. uniportal endoscopic decompression has technical difficulties due to narrow field of view. Biportal endoscopic decompression is a satisfactory technique that can compensate for the shortcomings and provide sufficient decompression

Biography

Dr. Jun studied orthopaedics at Chosun University, South Korea and graduated as Doctor in 2010. He took an orthopaedic residency course at Chosun university Hospital. He received his PhD degree in 2019 at the same institution.



Yu Deng

Department of Orthopaedic Surgery, Chongqing Orthopedic Hospital of Traditional Chinese Medicine, Chongqing, China

Patient-specific versus oxford microplasty instrumentation in unicompartmental knee arthroplasty

Background: The purpose of the study was to compare Patient-Specific Instrumentation (PSI) with Oxford Microplasty Instrumentation (MPI) in Unicompartmental Knee Arthroplasty (UKA) for patients with Anteromedial Osteoarthritis (AMOA).

Methods: We performed a prospective study at a single high-volume orthopaedic hospital. All patients were randomly assigned to undergo either PSI-assisted UKA performed by inexperienced surgeons (PSI group) or MPI-assisted UKA performed by experienced surgeons (MPI group) at a 1:1 ratio. Radiological measurements included the femoral component varus and valgus angle, flexion and extension angle, tibial component varus and valgus angle, tibial posterior slope angle, and Hip-Knee-Ankle Angle (HKAA). The Knee Society Score (KSS) and Hospital for Special Surgery (HSS) score were assessed at one, three, six, and 12 months. Mixed-effects modelling was used to analyze repeated measurements.

Results: A total of 68 participants (34 in each group) were enrolled from June 2021 to July 2024. No patients were lost to follow-up. No significant differences between groups were found in the femoral component varus and valgus angle, flexion and extension angle, tibial component varus and valgus angle, tibial posterior slope angle, or hip-knee-ankle angle (all $P > 0.05$). At the 12-month follow-up, the PSI group and MPI group achieved mean KSSs of 93.4 points (95% CI, 88.3-97.6) and 93.9 points (95% CI, 89.6-98.3), respectively. There were no significant between-group differences in the KSS and HSS score improvements from baseline to each follow-up point.

Conclusion: PSI-assisted UKA performed by inexperienced surgeons can yield radiological and functional outcomes comparable to those of MPI-assisted UKA performed by experienced surgeons in the treatment of AMOA. PSI is emerging as a promising alternative for practitioners inexperienced at UKA on a learning curve.

Biography

Dr. Yu Deng is the director of the Department of Joint Surgery. He is proficient in arthroplasty and arthroscopic surgery, with an annual surgical volume of approximately 700 cases.



Zachary Shih^{1*}; Alan Shih² DPM; David Armstrong³ DPM, MD, PhD

¹University of Arizona, Department of Physiology, Tucson, AZ, USA,

²Head to Toe Healthcare, Tucson, AZ, USA,

³University of Southern California, College of Medicine, Los Angeles, CA, USA

A novel approach to hallux varus repair

Introduction: Hallux varus, characterized by the medial deviation of the great toe, often results from the surgical overcorrection of hallux valgus deformities. Addressing this condition poses a significant challenge due to the need for complex surgical correction that maintains joint function and stability. While traditional treatments like 1st Metatarsophalangeal Joint (MPJ) fusion effectively stabilize the joint, they limit range of motion. Alternative options such as tendon transfers and reverse osteotomies offer varying degrees of success but involve prolonged recovery times. To tackle these issues, our study aims to introduce a novel surgical technique to correct hallux varus by fixing the lateral collateral ligament with a bone anchor and slightly mobilizing the extensor tendon laterally while loosening the medial joint capsule. We hypothesize that this technique will reduce patient recovery time and correct hallux varus without imposing functional limitations.

Methods: Our comprehensive review of existing surgical techniques for hallux varus correction included traditional methods like joint fusion, tendon transfers, and capsulorrhaphy. These were compared to our proposed method which was applied to a clinical case of Hallux Varus focusing on stabilizing the lateral collateral ligament using bone anchor fixation and realigning the extensor tendon.

Results: Our study demonstrated that our proposed technique preserves the range of motion by avoiding joint fusion and provides stability through bone anchor fixation, potentially leading to quicker recovery. Importantly, the method maintains joint integrity, allowing for future treatments if needed. Initial outcomes suggest that long-term stability and function can be achieved with precise surgical technique, but its effectiveness requires validation through further clinical trials.

Discussion: Our novel technique of fixing the lateral collateral ligament with a bone anchor and lateral mobilization of the extensor tendon offers a promising alternative to traditional methods. However, it requires precise surgical execution and careful patient selection. Further studies are necessary to establish its safety and efficacy compared to existing methods.

Clinical Relevance: This innovative approach to hallux varus repair has the potential to reduce recovery time and preserve joint function, representing a significant advancement in the surgical management of this condition.

Biography

Zachary Shih is a Physiology student at the University of Arizona with strong interest in human performance and musculoskeletal kinesiology. His research focuses on sports medicine and optimizing surgical outcomes to diminish recovery times for patients.

*We wish to meet you again at our
upcoming events*

4th Edition of Global Conference on
Physical Medicine and Rehabilitation
September 2026 | London, UK | Hybrid Events
<https://physical-medicine.magnusconferences.com/>

4th Edition of
World Orthopedics Conference
September 2026 | London, UK | Hybrid Events
<https://orthopedics.magnusconferences.com/>

Questions? Contact

Phone: +1 (702) 988 2320 | Whatsapp: +1 (779) 429-2143

e-mail: secretary@magnusconference.com