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ABSTRACT BOOK – JAM

Wednesday, 3 September

JAM 1
10:25 - 10:26

2098 Functional And Radiological Outcomes Of Surgical Treatment For The Terrible Triad Of The Elbow: A Retrospective Study

Anis Chaabouni, Mohamed Ali Khlif, Ghofran Ben Massoud, Mehdi Ben Ayed, Khaled Zitouna, Maher Barsaoui

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Abstract
Introduction: The terrible triad of the elbow is a rare and complex injury leading to significant joint instability, historically associated with poor outcomes. Surgical treatment is considered the gold standard. This study aimed to evaluate the functional and radiological outcomes following a standardized surgical approach.

Methods: We conducted a retrospective, descriptive study of patients treated for the terrible triad of the elbow between January 2017 and December 2021. Functional assessment included elbow mobility, return to work, pain evaluation using the Visual Analog Scale (VAS), and functional scores (Mayo Elbow Performance Score [MEPS] and QuickDASH). A minimum follow-up of 12 months was required.

Results: A total of 31 patients were included, with a mean age of 39.4 years. All patients underwent a lateral approach with lateral collateral ligament repair. Coronoid process repair was performed in four cases, while the rest had capsular repair. A medial approach was necessary in 20% of cases, with three patients requiring medial collateral ligament repair. The mean flexion-extension arc was 98.3°, and 52% of patients experienced joint stiffness. The mean VAS was 2.6, MEPS was 84/100, and QuickDASH was 7.9/100, with 90% of patients achieving good or excellent outcomes. Documented complications included heterotopic ossification (38%), osteoarthritis (30%), and residual instability (6%).

Conclusion: Despite the complexity of this injury, functional outcomes have improved with a standardized surgical approach, although complications remain frequent.

Keywords: Elbow dislocation, Terrible triad, Surgical treatment, Radial head fracture, Coronoid process fracture.

10:02 - 10:03

1751 Reshaping Discoid Lateral Meniscus In Medial Open Wedge High Tibial Osteotomy May Adversely Affect The Lateral Compartment Osteoarthritis Progression

Sang-Woo Jeon

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Abstract

Purpose

To investigate and compare the clinical outcomes, radiographic findings, and arthroscopic finding in second look in 2 year after MOHTO with reshaping versus leaving the discoid lateral meniscus intact during MOWHTO.

Methods

We reviewed the medical records of patients who underwent medial open wedge high tibial osteotomy (HTO) from 2010 to 2020 and identified those diagnosed with lateral discoid meniscus. The patients were categorized into two groups: those who underwent reshaping of the lateral discoid meniscus during HTO and those in whom the meniscus was left intact. Clinical outcomes, radiologic outcomes, and second-look arthroscopic findings at two years postoperatively were compared between the two groups.

Results

Among a total of 1,312 patients, 108 patients with discoid lateral meniscus tears were identified. They were categorized into the reshaping group (32 patients) and the non-reshaping group (76 patients). There was no significant difference in clinical outcomes between the two groups (n.s). Radiologic assessment revealed lateral compartment osteoarthritis (OA) progression in 6 patients in the reshaping group and 2 patients in the non-reshaping group ($p<0.01$). Arthroscopic second-look evaluation showed newly developed tears in the discoid lateral meniscus in 3 patients in the reshaping group and 1 patient in the non-reshaping group.

Conclusion

Reshaping discoid lateral meniscus in Medial open wedge high tibial osteotomy may adversely affect the lateral compartment osteoarthritis progression.

10:12 - 10:13

160 The Length Of Stay After Total Hip And Knee Arthroplasty And Factors Associated With Prolonged Stay In A Tertiary Specialized Center.

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Abstract
Background: Total hip arthroplasty (THR) and total knee arthroplasty (TKR) have become very common surgeries in the recent century. This study investigates the factors associated with prolonged LOS post-THR and TKR in a tertiary, subspecialized center in Saudi Arabia.
Methodology: This retrospective cohort study investigates the inpatient LOS of 219 patients admitted to THR and TKR in the period from January 2020 until June 2023. We analyzed preoperative factors such as age, gender, BMI, comorbidity, serum albumin level, and mobility; intraoperative factors such as the type of surgery, anesthesia type, ASA classification, and intraoperative bleeding; and postoperative factors like complications, postoperative mobility status, and postoperative transfusion. We also statistically analyzed the significant differences between the two groups using independent t-tests, chi-squared tests, and multifactor analysis using the linear regression method. $P < 0.05$ is considered statistically significant. .
Result: We collected and analyzed data from 222 patients. The mean age was 62.53 years (SD: 9.56), and 149 subjects (67.1%) were female. Mean BMI was 32.7 kg/m², knee replacement procedures were 193 (86.9%), and 29 (13.1%) hip replacement procedures, and the average LOS in our study was 2.14 ± 1.02 days; 193 (86.9%) had LOS <2 days, and 29 (13.1%) had prolonged LOS >3 days. Factors like age, BMI, type of anesthesia, anemia, albumin, ASA class, post-operative hemoglobin, and pre- and post-operative mobility were significantly correlated with LOS in TKA and THA patients ($P<0.05$).
Conclusion: Prolonged LOS significantly correlated with age, BMI, type of anaesthesia, anaemia, albumin, ASA

10:08 - 10:09

2330 Patient-Reported Outcomes After Acromioclavicular Joint Reconstruction: A One-Year Prospective Study

Athanasios Kalogeropoulos, Al Acraf Khoriati, Tony Antonios, Ali Narvani, Mohamed Imam

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Abstract

Introduction

Acromioclavicular (AC) joint injuries, particularly Rockwood grade III-VI dislocations, can lead to significant pain and functional impairment. Although various surgical approaches have been implemented, long-term patient-reported outcomes (PROs) remain insufficiently studied. This study assesses functional recovery and subjective outcomes following AC joint reconstruction over a one-year period using validated PRO measures.

Methods

A retrospective analysis was conducted on 53 patients who underwent AC joint reconstruction. Collected data included demographics (age, gender, dominance), injury details (Rockwood classification, mechanism, chronicity), and functional assessments using the Visual Analog Scale (VAS), Oxford Shoulder Score, EQ-5D, and Subjective Value scores at preoperative, 3-month, 6-month, and 1-year follow-ups.

Results

The cohort (mean age 25–65 years) predominantly sustained injuries from falls, sports trauma, or road traffic accidents, with most classified as Rockwood grade IV-V. Preoperatively, mean VAS pain scores were high (6.0 ± 1.5), and functional scores indicated substantial impairment. By 3 months, VAS scores decreased (3.8 ± 1.2), and Oxford scores improved (27 ± 6). By 6 months, Oxford scores exceeded 35 and EQ-5D reached 0.75, reflecting enhanced quality of life. At one year, most patients reported significant pain relief (VAS <2), functional restoration (Oxford >40), and high subjective satisfaction (85% scoring ≥70 on Subjective Value).

Conclusion

AC joint reconstruction results in progressive pain relief and functional improvement, with substantial recovery by 6 months and near-complete return to function at one year. Outcomes correlate with Rockwood classification and chronicity, supporting surgical intervention for high-grade AC joint injuries.

10:01 - 10:02

2798 ROBOTIC-ASSISTED TOTAL KNEE ARTHROPLASTY: ONE YEAR OF CLINICAL EXPERIENCE

Filipa Adan E Silva, Filipa Cordeiro, Ana Lucinda Correia, Diogo Rodrigues, Bianca Sousa Barros, Pedro Serrano, Paulo Pereira, Adélio Vilaça

Unidade Local de Saúde de Santo António, Porto, Portugal

Abstract

Introduction

In recent years, the exponential growth of Robotic Surgery worldwide has been accompanied by an increasing interest in robotic-assisted systems for treating knee osteoarthritis,primarily aimed at enhancing surgical precision.

This study seeks to assess the planning process and both intraoperative and postoperative outcomes of all patients who underwent Robotic-Assisted Total Knee Arthroplasty(TKA-R) in our institution during its first year of implementation, evaluating the procedure's accuracy and reliability.

Methods

All patients who underwent TKA-R between May/2023-April/2024 were retrospectively evaluated using electronic medical records and data from the robotic system model.

Results

During the first year of implementation,45 patients underwent TKA-R. Over time,a significant reduction in surgical duration was observed, aligning with the expected learning curve. Intraoperatively, no notable differences were detected between the planned and validated cuts in the distal and posterior femur or the proximal tibia. However, a statistically significant difference was identified in the varus/valgus cut angle of the proximal tibia($p=0.0019$), while no differences were observed in the other analyzed angles. Postoperatively, knee alignment was evaluated using extra-long radiographs to measure the Hip-Knee-Ankle(HKA)angle, revealing no significant differences between the planned and actual HKA angle($p=0.1898$), with no notable interobserver variation.

Conclusion

Current evidence on TKA-R highlights the high precision of the surgical technique in executing bone cuts and positioning components.Moreover, clinical outcomes have improved, with patients experiencing faster recovery compared to conventional techniques.

In summary,TKA-R represents a significant advancement, offering exceptional precision and reliability while underscoring the ongoing need for technological innovations to broaden its applicability across other areas.

10:06 - 10:07

1271 No Relationship Of Helicobacter Pylori And Bone Joint Panel Bacteria With Primary Knee Osteoarthritis

Ali Batuhan Akbulut, Serhat Akçaalan, Ceyhun Çaglar, Mahmut Ugurlu, Mehmet Ismail Safa Kapicioglu, Metin Dogan

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Abstract
Backround: Osteoarthritis (OA) is the most common joint disease seen in adults around the world.
We hypothesized that in cases of primary knee OA, as a chronic inflammatory process, bacterial pathogenesis and especially that of H. pylori may be effective in the chronic and intense inflammation.
We aimed to examine the presence of H. pylori and other bacteria in synovial tissues based on bone and joint panels of patients with primary OA.
Methods: Synovial tissue samples of patients who underwent total knee arthroplasty with a diagnosis of primary knee osteoarthritis were collected for this prospectively designed study. The obtained synovial tissue samples were examined by qPCR for Helicobacter pylori and other bone joint panel(Pseudomonas aeruginosa, Proteus spp., Kingella kingae, Peptostreptococcus anaerobius, Enterococcus faecium etc.) bacteria.
Results: In total, 80 patients were included in this study. While 70 of the patients (87.5%) were female, 10 (12.5%) were male. The age range of patients was 57-81 and the mean age was 67.4 years. No evidence of Helicobacter pylori or other bone joint panel bacteria was detected in any of the synovial tissue samples examined.
Conclusion: No evidence was found in this study regarding the presence of H. pylori and bone and joint panel bacteria in the synovial tissues of patients for whom total knee arthroplasty was performed due to primary knee OA. . Extensive studies with multiple centers and patients from different parts of the world that examine sequence analysis results for synovial tissues and fluids are required.

10:15 - 10:16

1112 Effects Of High Versus Low Laser Therapy On Osteoarthritis: A Systematic Review Of Global Randomized Controlled Trials And Local Studies Within Saudi Arabia

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Abstract

Osteoarthritis (OA) mangment often fall short, carry risks, or provide insignificant symptomatic benefits. One non-invasive treatment is lasertherapy, which has been gaining attention for its potential to modulate inflammation and enhance tissue repair, thus making it a potential therapy for OA. This systematic review aims to evaluate the efficacy of various laser therapy parameters and compare them to conventional treatments in Saudi Arabia while compiling and analyzing global studies. A systematic search was conducted for randomized controlled trials. Studies involving laser therapy for osteoarthritis of any joint were included. Data were extracted on laser specifications, outcomes, and adverse effects. Nonparametric statistical analyses were applied due to non-normal data distribution, and qualitative synthesis was performed to interpret the results. Fifty studies were included, comprising seven local papers from Saudi Arabia. Low-power laser therapy was the most used. This therapy led to significant improvements in pain and function, particularly when combined with exercise, and there were very few reported side effects. However, the evidence was limited due to differences in study design and small sample sizes. Laser therapy shows great potential as a non-invasive treatment for osteoarthritis. Standardized protocols and robust trials must confirm this and define its role in clinical practice.

10:19 - 10:20

2602 Platelet-Rich Plasma Outperforms LIPUS In Accelerating Postoperative Healing: A Comparative Meta-Analysis

Waleed Albishi, **Abdualziz Alqahtani**, Abdulmalik Alduraibi, Othman Aldraihem, Abdullah Alturki

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Abstract
Background:
Prolonged post-operative healing can delay recovery, increase healthcare costs, and negatively impact patient quality of life. Enhancing healing time is a clinical priority, and non-invasive modalities such as Platelet-Rich Plasma (PRP) and Low-Intensity Pulsed Ultrasound (LIPUS) have emerged as promising interventions. However, direct comparisons of their effectiveness are limited.

Objective:
To compare the effectiveness of PRP and LIPUS in reducing surgical healing time, facilitating return to daily activity, and minimizing complications through a comprehensive meta-analysis.

Methods:
Data were extracted from randomized controlled trials and systematic reviews. Primary outcome was healing time; secondary outcomes included return-to-activity time, complication rates, and economic considerations. Standardized mean differences (SMDs) and confidence intervals (CIs) were used to evaluate pooled effects.

Results:
PRP significantly reduced healing time compared to control groups (SMD = 0.59; 95% CI: 0.23 to 0.95; $p < 0.00001$), with an average benefit of approximately 13 days. Time to return to normal activity was also significantly improved by PRP (~9.7 days faster). LIPUS demonstrated a small, statistically non-significant reduction in healing time (SMD = -0.19; 95% CI: -0.68 to 0.30). PRP did not increase the incidence of post-operative complications (RR = 1.57; $p = 0.33$).

Conclusion:
PRP is significantly more effective than LIPUS in promoting surgical wound healing and functional recovery. Its impact on reducing healing time and improving return to activity supports its integration into surgical care protocols. Further research should explore combined modalities and cost-effectiveness in diverse clinical settings.

10:18 - 10:19

539 Clinical Outcomes Of Intramedullary Kirschner Wire Fixation For Unstable Radius And Ulna Fractures In Children: A Prospective Study In Yemen

Abdullah Ali Al-Moaish, Jamal Abdulraheem Algabarty

Sana'a university, Sana'a, Yemen

Abstract
Background: Forearm fractures are common pediatric injuries, and unstable cases often require surgery. Intramedullary Kirchner wire (K-wire) fixation is a minimally invasive option that reduces soft tissue damage and hospital stays. This study evaluated the clinical outcomes of K-wire fixation for unstable radius and ulna fractures in children.
Methods: This prospective observational study was conducted at Al-Thawra Modern General Hospital, Yemen, from January 2019 to February 2020. It included 23 pediatric patients (5–15 years) with unstable forearm fractures who failed closed reduction. All underwent intramedullary K-wire fixation under general anesthesia. Functional outcomes were assessed using the Price criteria, and complications were recorded. Data were analyzed using SPSS Version 16.
Results: The mean patient age was 10.4 years, with a male predominance (69.6%, n=16). Road traffic accidents (52.2%, n=12) and falls (47.8%, n=11) were the most common injury causes. Transverse fractures accounted for 56.5% (n=13), followed by oblique fractures (39.1%, n=9). Excellent functional outcomes were achieved in 60.9% (n=14), and good outcomes in 30.4% (n=7). Complications included pin site irritation (34.8%, n=8) and superficial infection (17.4%, n=4), all resolved with treatment. Most patients (52.2%, n=12) had K-wire removal at 12–14 weeks.
Conclusion: Intramedullary K-wire fixation is a safe, effective treatment for pediatric forearm fractures, offering excellent outcomes and manageable complications. Its simplicity and cost-effectiveness make it suitable for resource-limited settings. Future studies should explore long-term outcomes and compare it with other techniques.

10:03 - 10:04

1385 Role Of Percutaneous Screw Fixation In Children With Delayed Presentation And Nonunion Of Lateral Condyle Humerus Fractures With Elbow Stiffness

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Abstract
Introduction:
We examined the efficacy of a percutaneously placed screw in delayed presenting LCH fractures and LCH nonunion in children who presented with varying degree of elbow stiffness.
Methods:
Sixteen children with LCH fractures presenting after six weeks of fracture, without signs of union, and with frank nonunion were treated with percutaneous placement of the cancellous screw. Inclusion cliteria included LCH fragment with < 8 mm displacement and with articular surface of LCH fragment facing radial head. There was a delay of 1.5 to18 months before presenting to us. The results were assessed by Dhillon criteria.
Results:
All the patients at presentation had flexion deformity (avg 29) and restricted flexion ((avg 100). Successful radiological union was achieved in 15/16 . All the patients had full recovery of extension. Fifteen patient regained full flexion and one patient has only 100 flexion restriction (p value < 0.001). Fifteen patients had excellent and one had a good overall Dhillon score.
Discussion:
We could achieve union in a majority of the patients with delayed presentation and established nonunion of LCH fractures with simple percutaneous screw placement, thereby avoiding open surgery, big scar, bone grafting, and AVN of LCH. We did not wait for an improvement in elbow movements before screw fixation and still all our patients regained full elbow movements with improved Dhillon scores.
Conclusion:
PCS is an effective method to treatment of nonunion of lateral condyle fractures with gap less than 8 mm and articular surface of LCH facing radial head.

10:27 - 10:28

595 TKA Revision ; Technical Difficulties

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Abstract
Despite the current survival rate of knee prostheses which remain very satisfactory beyond 10 - 15 years, the existing complications most often require a revision , when replacing it, the surgeon will have to manage certain difficulties; such as the approach, the management of bone stock, the support zones for the new implant as well as the choice and type of prosthesis.
Material and Methods: Prospective study of 69 TKA revisions between 2012 and 2024. The average age was 68 years, an average BMI of 29.45. Different types of prostheses were used, avoiding climbing as much as possible; we used sleeves, and reconstruction with grafts in certain patients. The patients were reviewed with clinical and radiological control, with an average follow-up of 07 years.
Results: we noted 02 stiffness, 08 unexplained pain, no sepsis and no patella instability. All patients were evaluated according to the DEVANE Score and CHARNLEY Categories, HSS-Insall rating, functional IKS and knee.
Discussion: TKA revisions are technically more difficult to carry out.The functional results obtained remain lower than those obtained during primary implantation, but remain comparable to those in the literature (Jason2021 ; Rosso all 2019 ; Jabbal 2023 ; Graichen 2022). .
Conclusion: The revision of total knee prostheses is a difficult surgery where rigorous planning is required, a technical platform and adapted equipment capable of dealing with different situations, in particular the management of bone defects.

10:07 - 10:08

1757 A Comparative Study On Outcomes Of Partial Meniscectomy For Horizontal Cleavage Tear Of Medial Meniscus: Complete Versus Partial Resection Of Inferior Leaf

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2. The Catholic University of Korea Incheon St. Mary's Hospital, Incheon, South Korea

Abstract

Introduction: The purpose of this study is to compare the clinical outcomes of partial meniscectomy for the horizontal cleavage tear of medial meniscus between complete resection of inferior leaf up to periphery and partial resection leaving stable peripheral torn meniscal tissue.

Material and methods

A total 126 patients who underwent partial meniscectomy for horizontal tear of medial meniscus were included. Patients were divided into 2 groups: group C (n=34) included patients with the inferior leaf of the horizontal cleavage tear of medial meniscus was completely excised, group P (n=92) consisted of patients in which the meniscal tissue of inferior leaf was partially resected. Clinical functions were evaluated using the Lysholm knee scoring scale, the IKDC subjective knee evaluation form, and KOOS.The radiologic assessment was performed using the IKDC radiographic assessment scale

Results

The functional outcomes in group P were superior to those in groups C according to the Lysholm knee score IKDC subjective score, KOOS-ADL and KOOS-sport. The postoperative IKDC radiographic scale for group C was worse than group P ($P = 0.003$). The postoperative joint space on the affected side was wider for group P (4.7 ± 0.4 mm) than for group C(3.8 ± 0.1 mm; $P < 0.001$).

Conclusions

Functional outcomes of the patients that underwent partial resection were better than the patients treated with complete resection. In addition, arthritic change and decreased height of joint space were more pronounced in patients with complete resection than those with partial resection.

10:13 - 10:14

1418 Leap With LAP: Results Of Plating After Lengthening Procedure In Children

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Abstract
Introduction: The fixator time during lengthening can be reduced by combining it with internal fixation (nail or plate) at beginning or after lengthening (LON, LOP, LAP, LAN). We retrospectively reviewed cases of modified technique of plating after lengthening (LAP) in children undergoing limb lengthening procedures. We looked at at length of fixator time, time to consolidation, limb alignment and complication rate.Material and Method: 21 patients with LAP (femur 6 tibia 13 humerus 2) with age groups 6 years to 18 were included. The procedure consisted of lengthening with monoliteral fixator followed by removal of fixator and plating within 2 weeks of stopping distraction. The steps included placing temporary maintenance ex-fix, removal of lengthening device, lavage, percutaneous insertion of locking plate correcting translation angulation and rotation, fixing the plate with locking screws.Results: The lengthening amount was 4.3 cm (3.2–7.5), Duration of exfix 69 days (48–87) external fixator index 16.0 days/cm (12.3–19 days), time to consolidation 152 days (122–223s) Healing index 35.34 days/cm (28 –55). The alignment was corrected intraop in 16 patients. Two patients had minor discharge which responded to oral antibiotics, one needed lavage and iv antibiotics. One required bone grafting. Two patients needed revision for bent plate. Return to school was 97 days (82-155).Conclusions: The advantages of LAP technique include reduction in fixator time with early return to school and function. It also allows to correct residual malalignments and rotation. It does not need specialized implants and is possible to do in children with open physes.

10:00 - 10:01

2305 Trans-Tricipital Approach For Open Reduction Internal Fixation Of Distal Humeral Shaft Fractures: Technical Note, Pros And Cons

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2. Monastir University, Monastir, Tunisia

Abstract

Introduction

Osteosynthesis of distal third humeral shaft fractures often presents technical challenges due to the closeness of neurovascular elements to the bone at this level. The posterior trans-tricipital approach is an interesting option for such situations, as it provides wide exposure.

Objective:

To describe the technique, advantages, disadvantages, of trans-tricipital approach for ORIF of distal third humeral shaft fractures.

Methods

Seven patients were operated under general anesthesia in the lateral decubitus position. The humerus was approached posteriorly. A trans-tricipital passage was made sparing the triceps tendon. Attention was given to protecting the radial nerve along its posterior course proximally. The lateral course of the nerve was distant from the surgical field. Osteosynthesis was performed using one or two plates (posterior, lateral, and/or medial), depending on the type of fracture line.

Results:

Seven patients were operated by 3 senior surgeons. No postoperative radial nerve deficits, arterial injuries, or infections were noted. No cases of nonunion were observed.

Discussion:

The trans-tricipital approach offers wide exposure of the humerus on its posterior aspect, lateral, and medial edges. Several options for plate positioning are available to the surgeon. This approach is interesting for medial wedge fractures to fix the medial fragment. The disadvantages of this approach include the lateral decubitus positioning and the trans-muscular passage.

Conclusion:

The trans-tricipital approach is an interesting option for humeral shaft fractures, especially for AO type 12B fractures. More detailed results with a larger series are needed to define the indications for this approach.

10:20 - 10:21

102 Outcomes Of Suprapatellar Nailing Of Proximal Tibial Shaft Fractures

Moustafa Aly, Mohamed Sarhan, Karim Omar

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Abstract
Background: Tibial shaft fractures represent the most common long bone fractures. Intramedullary nailing has been the standard procedure for surgical treatment of tibial shaft fractures, allowing for minimally invasive fixation and preservation of the extraosseous blood supply, and has the advantages of early mobilization, high union rates and few wound complications. Methods: a prospective study including 20 patients diagnosed with closed proximal tibial shaft fractures and treated with intramedullary nailing from the suprapatellar approach. All patients had been admitted from July 2020 to January 2021 and were followed-up for one year. Results: At the end of follow-up, all the fractures had united. The average union time was less than 6 months in 13 patients (65 %), and more than 6 months in 7 patients (35%). 17 patients (85%) had no anterior knee pain, 2 patients (10%) had pain while walking, and one patient experienced mild pain on walking and at rest (5%). All patients had a full knee extension, eleven patients (55%) had full knee ROM, seven patients (35%) could flex up to 125 degrees and two patients (10%) up to 110 degrees. Clinical outcomes, according to the Hospital for Special Surgery Knee Rating Scale, were excellent in eight patients (40%), good in nine patients (45%), and fair in three patients (15%).14 patients (70%) returned to pre-fracture activity and 6 patients (30%) did not return to pre-fracture activity. Conclusion: This study emphasizes the safe use of the suprapatellar approach for nailing of proximal tibial shaft fractures.

10:21 - 10:22

2417 Does An Initial Course Of Bisphosphonates Yield Better Results In The Conservative Treatment Of Avascular Necrosis Of The Femoral Head?

Saadedine-Hichem Amouri, Mohamed Fouzi Djidi, Nour Lina Benkharfallah, Salim Fourmas, Mustapha Yakoubi

EHS BENAKNOUN, Alger, Algeria

Abstract
Introduction: Avascular necrosis of the femoral head has become increasingly common, notably following a global rise in cases since the COVID-19 pandemic. Despite advancements in new therapeutic approaches, its management remains challenging, and long-term outcomes are still mixed. The inhibitory effect of bisphosphonates on osteoclastic activity has been clearly demonstrated. Does a course of bisphosphonates before a biopsy drilling procedure for femoral head necrosis improve outcomes?

Materials: We conducted a prospective study on 28 patients and 38 hips with femoral head necrosis at Ficat stages I and II. All patients received an injection of 4 mg or 5 mg of zoledronic acid according to a specific protocol. Then, within the following three weeks, a biopsy drilling procedure was performed, and a cancellous bone graft was harvested locally from the greater trochanter using trocars typically used in mosaicplasty. Clinical and biological follow-up was conducted for each patient after the bisphosphonate injection, and we assessed functional and radiological outcomes, as well as complications and treatment failures.

Results: We observed a reduction in pain in all patients, along with an improvement in functional scores (Harris Hip Score and PMA) in 24 hips over a 36-month follow-up period. One patient required total hip arthroplasty one year later, two others progressed to stage III, and one patient developed a postoperative subtrochanteric fracture. No infections or other complications were recorded.

Conclusion: A neoadjuvant course of bisphosphonates appears to improve the outcomes of biopsy drilling in femoral head necrosis.

10:26 - 10:27

1470 Primary Total Hip Arthroplasty In Young Adult Patients With Neglected Legg Calve Perthes Disease In Kenya A Report Of 3 Cases

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Abstract
Total hip arthroplasty (THA) is a widely-accepted gold standard treatment for advanced hip osteoarthritis. However, the use and outcomes of primary THA have not been well-described in young patients with acquired hip deformities like Legg Calve Perthes (LCP) in a resource-limited setting.

In this case series, we describe the pre-operative symptoms, surgical indications, technique, and short-term outcomes for three young adult patients from rural Kenya who underwent THA for acquired hip deformities.

Between 2021 and 2024, three cases of primary THA for neglected LCP were performed at Tenwek Hospital in Bomet, Kenya, a 400-bed facility serving a low-income population of four million.

Case 1 was a 17-year-old student with 1.5cm of R leg shortening, and Herring C classification on radiographs. Case 2 was a 30-year-old doctor with antalgic gait, Herring B. Case 3 was a 39-year-old teacher with 4 cm of L leg shortening, Herring C.

All patients received a THA through a posterior approach. Cases 1 and 3 underwent a capsular release due to contracture of the anterior capsule. Case 2 sustained a calcar split and a cerclage wire was placed. All patients had subjectively improved mobility, no limb length discrepancy or other complications at one year follow up.

Given barriers to healthcare in Bomet, Kenya, LCP goes underdiagnosed, contributing to functional deficits in young adults. Primary THA as a treatment for neglected LCP had good early outcomes in our small case series. Future studies on THA in Kenya will benefit from collaboration with the nascent Kenyan Arthroplasty Registry.

10:14 - 10:15

1779 Surgical Treatement Of Chronic Acromio Clavicular Disjunction: About 14 Patients

Houssem Eddine Chahed, Talel Znagui, Nizar Borcheni, Khaled Khelil, Achraf Abdennadher, Khalil Amri

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Abstract
Introduction:
Acromio clavicular disjunction (ACD) represents about 10% of shoulder traumatic injuries. It occurs generally in young athletic patients with functional demand. Restoring both the acromio clavicular and the coracoclavicular ligaments is important for better functional result.

Methods
It was a single-center, descriptive, and retrospective study, conducted in the Orthopaedic & Trauma surgery department of military hospital of Tunis. Our study was carried over a period of 3 years from January 01, 2022, to September 30, 2024, with a minimum follow up of 3 months. We included all patients with Stage 3 or higher chronic ACD. Patient were treated by an anatomic reconstruction of both AC and CC ligaments using hamstring autograft. Constant-Murley and Quick DASH were used to assess post operative functional results.

Results:
We included 14 patients in our study. The mean age in our series was 32. Sex ratio (M/F) was 5,5. Mean follow up was 6,3 months, ranging from 3 to 18 months. Mean delay between trauma and surgery was 6.2 months. 9 patients had stage 4 disjunction, while 6 patients had stage 3 disjunction. No complications occurred. The mean Constant-Murley score significantly increased from 71.4 before surgery to 87.1, 12 months after surgery. The mean Quick DASH score significantly decreased from 24.2 before surgery to 10.4, 12 months after surgery. 12 patients (86%) returned to their prior sport level.

Conclusion:
Anatomical reconstruction of the AC and CC ligaments seems to be a reliable technique, with very good functional results in both short and long term.

10:24 - 10:25

2140 Secondary Scoliosis Due To Lower Limb Length Discrepancy: A Case Report

Mohamed Seddik Akermi, Mohamed Habib Sanaa, Adnen Benammou, Souha Bennour, Mehdi Bellil, Mohamed Ben Salah

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Abstract

Introduction

Lower limb length discrepancy (LLD) is a common condition that can lead to postural imbalances and spinal adaptations. When significant, it may result in secondary scoliosis, potentially causing chronic pain, functional impairment, and reduced quality of life. We report a case of scoliosis secondary to LLD.

Case Report

A 30-year-old female patient presented with chronic low back pain persisting for three years despite medical treatment. Clinical examination revealed a deviation of the lumbar spinous processes, pelvic imbalance, absence of a rib hump, and a 4 cm LLD. Neurological examination was unremarkable. Radiographic assessment confirmed a right-convex lumbar scoliosis with a Cobb angle of 30° and a 4 cm LLD.

Given these findings, the diagnosis of secondary scoliosis due to LLD was established. Surgical treatment was decided upon, consisting of right lower limb lengthening using an Orthofix device.

Discussion and Conclusion

When LLD exceeds 2 cm, compensatory mechanisms such as pelvic tilt and functional scoliosis occur. Treatment involves LLD correction through shoe lifts or surgery, depending on severity, combined with rehabilitation to improve posture and prevent pain. Early management optimizes patient comfort and prevents complications.

Wednesday, 3 September

JAM 2
10:01 - 10:02

61 Postoperative Immobilization With Electrostimulation Optimizes Tendon Healing And Functional Recovery In A Rat Model Of Acute Rotator Cuff Repair

Lang Bai, Bingyan Li

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Abstract
Background: The optimal postoperative management strategy for rotator cuff repair remains debated, particularly regarding immobilization-induced functional deficits versus early mobilization risks. This study investigates the therapeutic effects of immobilization combined with electrostimulation on tendon-to-bone healing and locomotor function.

Methods: 24 Sprague-Dawley rats with surgically induced acute supraspinatus tendon injuries were divided into three groups: 1) Standard immobilization (4-week casting), 2) Immediate free mobilization, and 3) Immobilization with daily electrostimulation (20 Hz, 1 h/day). Outcomes were evaluated at 2/4/8 weeks using:Gait analysis，Biomechanical testing (ultimate load, stiffness)，Histological scoring (modified Movin scale, collagen III/I ratio) and MRI-based enthesis morphology quantification

Results: Immediate mobilization group exhibited 23% lower load-to-failure than immobilized groups at 8 weeks , with histological evidence of disordered collagen alignment (44% higher Movin scores vs Group 3, $p<0.05$). While standard immobilization preserved repair integrity, it caused persistent gait abnormalities (18% reduced stride length vs baseline at 8 weeks). The electrostimulation group demonstrated:Biomechanical strength comparable to standard immobilization and enhanced collagen maturity (2.1-fold higher collagen III/I ratio vs Group 2). At 8 weeks post-repair, the electrostimulation-immobilization group achieved significantly superior gait symmetry (GSI: 0.91 ± 0.03) compared to both immobilization-only (0.76 ± 0.05) and free-mobilization groups (0.58 ± 0.07), with maximum contact pressure restoration reaching 97% of pre-injury levels versus 82% and 58% in control groups respectively ($p<0.05$).

Conclusion: Postoperative immobilization with adjunctive electrostimulation synergistically improves tendon healing while mitigating immobilization-related functional impairment. These findings propose a balanced rehabilitation paradigm combining mechanical protection with biologically active stimulation.

10:15 - 10:16

83 How Deep Are Anterior Portals Used In Knee Arthroscopy? Why Does It Matter?

Jai Prabhakar Chitnavis[1], Jenny Wilkins[2], Cecilia Brassett[2], Prannav Mahesh[2]

1. The Cambridge Knee Clinic, Cambridge, United Kingdom
2. The University of Cambridge, Cambridge, United Kingdom

Abstract

Introduction

2 million knee arthroscopies are performed annually worldwide.
Damage to the infra-patellar fat pad (IPFP) during portal entry compromises vision.
Path lengths (PL) (portal depths) for entering the joint are not known.

Objective

To measure penetration depths of anterior portals used in knee arthroscopy using both a cadaveric and in-vivo study.

Method

We measured anterior portal PLs in
29 adult cadavers and
14 adult patients (15 knees) undergoing arthroscopy of the knee for anterior knee pain.
Cadaveric PLs were measured using a needle through mid-medial (M-M) and supra-lateral (S-L) portals. PLs were measured thrice per portal.

The IPFP was then dissected off the capsule and its thickness determined using calipers, and the total PL for each portal.

In-vivo portal depths were measured under direct vision via a high lateral portal. An arthroscopic probe was inserted thrice into each portal until it just perforated the joint. A clip was attached to the probe to measure PL.

Results

S-L portal PLs in cadavers averaged 13.4mm (M) and 12.3 mm (F). M-M PLs averaged 29.9mm (M) and 28.8mm (F).
The IPFP thickness was 0.47 (M) and 0.53 (F) for S-L portals and 0.76 (M) and 0.64 (F) for M-M portals.

Corresponding values in vivo were 27.3mm (M) and 24.0mm (F) for S-L portals and 28.7mm (M) and 25.7mm (F) for M-M portals.

Conclusions

Medial portals were deeper than superolateral portals and penetrated more IPFP. Printing scales on arthroscopic instruments may reduce surgical trauma and improve vision.

10:08 - 10:09

466 Clinical And Ultrasonographic Evaluation Of The Gluteus Medius Muscle After Centromedullary Nailing Of Diaphyseal Femur Fractures In Adults About 20 Cases

Omar Bensitel, TAHA Hrar, Amine Jebbar, Mohammed Bouhouche, Abdessamad Rajallah, Abdeljebbar Messoudi, Mohamed Rahmi, Mohammed Rafai

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Abstract
Introduction:
Anterograde centromedullary nailing of the femur is preferred for diaphyseal femoral fractures, despite the risks of specific complications, including damage to the gluteus medius muscle. Such damage can lead to heterotopic ossifications, chronic hip pain or reduced abduction strength. This study aims to assess the impact of nailing on the gluteus medius muscle.
Material and Methods:
A retrospective study was conducted on 20 patients who underwent centromedullary nailing for closed femoral shaft fractures, assessing damage to the gluteus medius muscle over a 5-year period, with a mean follow-up of 28 months.
Resultts
All patients were evaluated clinically and radio-echographically, with assessment of the homolateral hip using the Harris Hip Score.
clinically, examination of the hip in general and the gluteus medius specifically revealed :
9 patients (45%) with a normal examination.10 patients (50%) with a painful syndrome of the greater trochanter.1 patient (5%) with paresis of the hip abductor muscles.
The ultrasonography revealed 2 patients (10%) with normal paraclinical investigations. 11 patients (55%) with enthesopathy of the gluteus medius, either isolated or associated with amyotrophy of the fleshy body. 5 patients (25%) with tendinopathy/tendinobursopathy of the gluteus medius. 2 patients (10%) with calcific tendonitis of the gluteus medius
Discussion :
The surgical technique employed and the patient's operative position appear to be factors influencing the risk of iatrogenic injury. These elements reinforce the importance of a meticulous surgical approach to prevent damage to surrounding muscle and nerve tissue.
Conclusion :
Optimization of the operative position and surgical approach is essential

10:19 - 10:20

1074 Allogenic MSCs Are A Safe And Efficacious Treatment For Knee Osteoarthritis: A Systematic Review Of Randomized Controlled Trials

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2. Singapore General Hospital, Singapore, Singapore
3. Total Orthopaedic Care and Surgery, Singapore, Singapore

Abstract

Background:
Implantation of mesenchymal stem cells (MSCs) is a potential non-surgical option for cartilage repair. This systematic review aims to evaluate studies that focus on allogeneic MSCs implantation versus placebo to summarise the efficacy and safety of allogeneic MSCs in knee OA.

Methods:
A systematic search following PRISMA guidelines was performed in PubMed, Scopus, and EMBASE. Original studies investigating outcomes of allogeneic MSC implantations in patients with knee OA were included. Data on clinical outcomes subjective scores such as VAS and WOMAC, radiological outcomes such as cartilage thickness, and histological outcomes such as ICRSII score were extracted.

Results:
Seven studies were included in this review. There is a 30.4 and 40.0 point improvement in VAS and WOMAC scores, respectively, at 12 months from baseline. Improved cartilage thickness and decreased poor cartilage quality as measured by T2 relaxation. Measurements at the lesion site were observed in three studies as assessed by postoperative magnetic resonance imaging and this was correlated clinically. One study also showed histological improvement with overall ICRSII scores significantly improving from 32.0±21.6 at baseline to 55.9±23.2 at 6 months ($p<0.05$). No major complications or tumorigenesis occurred.

Conclusion:
Allogeneic MSC implantation in patients with knee osteoarthritis provides sustained clinical improvement and satisfactory cartilage restoration, up to 12 months follow-up. These results are supported by both imaging and histological studies. The safety profile of allogeneic MSCs is excellent, with minimal adverse events mainly limited to local reaction to injection and no long-term adverse effects.

10:02 - 10:03

2743 Are Patients With Metabolic Syndrome At A Higher Risk Of Dupuytrens Disease And Poor Outcomes?

Ahmed Bakr[1], Mina Malak Abed Yousef[2], Walaa El-Nahas[2], Karthikeyan P Iyengar[2]

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2. Southport & Ormskirk Hospitals, Mersey and West Lancashire Teaching NHS Trust, Southport, United Kingdom

Abstract
Background

Metabolic syndrome is a triad of known conditions including Diabetes Mellitus, hypercholesteremia and obesity. Though there are recognised risk factors and associations with the development of Dupuytrens disease including family history, smoking and alcohol intake, the association between Metabolic syndrome and Dupuytrens disease is yet to be analysed.

Aims:

We evaluate the correlation between Metabolic syndrome and development of Dupuytrens disease and clinical outcomes.

Methods

A retrospective cohort analysis was conducted on all patients attending a UK District general hospital hand unit for surgical correction of Dupuytrens disease in the period between January 2023 and December 2023. Data was collected from Electronic Patient Records (EPR-Evolve) including patient notes, clinic letters, operation notes and hand therapy records. Patient demographic, history and examination and surgical outcomes were all gathered. Microsoft Excel was used for data collection. Descriptive statistics were used for data analysis.

Results

75 patients were identified for the study, 5% had all three hallmarks of metabolic syndrome, with one of these patients presenting with a recurrence of Dupuytrens contracture. 11.5% of patients presented with two characteristics of Metabolic syndrome, and 32% had one independent feature. Overall, the most common risk factor was Alcohol (28%).

Conclusion

Though, only 5% of the assessed cohort had the triad of features of Metabolic syndrome, independent associations such as Diabetes Mellitus had a higher prevalence in patients with a history of Dupuytrens disease recurrence. The emphasis must be placed on preoperative optimisation with implications on the decision making process for Dupuytrens surgery.

Keywords: Dupuytren Contracture; Metabolic syndrome; Prevalence; Treatment Outcome; Surgery

10:03 - 10:04

2764 Can ChatGPT Aid In Musculoskeletal Intervention?

Mohamed Ashiq Shazahan[1], **Ahmed Bakr**[2], Rajesh Botchu[1]

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2. University of Liverpool, Liverpool, United Kingdom

Abstract
Objective:

Radiology has continuously evolved exploring cutting-edge technologies to improve patient care. It is a prime example of how medical science is propelled forward by technological innovation.
In recent times, artificial intelligence has played a crucial role in various technological advancements. Chat generative pre-training transformers (GPTs) -4, an AI language model primarily focusing on natural language understanding and generation, is increasingly used to retrieve medical information. This study explores the utility of Chat GPT-4o in imaging-guided musculoskeletal interventions, detailing its advantages and limitations.

Methods:

Two musculoskeletal radiologists assessed the information generated by Chat GPT on common musculoskeletal procedures. They analysed the overall utility of Chat GPT-4o in guiding MSK interventions by examining the procedure steps and pre- and post-procedure details provided. The assessment was documented in a 5-point Likert scale and subjected to statistical analysis.

Results:

The statistical analysis of Likert scale scores by both readers revealed a moderate level of inter-rater agreement, as indicated by a Cohen's Kappa score of 0.54. Across the categories, the mode of Likert score ranged from 1 to 3, as rated by both readers, indicating sub-optimal performance. The lowest scores were observed in image quality assessments, whereas the highest ratings were attributed to post-procedure details.

Conclusion:

Chat GPT-4o shows potential as an adjunct, but further refinement is needed to evolve as a supportive tool for radiologists. Our study highlights the variability in the performance of Chat GPT-4o, raising concerns about potential inaccuracies in patient care and management.

Keywords - Inventions, Artificial Intelligence, Radiology, Patient Care, Radiologists, Language

10:06 - 10:07

2821 TUBERCULAR INFECTION KNEE IN A CASE OF ACL RECONSTRUCTION

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Abstract
Introduction: The incidence of septic arthritis following ACL reconstruction is quite rare, with reported rates ranging from 0.14% to 1.7%. The majority of infections are caused by Staphylococcus epidermidis and Staphylococcus aureus. Tuberculosis infection is extremely rare, with only one case reported in the literature to date involving ACL reconstruction.
Study Design: Case Report and Literature Review
We report a case of a 35-year-old male who underwent arthroscopic ACL reconstruction of the right knee. One month after surgery, he was presented with pain and restricted movement in his right knee. He underwent a biopsy, and it was found to be Mycobacterium Tuberculosis and later started on Antituberculous therapy Category 1. He came to us 4 months after surgery with restriction of movements of the knee. After evaluation, we performed an arthroscopic assessment and debridement of the synovial tissue, sending samples for histopathological examination and GeneXpert Ultra testing. Histopathological examination indicated chronic inflammation and granulation tissue with an ill-defined epithelioid granuloma. GeneXpert Ultra testing returned positive for Mycobacterium tuberculosis. The patient started on antitubercular therapy, and after one year, he achieved a range of motion of 0 to 100 degrees.
Conclusion: Tuberculous infection, although rare, should be considered as a potential cause of infection in immunocompetent patients residing in areas endemic to tuberculosis following arthroscopic ACL reconstruction. The primary treatment approach involves a combination of arthroscopic debridement and antitubercular therapy (ATT).
Key words: Tuberculosis, Anterior Cruciate Ligament (ACL) Reconstruction

10:07 - 10:08

2204 Results Of Hip Arthroplasties After Failure Of Osteosynthesis In Hip Fractures

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Abstract
Introduction: The failure of osteosynthesis in trochanteric fractures is a serious complication that often leads to hip arthroplasty. So-called "salvage" prostheses carry a higher risk of complications.
Methods: We conducted a retrospective discriptive study on patients who underwent hip arthroplasty due to a mechanical complication from osteosynthesis of a trochanteric fracture, specifically the failure of the cephalic screw. The clinical analysis included the Visual Analog Scale (VAS), Harris Hip Score (HHS), and Postel Merle d'Aubigné (PMA) score. The radiological analysis included the measurement of limb length discrepancy using the bi-ischial line, stem alignment, and the evaluation of greater trochanter union.
Results: Fifteen patients were included in the study. The causes of failure were non-union of the fracture and cephalic screw failure.70% received total hip arthroplasty. The average VAS score was 7.3. The average HHS was 40.2. Limb length discrepancy was observed in 60% of cases, with an average discrepancy of 2 cm. There was a 50% incidence of greater trochanteric lysis, with a varus stem alignment in 30% of cases. We noted two cases of septic complications requiring prosthesis removal and four cases of prosthetic dislocations.
Conclusion: Osteosynthesis failure in trochanteric and femoral head fractures is rare in the literature but can present significant surgical management challenges. The choice between hemiarthroplasty and total hip arthroplasty depends on the patient's age, comorbidities, and functional demands. The type of arthroplasty used has little influence on complication rates, The choice of implant is crucial for achieving satisfactory functional results.

10:13 - 10:14

1417 Black Women With Metastatic Breast Cancer To Bone Have Worse Survival After Controlling For Age And Income

Ashley Castan, Rosamaria Dias, David Herz, Joseph Ippolito, Kathleen Beebe

Rutgers New Jersey Medical School, Newark, United States

Abstract

Background and Objectives

With implementation of early detection screening methods and advances in medical treatment, there have been improvement in outcomes for patients with breast cancer. Despite this, studies have suggested potential differences in outcomes amongst various racial and ethnic groups. We sought to investigate the relationship of race, demographic, tumor, and treatment characteristics in survival of women with metastatic breast cancer to the bone.

Methods

The Surveillance, Epidemiology, and End Results (SEER) database was reviewed for patients with a breast cancer diagnosis with bony metastases N=11,833. We collected information on demographics and tumor characteristics. Associations between were determined using multivariate analyses.

Results

At 12- (HR 1.211 [95% CI 1.091 – 1.345, P<0.001]) and 60-months (HR 1.256 [95% CI 1.161 – 1.359, P <0.001]) Black women had decreased survival compared to other races. When stratified by household income > $75,000, worse survival was maintained among black women at 60 months in both age groups < 65 (HR 1.242 [95% CI 1.117 - 1.381, P <0.001]) and > 65 (HR 1.318 [95% CI 1.121 - 1.550, P= 0.001]).

Conclusion

Despite improved treatment methods, disparities among patients with metastatic breast cancer to bone exists. Our findings demonstrate that different sub-groups experience different mortality rates. Further research must be conducted to understand the interplay between these socioeconomic variables and survival likelihood in metastatic breast cancer.

10:14 - 10:15

2464 Role Of Combined Therapy Of Antiplatlet Drugs And Conventional DMARDs In The Management Of Early Osteoarthritis Of Knee And Hip.

Amit Chaudhary

Siyag Hospital, Suratgarh, India

Abstract
Background:
Osteoarthritis (OA) is a common degenerative joint disease characterized by cartilage degradation and joint inflammation. Early intervention is crucial to slow disease progression and alleviate symptoms. Conventional disease-modifying antirheumatic drugs (DMARDs) and antiplatelet drugs have demonstrated potential benefits in managing inflammatory conditions. This study investigates the efficacy of combining conventional DMARDs and antiplatelet therapy in early hip and knee OA management.

Methods:
A total of 120 patients with early-stage hip and knee OA were enrolled in a randomized controlled trial. Participants were assigned to three groups: Group 1 received conventional DMARDs (Methotrexate or Sulfasalazine), Group 2 received antiplatelet drugs (Aspirin or Clopidogrel), and Group 3 received a combination of DMARDs and antiplatelet therapy. The primary outcome measure was the change in the Western Ontario and McMaster Universities Arthritis Index (WOMAC) score over 12 months. Secondary outcomes included visual analog scale (VAS) for pain, joint stiffness, and functional ability.

Results:
The combined therapy group showed the most significant reduction in WOMAC scores ($p < 0.05$) compared to either monotherapy group. Additionally, there was a marked improvement in VAS pain scores and joint function in the combined therapy group ($p < 0.01$). No significant adverse effects were noted in any group.

Conclusion:
The combination of conventional DMARDs and antiplatelet drugs appears to provide superior clinical benefits in the management of early hip and knee OA, suggesting a promising approach for early-stage OA treatment. Further studies are needed to confirm these findings and evaluate long-term outcomes.

10:18 - 10:19

1239 Regulation Of Angiogenic Factors By Epigenetics In Patients With Ossification Of The Ligamentousm Flavum

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2. Department of Orthopaedic Surgery, Omi Medical Center, Kusatsu, Shiga, Japan

Abstract
Introduction: The pathogenesis of spinal ligament ossification involves both genetic and acquired factors, that contribute to individual variations in ossification morphology. Pathologically, endochondral ossification progresses with the formation of an ossification front, in which neovascularization plays a crucial role. In thoracic ossification of the ligamentum flavum (OLF), we investigated the relationship between DNA methylation, a key epigenetic modification, and the expression of angiogenic factors.
Materials and Methods: We analyzed 34 patients with thoracic OLF (mean age: 63.9 years). Cultured cells from harvested tissues underwent comprehensive DNA methylation analysis and western blotting (WB) to assess the expression of VEGF, CD34, secreted frizzled-related protein 1 (sFRP1), and SOX17. Immunohistochemical analysis was performed on thin-sectioned specimens. The control group included 12 patients with non-ossified ligamentum flavum (mean age: 61.6 years).
Results: Pathway analysis of DNA methylation identified the significant involvement of VEGF, FGF, and epithelial adherens junction signaling in angiogenesis. VEGF, CD34, SOX17, and sFRP1 exhibited high methylation levels. WB showed significant upregulation of these proteins in OLF. VEGF, CD34, and sFRP1 levels were elevated in non-fused cases, whereas SOX17 levels were elevated in fused cases. Histologically, VEGF and CD34 were localized in mature chondrocytes, whereas sFRP1 and SOX17 were localized in mesenchymal cells.
Discussion: The epigenetic regulation of angiogenic factors plays a critical role in OLF. CD34 contributes to early ossification, SOX17 to lesion expansion, and VEGF/sFRP1 to sustained progression of ossification.

10:21 - 10:22

2754 Beyond The Obvious: Femoral Retroversion As An Underlying Cause Of Adolescent Hip Pain

Ana Lucinda Correia, Pedro Santos Leite, Diogo Rodrigues, Filipa Adan Silva, Alexandra Santos, Afonso Faria, João Seixas, Bianca Barros, Filipa Cordeiro

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Abstract
INTRODUCTION
Adolescent hip pain presents a diagnostic challenge for orthopedic surgeons, with multiple potential etiologies often leading to delayed or missed diagnoses. Femoral retroversion represents an underrecognized cause of persistent hip pain. This rotational abnormality, characterized by decreased femoral antetorsion, increases the impingement of the femoral neck on the acetabulum, being an etiology of extra-articular femoroacetabular impingement. We present a case of an adolescent with chronic hip pain ultimately diagnosed with severe femoral retroversion after extensive clinical evaluation.
CASE PRESENTATION
A 15-year-old male athlete presented with a 12-month history of mechanical hip pain. Clinical examination revealed significantly diminished internal rotation and excessive external rotation bilaterally. Advanced imaging with CT scan confirmed severe bilateral femoral retroversion with measurements of 2° on the right and 1° on the left.
MANAGEMENT
The patient underwent a staged approach with a left subtrochanteric derotational osteotomy performed initially. The osteotomy was stabilized using an intramedullary nail to ensure proper alignment and stability during healing. Following appropriate recovery and rehabilitation, a similar procedure was performed on the right hip one year later, also utilizing an intramedullary nail for fixation. This surgical approach addressed the underlying rotational abnormality by restoring more physiologic femoral version bilaterally.
CONCLUSIONS
This case highlights the importance of considering femoral retroversion in the differential diagnosis of hip pain. A comprehensive physical examination including assessment of hip rotation profiles should be standard in evaluating persistent hip pain in this population

10:24 - 10:25

2766 Meyer’s Dysplasia: Recognizing A Benign And Self-Limiting Hip Disorder

Ana Lucinda Correia[1], Fernando Lima[2], Patricia Vaz Cunha[2], Miguel Rocha[2], João Lucas[2], Rui Cerqueira[2], João Soeima[2], José Luis Simães[2], Inês Henriques[2], Cesar Correia[3]

1. Centro Hospitalar Universitário de Santo Antonio, Porto, Portugal
2. ULS Alto Ave, Guimarães, Portugal
3. Hospital de Braga, Braga, Portugal

Abstract
Femoral head epiphyseal dysplasia, also known as Meyer’s dysplasia, is an asymptomatic hip dysplasia characterized by delayed and irregular ossification of the femoral head epiphyseal nucleus. This condition resolves spontaneously without sequelae. Its clinical significance lies in its potential to be mistaken for other pathologies, where timely and accurate diagnosis can prevent unnecessary procedures. It is more prevalent in males and typically presents bilaterally.
This case report describes a female patient referred to an orthopedic outpatient clinic due to suspected left hip dysplasia, initially detected on ultrasonography at four months of age, prompting treatment with an abduction brace. Follow-up with serial radiographs demonstrated bilateral delayed ossification of the femoral head ossification nuclei. At 18 months, the patient presented with hypoplastic but visible ossified nuclei on radiographs. By 24 months, the nuclei remained smaller than expected, with fragmentation noted in the right nucleus.
Despite these radiological findings, the patient remained asymptomatic, leading to a decision for expectant management. By age three, the nuclei appeared uniform. The patient continues under outpatient surveillance.
In summary, this case highlights the importance of recognizing Meyer’s dysplasia as a benign condition that can be managed through observation and follow-up, avoiding unnecessary interventions. Diagnostic reassessment was crucial in ensuring appropriate and less invasive management for this patient.

10:25 - 10:26

2376 Capnocytophaga Canimorsus In Chronic Periprosthetic Hip Joint Infection: A Case Report

Peter Crabtree

East Suffolk and North Essex NHS Foundation Trust, Ipswich, United Kingdom

Abstract
Background: We describe a case of chronic periprosthetic hip joint infection in an immunocompetent patient caused by Capnocytophaga canimorsus, a rare pathogen and oral commensal of dogs and cats. This case underscores the importance of thorough history-taking in culture-negative infections, the value of polymerase chain reaction (PCR) for diagnosis, and the challenges of antibiotic selection for uncommon organisms, especially given the lack of sensitivity data for C. canimorsus.

Clinical case: A 75-year-old man was admitted with a chronically painful left hip, superficial swelling and a draining sinus overlying a hybrid total hip replacement performed fifteen years earlier. He reported a dog bite on his hand many years ago and owns two dogs, but has no other known risk factors for C. canimorsus. His inflammatory markers were only modestly raised. The pathogen was undetected by conventional microscopy methods but detected by PCR. He underwent an exchange of prosthesis followed by prolonged antibiotic therapy.

Clinical lesson: This case is notable due to the rarity of the causative organism, with only a handful of cases reported in the literature. C. canimorsus evaded detection by conventional microscopy methods, and was only isolated with PCR analysis of deep tissue samples. The organism was difficult to treat with a course of teicoplanin with piperacillin-tazobactam followed by co-amoxiclav alone. The resurgence of CRP and white cell count on switching to co-amoxiclav suggests possible antibiotic resistance. He has been referred to a tertiary centre for further revision surgery and potential adjustment to his antibiotic regimen.

10:26 - 10:27

2585 Cell-Free Physiological Osteogenic Microenvironment 4D Reconstructs Authentic Bone For Regenerative Repair Of Amorphous And Segmental Bone Defects

Xiaolin Tu, Hao Bai, Jiacheng Dai, Pengtao Wang, Yangxi Liu, Gaohai Shao, Xing Liu

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Abstract
Aims & Objectives：Reconstruction of metabolically active real bone is a major challenge in orthopedics. We found that osteocytes are target cells for osteoanabolic stimuli including mechanical stimulation, PTH, and Wnt signaling; osteocytes with activated Wnt signaling promote bone formation and resorption. We hypothesized that cell-free osteocytic Wnt could meet the above challenge.
Study Design & Methods：Rat primary osteocytes were isolated and cultured on 3D-printed PCL scaffolds. They were decellularized into WAO-DM under transient stimulation with Wnt agonists and evaluated for their biological functions in vitro and 4D reconstruction of real bone in vivo for regenerative repair of amorphous and segmental bone defects.
Results: WAO-DM maintained BMSC >90% survival and linear proliferative activity. Compared to its 3 controls wildtype osteocyte (WTO)-DM, BMSC-DM, and none-DM, WAO-DM induced more stress fibers to promote cell adhesion and differentiation into osteoblasts. At 8 weeks after implantation in the critical-sized bone defect in the parietal bone, BV/TV in the WAO-DM group was 1.5, 2.9, and 3.5 times higher than that in these 3 controls. N.Ob/T.Ar was 1.7, 2.9 and 3.3 times higher as well. WAO-DM formed host bone-like structures with largest amount of densely arranged type I collagen. WAO-DM induced highest expression of RANKL and MCSF, as well as vascular and nerve growth factors Vegfa, Angpt1, and Ngf when cultured with BMSCs, that promoted osteoclastogenesis, vascularization, and neurogenesis.
Conclusion: WAO-DM is a physiological osteogenic microenvironment for reconstructing authentic bone, achieving the level of regenerative repair by autologous bone grafts.

10:12 - 10:13

567 Quality Variation Of Osteogenesis Imperfecta Videos On YouTube: A Viewership-Based Evaluation

Enes Alptekin Canli[1], Bilgehan Ocak[1], Sabit Numan Kuyubasi[1], Süleyman Kozlu[1], Süleyman Kaan Öner[2]

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2. Kütahya Health Sciences University, Kütahya, Türkiye

Abstract
INTRODUCTION

YouTube is widely used for medical information dissemination, particularly on rare diseases. Osteogenesis Imperfecta (OI) is a genetic disorder where accurate information is crucial for patient education and awareness. This study evaluates the educational quality, popularity, and source diversity of OI-related videos and provides recommendations for improving content quality.

METHODS

A YouTube search was conducted using "Osteogenesis Imperfecta" and "Brittle Bone Disease." Videos in English with ≥2,000 views, direct OI focus, reliable sources (academic institutions, healthcare professionals, or professional organizations), and adequate audiovisual quality were included. Commercial content, off-topic, and entertainment-based videos were excluded. Videos were analyzed using JAMA Benchmark Criteria (1-4) and Global Quality Score (GQS, 1-5). Video length, views, likes, and source type were recorded and analyzed via Kruskal-Wallis test.

RESULTS

A total of 27 videos were analyzed. The mean JAMA score was 2.3 ± 0.6, and the mean GQS score was 3.2 ± 0.8. 60% of the videos focused on patient stories and were found educationally insufficient. Videos from academic sources had significantly higher JAMA and GQS scores ($p < 0.05$). 70% of the videos were over five years old, raising concerns about outdated content. The average video length was 7.4 minutes.

CONCLUSION

Most YouTube videos on OI are educationally inadequate. Patient stories are engaging but lack scientific depth. Academic content is higher quality but underrepresented. Increasing updated, professionally curated educational videos with healthcare professionals' involvement can improve content quality and accessibility for patients and caregivers.

10:20 - 10:21

1680 Hybrid Approach In Sacral Sore Management With Maggot Debridement Therapy And Flap Reconstruction

Marvin Man Ting Chung[1], Samuel Yan Jin Fang[2], Alex Pat Chung Yeung[2], Wai Fung Kwong[2], Yuk Fai Lui[1], Wing Yuk Ip[1]

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2. Department of Orthopaedics & Traumatology, Queen Mary Hospital, Hong Kong, Hong Kong SAR

Abstract

Introduction:
Sacral sore is a common problem in patients with spinal cord injury. Flap reconstruction allows soft tissue coverage of sacral sore under the premise of infection-free wound base. Maggot debridement therapy (MDT) has been described as an alternative non-surgical management as opposed to the traditional surgical debridement in case of infected sore, reducing number of surgeries under anaesthesia. MDT and surgery are not mutually exclusive, but has rarely been reported to be combined in patient management.

Objectives:
This study aims to report a hybrid approach combining MDT and flap reconstruction with multi-disciplinary effort in management of sacral sore, which accelerates wound healing and prevents morbidities, while lowering the risks associated with repeated surgical debridement at the same time.

Methods:
A 45-year-old paraplegic male with a 9 cm infected sacral sore was managed with MDT followed by flap reconstruction. MDT was applied in a Biobag fashion to achieve effective debridement of necrotic tissue. The wound was then treated with a gluteus maximus perforator-based V-Y fasciocutaneous advancement flap.

Results:
Two cycles of MDT successfully eradicated slough and infection, resulting in a clean wound base. Flap reconstruction achieved complete closure of the sacral sore with no postoperative complications, demonstrating the effectiveness of the hybrid approach.

Conclusion:
A hybrid approach combining MDT and flap reconstruction provides a safe and efficient strategy for managing sacral sores. This method minimizes surgical risks, accelerates wound healing, and optimizes outcomes in medically vulnerable patients, highlighting the importance of individualized, multi-disciplinary care.

10:00 - 10:01

2601 Relationship Between Ankle Joint Anatomy And Implant Insertion Angle In Syndesmosis Treatment

Tsubasa Hasegawa[1], Masanori Yorimitsu[2], Yusuke Mochizuki[3], Toshifumi Ozaki[4]

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Abstract

Introduction

Accurate alignment of the distal tibiofibular syndesmosis is critical in the surgical management of ankle fractures. Although current guidelines recommend implant insertion at an angle of 20–30° and 2–4 cm above the ankle joint, anatomical variations may require a more individualized approach.

Aims & Objectives

To investigate how the implant insertion angle in syndesmotic fixation changes with increasing distance from the tibial plafond, and to identify the optimal insertion level for anatomical reduction.

Study Design & Methods

This cross-sectional study analyzed CT scans from 100 patients (10 males and 10 females per decade, aged 20s to 60s). The Center-Center Axis (CCA) between the tibia and fibula was measured at 10, 15, 30, and 40 mm proximal to the tibial plafond, relative to the Geometric Talocrural Joint Axis (GTJA). One-way ANOVA and Bonferroni-adjusted post-hoc tests were performed to compare angles.

Results

CCA angles increased with distance from the plafond: 9.9° (10 mm), 10.9° (15 mm), 13.9° (30 mm), and 15.7° (40 mm) ($p < 0.05$). Significant differences were found between most levels, except between 10 mm and 15 mm ($p = 0.76$).

Conclusion

The implant insertion angle increases as the insertion site moves proximally, which may cause anterior translation of the fibula at ≥30 mm. To avoid malreduction, implants should be inserted at approximately 10–15 mm from the tibial plafond. The GTJA may serve as a practical intraoperative reference for achieving individualized and anatomically accurate syndesmotic fixation.

10:09 - 10:10

2672 Recurrent Symptoms After PVNS: The Importance Of Accurate Differential Diagnosis

Almudena Scola, Juan Dimas, Alvaro Guzman, Sergio Ruiz

Hospital Gregorio Marañón, Madrid, Spain

Abstract
Introduction :
Pigmented villonodular synovitis (PVNS) is a rare and complex condition, typically treated with synovectomy. However, the reappearance of symptoms can lead to confusion, making an accurate differential diagnosis crucial to avoid misinterpretation.

Materials and Methods:
A 23-year-old female with a history of multifocal vascular malformations was treated with arthroscopic synovectomy after being diagnosed with PVNS in her right knee.
Years later, follow-up was resumed due to symptoms of pain and limited physical activity in the knee.
The MRI showed tri-compartmental degenerative changes and polylobulated intraarticular formations, suggestive of a low-flow vascular anomaly. The absence of hemosiderin deposits ruled out PVNS recurrence.

Results:
An open resection of the lesions was performed, which had vascular characteristics and were non-bleeding. Histological examination confirmed an arteriovenous malformation. The patient was discharged on the first postoperative day, with noticeable symptomatic improvement at six months and no postoperative complications.

Conclusions:
As shown in this case, PVNS is more common in women aged 20-40 years and predominantly affects the knee. The treatment is total synovectomy, and recurrence rates range from 8-40% according to the literature.
When venous abnormalities affect the joint, synovial hypertrophy can cause cartilage damage and subchondral bone degeneration. This, along with the potential for hemosiderin accumulation, complicates the differential diagnosis with PVNS.
This case highlights the importance of MRI in diagnosing intraarticular lesions and the need for thorough differential diagnosis in patients with a history of PVNS. Not all symptom recurrences correspond to a relapse of the disease.

Wednesday, 3 September

JAM 3
15:51 - 15:52

1655 An Unusual Location Of A Morton'S Neuroma In The Foot, A Report Of 3 Cases

Hadia Haouari, Lyes Ait El Hadj, Abdessalam Benamirouche, Mustapha Yakoubi

Hospital Benaknoun, Algiers, Algeria

Abstract
Introduction:Interdigital plantar neuroma, better known as Morton's neuroma, is a perineural fibrosis causing severe, intermittent pain and paresthesia in the foot, most commonly located between the 3rd and 4th metatarsal heads. It is a syndrome of compression of a branch of one of the common plantar digital nerves (canal syndrome). Diagnosis is primarily based on clinical examination. Imaging techniques can be useful in diagnosing atypical cases and postoperative recurrences. Conservative treatments (orthoses, injections, etc.) are effective in most cases. When these treatments are ineffective, surgical treatment (neurolysis, neurectomy) should be considered. Materials and Methods: We report three women presenting with electric shocks in the sole of the second intercommissural space of the right foot, which made it difficult to put on shoes. They were treated symptomatically without diagnosis. One of the investigations was performed, which confirmed the neuroma; after the failure of two corticosteroid injections, surgery was indicated.Results: The results were spectacular: complete resolution of symptoms and a return to professional life.Discussion: Morton's neuroma, the term used to describe damage to a plantar digital nerve between the metatarsal heads, should be considered a tunnel syndrome.Indeed, the nerve lesion combines perineural fibrosis and axonal degeneration, which is quite different from a true neuroma characterized by pseudotumoral fascicular proliferation. To treat Morton's neuralgia, orthostatic measures are usually recommended initially, with one or two corticosteroid injections, loco dolenti, usually recommended.Failure of medical treatment leads to the consideration of two types of surgical treatment: either simple neurolysis by section of the intermetatarsal

15:32 - 15:33

2149 Slipped Capital Femoral Epiphysis: A Retrospective Review Of 17 Cases

Durmus Ekin Dincer

Eskisehir City Hospital, Eskisehir, Türkiye

Abstract

Objectives:

This study aimed to evaluate the severity of slippage, treatment methods, and complication rates in patients with slipped capital femoral epiphysis (SCFE) treated surgically between 2010-2024.

Methods:

Seventeen patients (22 hips) who underwent surgical treatment for SCFE between 2010 and 2024 were retrospectively reviewed. Based on clinical examination findings, prophylactic fixation of the contralateral side was performed in three patients. In two cases, contralateral epiphyseal slippage developed after 15 and 24 months, necessitating surgical intervention. All patients underwent closed reduction and percutaneous fixation. The severity of slippage was classified according to the SCFE grading system.

Results:

In terms of laterality, bilateral SCFE observed sequentially in 2 patients and simultaneously in 3 patients. Based on slip severity, 16 hips were classified as mild and 6 as moderate. The mean patient age was 11.9 years (range: 9-14 years). The mean femoral neck-shaft angle of unaffected hips was 141.8°. No complications such as chondrolysis or avascular necrosis occurred during follow-up. No progression of the epiphyseal slip was observed.
Conclusion:

In this study, early surgical management of pediatric SCFE resulted in satisfactory outcomes without severe complications. Early diagnosis and prompt surgical fixation are essential to prevent complications. Prophylactic fixation of the contralateral hip should be considered in high-risk patients to mitigate the risk of subsequent slippage.

slipped capital femoral epiphysis

15:30 - 15:31

1422 Pediatric Trapezium Fracture: Central Impaction

Javier De La Hera Fernández, Marcos Ortiz Gutierrez, Adrian Fernandez Gonzalez, Ainhoa Ramos Luque, Carlos Fernández Álvarez, Roberto Manuel Palacio Gonzalez, Eduardo José Diez Pérez

Hospital Sierrallana, Torrelavega, Spain

Abstract
Carpal fractures are uncommon, accounting for 8-18% of all fractures, with trapezium fractures representing only 1%. In the pediatric population, carpal fractures are even rarer (3.9%), and those involving the trapezium are extremely unusual and poorly documented.

Case Report
A 12-year-old boy fell from standing height, experiencing painful thumb movement and swelling in the thenar eminence. X-rays showed a comminuted trapezium fracture with central impaction, minimal displacement of lateral fragments, and associated lateral and volar subluxation of the first metacarpal (M1).

Treatment and Outcome
A volar approach was used for fixation with an AptusHand Trilock plate and olecranon bone graft. The hand was immobilized postoperatively, and no rehabilitation was needed. Two months later, the patient achieved full mobility and strength, with satisfactory radiographic follow-ups.

Conclussion
Central impaction fractures typically occur due to direct wrist trauma or falls onto an outstretched hand, leading to axial compression from the first metacarpal (M1).
In most cases, these fractures heal well with immobilization, thanks to the excellent vascular supply from nearby arterioles and muscles. However, when there is significant comminution, joint misalignment, or instability, as seen in this case, a more aggressive approach, as surgical intervention, becomes necessary. Given the degree of comminution, K-wire fixation was not a viable option, requiring open reduction and bone grafting to restore the trabecular structure. In these cases, maintaining stability of the first ray is crucial to preserving proper thumb mechanics, preventing early osteoarthritis and instability, and ensuring optimal pinch function.

15:44 - 15:45

1976 Continuous Succes With Nonoperative Treatement Of Humeral Periprosthetic Fractures

IVAN Gerov

CH Luneville, Luneville, France, Metropolitan

Abstract
Periprosthetic humeral fractures in elderly obese and comorbid patients is a devastating complication with rather difficult surgical solution. A functional treatment with a classic humeral brace was applied to a group of 7 patients, followed for 5 years. In one case a radial palsy was documented at the onset of the treatmet, completely resolved spontaneosly within 6 months. In all 7 cases complete bone healing was achieved within 3 months of the fracture. Excellent functional results with full restoration of the shoulder mobility and no pain were achieved in all patients. This is reassuring us to suggest this treatment as a viable option for this particular type of fracture in this particular target group.

15:39 - 15:40

2181 The Frail Index: The Predictive Power Of Scoring Systems On 30-Day Mortality

Umar Riaz, Georgia Weston, **Klaudia Figa**, Faizal Rayan

Kettering General Hospital, Leicestershire, United Kingdom

Abstract
Background: Neck of femur (NOF) fractures carry high morbidity and mortality. Frailty assessment tools aid in predicting post-operative outcomes and informing clinical decisions. This study assesses the Clinical Frailty Score (CFS) and Nottingham Trauma Frailty Index (NTFI) for predicting 30-day mortality in NOF fracture patients.

Methods: A retrospective cohort study was conducted utilising the data of patients who underwent surgical fixation for NOF fractures between 1st April 2022 and 31st March 2023. Data was collected for 410 patients, and the analysis was filtered for those aged above 60 years with an American Society of Anaesthesiologists (ASA) score above 3 (severe systemic disease). All patients with 30-day mortality post-operatively were selected, and a surviving group were randomly chosen for comparison. Pre-operative frailty was assessed using both the NTFI and CFS.

Results: Out of 51 patients, 30-day mortality occurred in 31.4%. The mean age was 84.83 years, with 62.74% female. The mean ASA grade was 3.42 (SD 0.59) in non-survivors and 3.2 (SD 0.40) in survivors. ASA grade alone was not a strong predictor ($p=0.48$). Logistic regression identified NTFI as the strongest predictor, with each unit increase raising mortality odds by 60.6% ($p=0.071$), while a unit increase in CFS raised mortality odds by 33.7% ($p=0.212$). Predictive accuracy was 33.3% for NTFI and 19% for CFS.

Conclusion: Both CFS and NTFI demonstrated potential in predicting 30-day mortality, with NTFI demonstrating superior accuracy. However, neither achieved statistical significance. Larger datasets are needed to enhance statistical power, improve model generalisability, and enable robust analyses.

15:43 - 15:44

2503 Factors Influencing Diagnosis And Surgical Outcomes In Quadriceps Tendon Rupture In A Tertiary Trauma Centre - A Case Series.

Akhshay John George, Neil Ashwood, James Heath, Arnav Sahu

Queens Hospital, Burton On Trent, United Kingdom

Abstract
Background
Quadriceps tendon rupture (QTR) causes significant functional impairment, with recent studies showing an increasing incidence of these injuries. A delay in diagnosis significantly impacts outcomes, necessitating prompt diagnosis and treatment. This case series, spanning 16 years at a tertiary centre, examines factors influencing surgical outcomes, focusing on evaluating the correlation between diagnostic methods, time to surgery, surgical techniques, and post-operative outcomes.
Methods
An observational retrospective cohort study with data collected from a trauma registry and physiotherapy records.
Results
The study included 46 patients, predominantly males aged 50-70 years, with falls on a flexed knee the most likely aetiology. Choice of imaging significantly influenced time to surgery (TTS) ($p=0.0148$). A combination of X-ray and ultrasound (USS) proved most sensitive for diagnosis, though X-ray-only diagnosis resulted in shorter surgery wait times. TTS averaged 11 days, with over 52% waiting >72 hours. More than 90% of tears were osteotendinous with transosseous tunnels (TT) (63%) the predominant approach. No significant difference was seen in post-operative range of motion or recovery time between surgical techniques.

Conclusion

This series evaluates the impact of imaging modalities, surgical methods, and TTS on functional outcomes post QTR repair. Our results reinforce the male predominance and age-related risk of QTR. Comparable outcomes were observed across different surgical techniques, and surprisingly, early and delayed surgeries

15:45 - 15:46

814 LMD Vs UBE , Is It Worth The Upgrade?

Sourabh Ghosh, Anindya Basu

Institute Of Neurosciences Kolkata (I-NK), Kolkata, India

Abstract

INTRODUCTION
Lumbar microdiscectomy (LMD) still being the gold standard treatment for lumbar disc herniations with neurological deficit non respondent to conservative management. In the recent advancements endoscopic techniques have come into surface as an alternative to LMD.

OBJECTIVES
UBE (Unilateral Biportal Endoscopic) is one of the techniques that has gained popularity due to its low- cost equipment's, shares similar instrumentation in a number of things as LMD, close relation to anatomical landmarks as LMD.This study is a unicentric comparison of LMD and UBE perfomed by a single surgeon on lumbar disc herniations.

METHODS
A retrospective study was done and data was collected on patients operated by LMD and UBE respectively. This data was statistically evaluated.

RESULTS
50 patients each of LMD and UBE operated between January 2022 and June 2023 was considered in this study. There was no major clinical significant differences in the complications, recurrence, postoperative back and leg pain, patient satisfaction rates in the two groups.
The time taken to operate on LMD group was shorter whereas the estimated blood loss and hospital stay was lower in UBE group.

CONCLUSION
LMD can still be considered as gold-standard treatment for lumbar disc herniation, UBE is comparable to LMD with less muscle retraction, lesser blood loss and faster mobilisation of patients and can be considered as an alternative for the Spine Surgeons.

15:49 - 15:50

2985 Bilateral Primary TKA In Neglected Osteoarthritis Knee With Gross Windswept Deformity

Deepak Bandu Ghuge, Meganath V Pawar

AIIMS BHUBANESWAR, Bhubaneswar, India

Abstract
Introduction : "Windswept" deformity (WSD) consists of a non-frequent condition in which the patient presents a valgus deformity in one knee and a varus deformity in the other knee.
Case report : Here we are presenting a interesting case of 59 year Male who is having neglected 0A knee (B/L KL grade IV) with gross Wind swept deformity. Beside Windswept deformity patient was known case IHD with history of CABG 2 years back with current 38 % ejection Fraction. After preop optimization we planned primary TKA. Staged Bilateral TKA was done first on right side without any implant augmentation with minimum ligament release and similarly after 6 weeks apart left TKA was done.We found their is no inta-operative and post operative complications in this patient including cardiac complications.
Follow up :After 1 year of follow up Patient is having good clinical and functional outcome in terms of alignment of the limbs, walking ability and Full ROM.
Conclusion :satisfactory results can be achieved in both knees in patients with WSD and osteoarthrosis (OA) With TKA.

15:50 - 15:51

1158 THE PROMISING USE OF TRASER TECHNOLOGY IN HIP ARTHROPLASTY

Andrea Giolitti[1], Riccardo Ghiggia[2], Gianluca Cudia[1], Davide Canale[1], Quang Thai Truong[1], Andrea Boschetti[1], Marco Pettiti[1], Ugo Scarlato[1]

1. Civil hospital of Ivrea (Turin), Ivrea, Italy
2. Specialization School in Orthopaedics and Traumatology, University of Turin, Torino, Italy

Abstract
The Jump System Traser technology, created with Selective Laser Melting additive manufacturing, is used for hip arthroplasty, with the objective of creating a trabecular titanium structure (Ti6AI4V powder) that reproduces the nature of the bone. The aim of the study is to evaluate its use in clinical practice according to one's own experience and its real advantages.

From 4/2018 to today we have examined 457 cases of total hip arthroplasty implanted with Traser cup, of which 358 with standard cup and 79 with double mobility (of which 20 monobloc). The Traser System allows couplings with double mobility or polyethylene or ceramic insert. In cases of poor sealing of the cup on the acetabular floor, 2 or 3 acetabular screws were used. In 24 cases we used the cup for revisions either alone or with a combined revision stem, adapting well to complex acetabular bases and poor bone quality, in 3 cases with the aid of the multi-hole version to increase primary stability with acetabular screws.

With a follow up of 7 years we observed promising results, no cases of loosening of the acetabular component of the Traser were detected. However, 1 case of dislocation occurred with both the standard and dual mobility cups, so we found no significant differences between your types.

However, in cases of removal of Traser cups we had the sensation of excellent intra-operative bone-integration, so it supported us in its use. The advent of Traser technology in cementless knee arthroplasty offers new therapeutic possibilities, even in this joint.

15:54 - 15:55

2762 Audit Of Cauda Equina Syndrome Pathway: Improving Efficiency In Diagnosis And Management

Dylan Stafford Charles Green, Joseph Windley

Kingston Hospital, London, United Kingdom

Abstract
Cauda Equina Syndrome (CES) is a neurosurgical emergency requiring timely diagnosis and intervention. This audit assessed the efficiency of CES referrals and management over three months, analyzing 87 cases against national standards, including the Getting It Right First Time (GIRFT) recommendations. Key parameters included triage accuracy, use of bladder scans, MRI request timing, and overall patient outcomes.

Our findings revealed that 16 out of 87 patients lacked red flag symptoms, with back pain and bilateral sciatica being the most common complaints. A bladder scan was not documented in 27 cases, despite its use as a diagnostic tool. MRI requests were primarily made by orthopaedics (51/87 cases), with an average delay of 3.3 hours between initial ED assessment and orthopaedic review. Furthermore, 23 scans exceeded the target of being performed within four hours, primarily due to delays in out-of-hours imaging. Outcome analysis showed that 56 patients were discharged without CES, while 26 were admitted under orthopaedics and later discharged, contributing to unnecessary hospital costs.

The audit highlights key areas for improvement, including streamlining the MRI request pathway, reducing delays between ED and orthopaedic assessments, and optimising admission criteria to minimise unnecessary hospital stays. Enhanced collaboration between ED and orthopaedics, along with protocol refinements, could significantly improve CES management efficiency and resources.

15:33 - 15:34

1095 Changing Trends In Traumatic Spinal Cord Injury In An Aging Society: Epidemiology Of 1152 Cases Over 15 Years From A Single Center In Japan

Kazuya Yokota[1], Kazu Kobayakawa[1], Hirokazu Saiwai[1], Kiyoshi Tarukado[1], Kenichi Kawaguchi[1], Takeshi Maeda[2], Osamu Kawano[2], Yasuharu Nakashima[1]

1. Kyushu University, Fukuoka, Japan
2. Spinal Injuries Center, Fukuoka, Japan

Abstract
This study aimed to clarify the up-to-date epidemiology and demographics of patients with traumatic spinal cord injury (TSCI) treated at the largest SCI center in Japan. Data on all patients admitted to the Spinal Injuries Center with TSCI between May 2005 and December 2021 were prospectively collected using a customized, locally designed SCI database named the Japan Single Center Study for Spinal Cord Injury Database (JSSCI-DB). A total of 1152 patients were identified from the database. Our results revealed a statistically significant increasing trend in age at injury. Since 2014, the average age of injury has increased to exceed 60 years. The most frequent spinal level affected by the injury was high cervical (C1-C4: 45.8%), followed by low cervical (C5-C8: 26.4%). Incomplete tetraplegia was the most common cause or etiology category of TSCI, accounting for 48.4% of cases. As the number of injuries among the elderly has increased, the injury mechanisms have shifted from high-fall trauma and traffic accidents to falls on level surfaces and downstairs. Incomplete tetraplegia in the elderly due to upper cervical TSCI has also increased over time. The percentage of injured patients with an etiology linked to alcohol use ranged from 13.2% (2005-2008) to 19% (2014-2017). Given that Japan has one of the highest aging populations in the world, epidemiological studies in this country will be very helpful in determining health insurance and medical costs and deciding strategies for the prevention and treatment of TSCI in future aging populations worldwide.

15:42 - 15:43

2522 Enhanced External Counterpulsation: A Novel Approach To Enhance Fracture Healing And Functional Recovery In Femoral Neck Fracture Patients After Cannulated Screw Fixation – A Randomized Controlled Trial

Xin Wang, Zheng Wang, Wang Zhang, Xue Fang, Changhuan Liu, Zhe Xie, Zonghuan Li, Baiwen Qi, Aixi Yu

Department of Orthopedics Trauma and Microsurgery, Zhongnan Hospital of Wuhan University, Wuhan, China

Abstract
Background: Treating femoral neck fractures (FNFs) with internal fixation can lead to complications such as delayed union, nonunion, or avascular necrosis (ANFH). This study assessed the effectiveness of postoperative enhanced external counterpulsation (EECP) for FNFs treated with cannulated screw fixation.

Methods: A single-center, prospective, randomized controlled trial included patients with acute FNFs eligible for treatment. Participants were randomly assigned to either the EECP group, which received daily 1-hour sessions for 7 weeks starting three weeks post-surgery, or the control group, which received standard care. Color Doppler ultrasound measured the peak systolic velocity (PSV), end-diastolic velocity (EDV), and resistance index (RI) of the medial femoral circumflex artery (MCFA). Healing time, incidence of ANFH, nonunion, and Harris Hip Score (HHS) were recorded at 3, 6, and 12 months.

Results: Of 64 patients, 31 were in the EECP group, and 33 in the control group. The EECP group showed significantly higher PSV and EDV and lower RI ($p < 0.001$). All fractures healed, but healing time was shorter in the EECP group ($p < 0.001$). No significant difference in ANFH rates was observed ($p = 0.615$). While HHS at 3 months showed no significant difference ($p = 0.165$), the EECP group had higher scores at 6 and 12 months (both $p < 0.001$).

Conclusions: Postoperative EECP effectively enhances fracture healing and functional recovery in FNFs treated with cannulated screw fixation.

15:55 - 15:56

2682 Effect Of Restricted Kinematic Alignment Total Knee Replacement On Ankle Alignment In Varus Deformity

Bartosz Maciag[1], Marcin Lapinski[1], Grzegorz Maciag[2], Artur Stolarczyk[1]

1. Department of Orthopaedics and Rehabilitation, Medical University of Warsaw, Warsaw, Poland
2. Department of Pediatric Orthopaedics and Traumatology, Medical University of Bialystok, Bialystok, Poland

Abstract

Introduction

Total knee replacement (TKR) is an effective treatment for knee osteoarthritis, particularly in varus deformities. Restricted kinematic alignment (rKA) aims to restore native knee anatomy, but its impact on ankle alignment remains unclear. Changes in knee alignment may alter ankle biomechanics, potentially leading to pain, instability, or degeneration.

Aim & Objectives

To evaluate the influence of rKA TKR on ankle alignment in patients with varus deformity.

Study design & Methods

This prospective study included 103 patients (55 males, 48 females) undergoing rKA TKR. Patients were grouped based on preoperative varus deformity (<10° and ≥10°). Long-leg pre- and postoperative weight-bearing radiographs assessed hip-knee-ankle (HKA) angle, medial proximal tibial angle (MPTA), ankle joint orientation angle (AJOA), and tibial plafond talus angle (TPTA). Statistical analyses included t-tests, Mann-Whitney-Wilcoxon tests, Spearman's correlation, and TOST equivalence analysis.

Results

Significant correlations were found between preoperative knee alignment (MPTA, HKA) and AJOA (r_s=0.48, $p<0.0001$). Postoperative changes in MPTA and HKA were associated with AJOA changes (r_s=-0.39, $p=0.0001$). Patients with severe preoperative varus showed greater postoperative AJOA changes ($p<0.0001$). Equivalence analysis suggested comparable TPTA changes between groups ($p=0.028$).

Conclusion

rKA TKR influences ankle biomechanics, with greater preoperative varus linked to increased postoperative ankle varus. While no immediate symptoms were observed, long-term studies are needed to assess distal joint complications. These findings highlight the need for comprehensive lower limb alignment planning in TKR patients.

Keywords: total knee replacement, ankle, deformity, restricted kinematic

15:37 - 15:38

790 The Management Of Unstable Length Femur Fractures In The Pediatric Age Group Using SBP In Misuratas Medical Center

Yousef Mohamed Elghawail

misurata medical center, Misurata, Libya

Abstract
The management of Unstable length femur fractures in the pediatric age group using SBP In Misuratas medical center

. Yousef Elghawail, Osama Tlalah Nura Bouzgayya
Department of orthopedic, Misurata medical center, Misurata University. Libya

Mid-shaft femur fracture is one of the most common fractures in children, however, while the best management is surgical, the method of choice is still controversial in the age group of 5_13 year olds, the target of this study was to appreciate the advantages of using the sub muscular bridge plate technique , all children in this study had unstable length mid shaft femur fractures and were managed over the period of 2 years with
SBP. The 12-month post-operative follow up focused on comparing between the fractured leg & the healthy leg, evaluating LLD, union, alignment and other complications. Results:, 16 patients (Mean age 8±2 year) were involved. The majority of the fractures were unstable length. Two open fractures Type IIIA in Gustilo and the patients Wight was over 45 kgs in some of these patients . 12 fractures were mid shaft, 2 involved the junction between proximal & mid shaft & 3 were distal third femur fractures . All fractures achieved union within adequate time, no overall leg length discrepancy and no coronal deformity was observed at 12 and 24-months post-operative fallow up. Conclusion: SBP technique is considered a good technique for the management of un stable length mid shaft femur fracture and has shown good results in union, limb length and alignment.

15:36 - 15:37

1013 How To Manage Residual Hip Dysplasia After Open Reduction Of Developmental Dysplasia Of The Hip (DDH)-Stepwise Approach.

Hesham Mohamed Elbaseet

Assiut University Hospital, Assiut, Egypt

Abstract
Introduction:
Surgery of Developmental dysplasia of the hip (DDH) aims at concentric reduction to provide normal development.
Residual hip dysplasia could result in hip osteoarthritis on the long run if left untreated.
Clinical and Radiological evaluation: X-ray ,CT and MRI
Femoral derotation osteotomy (FDO): Intraoperative x ray in neutral and internal rotation detects necessity and amount of derortation needed with the help of neck version angle in CT axial cut. Avoid excessive varization because it increases lurching gait.
U-shaped incision for opening hip capsule: if medial joint space is still wide after FDO and clearance of fibrous tissue filling the joint and capsule plication is needed. U-shaped incision provides a good thick flap for suturing with multiple stitches which is more feasible in recurrent cases with adhesions and friable tissues.
Pelvic osteotomy: choice of suitable type (Shelf, Dega and Pemberton) according to preoperative planning in x ray and CT, patient`s age and status of triradiate cartilage.
Hip spica immobilization: for 6 weeks then weight bearing encouragement as tolerated.
Difficulties:Adhesions and Deficient acetabulum
Results: Out of 407 operated hips 19 cases on follow up required further intervention.
Discussion:
Residual hip dysplasia after DDH open reduction is a challenging situation. Full examination and radiological evaluation is essential for preoperative planning. Good experience and À la carte intraoperative decisions are mandatory to end up with concentric hip reduction.
Conclusion:
Appropriate assessment, preoperative planning, surgical techniques and postoperative rehabilitation give better results for residual hip dysplasia after DDH open surgery.
Conflict of Interest: None

15:48 - 15:49

1067 Combined Trochlear And Medial Humeral Condylar Fracture In An Adult With No Underlying Bone Pathology

Kaunteya Ghosh

KPC Medical College & Hospital, Kolkata, India

Abstract
A 58 year old woman with BMI over 30 sustained a fall on the point of her elbow with the forearm in valgus . Radiographs and further CT with 3D reconstruction showed a Trochlear fracture which extended upto the medial supracondylar ridge . The trochlea was sagitally split anteroposteriorly into a posterior and anterior fragment and was dangling with a slender soft tissue contact with the lateral column - the olecranon fossa was distorted . The fracture was accessed via a posterior distal humerus approach via olecranon osteotomy and anconeus flap, the ulnar nerve was mobilised and the fragments were taken under control of joysticks . A kittner was used to reform the olecranon fossa using minimum pressure , once the fluoroscopic shape of the fossa was satisfactory , the Trochlear fragment was fixed using Herbert screws. The medial condyle was fixed with medial plating (locking , interfragmentary and cortical screws).

15:56 - 15:57

512 Improving Surgical Scrubbing Technique: An Audit Of Medical Student And Foundation Doctor Compliance With NHS Guidelines

Akram Hagos[1], Manraj Bawa[2], Safeer Javid[2], Philip Stott[2]

1. Brighton and Sussex Medical School, Brighton, United Kingdom
2. University Hospitals Sussex, Brighton, United Kingdom

Abstract

Aim:

To evaluate the knowledge and adherence of medical students and foundation doctors to NHS England's Surgical Hand Antisepsis guidelines, to identify areas for improvement in surgical scrubbing education.

Background:

Surgical site infections contribute significantly to morbidity, mortality, and healthcare costs, with proper surgical scrubbing playing a vital role in infection prevention. Despite this, no formal scrubbing training exists for medical students and foundation doctors, potentially limiting theatre participation and compromising patient safety.

Methods:

A cross-sectional survey was conducted among 35 medical students and foundation doctors. An online questionnaire assessed knowledge, according to NHS Best practice guidelines, of scrubbing technique, components, duration, and responses to breaches in sterility.

Results:

93.9% correctly identified essential scrubbing components however, only 6.1% knew the correct scrubbing order. Although 87.9% demonstrated knowledge of hand positioning and rotational techniques, only 21.2% identified the recommended palm-to-palm rubbing duration.

Additionally, 18.2% incorrectly responded to sterility breaches, highlighting a potential gap in adherence.

Conclusion:

Participants exhibited a strong understanding of general scrubbing principles; however, notable deficiencies in technique and adherence to best practices were identified. Variability in scrubbing protocols across trusts may have contributed to these gaps. Standardised, structured training is needed to improve adherence and enhance patient safety.

15:38 - 15:39

2547 Post-Traumatic Wrist Abscess : About A Case

Nesrine Nesrine Rehaimia[1], Ahmed Chahine Toualbi[2]

1. ehs benaknoun, Algiers, Algeria
2. chu bedjaia, Bedjaia, Algeria

Abstract
introduction
a post traumatic wrist abcess is a localized collection of pus that forms after injury. the wrist anatomical complexity can lead to severe complications if not rapidly treated
aims:
abcess management seeks to provide insights into effective treatment to save the wrist articulation for easy life of our patient
materials and methods :
our patiet is a 61 old lady who consulted for wrist fracture treated by plaster cast immobilisation , after a week she comes back to the ER with severe pain and bad smell and tempreture , once the plaster removed we could see swelling redness on the wrist we asked for an ultrasound that revles an intra-artical abcess . we directly admitted our patient to the operating room for a curettage and external fixation and antibiotherapy
results and discussion :
as we can say wrist fixation by racking or screwed plate were the best options from the beginin , but the conservative tratment is also a good option only in good conditions
now with a long time healing and heavy external fixation we can risk the wrist stifness and ununion of the bone
conclusion :
treatment of wrist fracture depends of the type and severity of the trauma , also on the age and health condition of patients .appropriate treatment is the key of ensuring proper healing and preventing long time complications.

Wednesday, 3 September

JAM 4
15:32 - 15:33

64 Phase-Specific Analysis Of Robotic-Assisted Knee Arthroplasty: Identifying Critical Learning Curves Across Three Implant Designs

Kengo Harato[1], Shu Kobayashi[2], Kazuya Kaneda[2], Tatsuaki Matsumoto[2], Yasuo Niki[3]

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Abstract
Background: Robotic-assisted total and unicompartmental knee arthroplasties (RA-TKA, RA-UKA) are increasingly used to improve surgical precision and clinical outcomes. However, these systems introduce a learning curve, especially during different procedural phases. Current literature lacks detailed analyses of phase-specific contributions to the learning curve and variations among implant designs. This study aimed to identify critical procedural phases impacting operative efficiency and propose tailored educational strategies. It was hypothesized that device-specific learning curves significantly influence procedural durations.
Methods: A total of 204 RA-TKAs (bi-cruciate retaining (BCR) and stabilized (BCS)) and RA-UKAs performed with an image-free robotic system by three experienced surgeons were analyzed. Operative time was divided into eight procedural phases. Learning curves for each device and phase were evaluated using linear regression, with significant slopes indicating notable learning effects.
Results: Learning curves varied across devices and phases. BCR exhibited the steepest learning curve, particularly in Phase 5 (Bone Resection). BCS showed similar but less pronounced improvements in this phase. UKA demonstrated significant learning effects earlier, particularly in Phase 3 (Three-dimensional Model Creation). These findings revealed device-specific learning characteristics and emphasized the importance of phase-specific training.
Conclusions: This study identified device- and phase-specific differences in learning curves for robotic knee arthroplasties. BCR and BCS required focused training in later phases, such as bone resection, while UKA benefited from earlier-phase improvements. Tailored training protocols are essential for optimizing outcomes in robotic knee arthroplasty.

15:39 - 15:40

1078 Correction Of Complex Post Traumatic Pediatric Hallux Varus

Mohamed Abdelaal Hussein

the national institute of neuromotor system, Giza, Egypt

Abstract
•Introduction: The 1st metatarsal and the big toe are of great importance for good stability and gait so posttraumatic sever hallux varus is a disabling deformity results in major disturbance of foot function. However, few reports have documented the reconstruction of posttraumatic big toe deformity with metatarsophalangeal defect and contracted scared skin, reconstruction remains challenging.We present a case of posttraumatic sever hallux varus that is unique since the deformity is due to a big scar along the medial aspect of the foot with bony defect and pseudoarthrosis of metatarsophalangeal joint in 7 years old child. Method:We describe our surgical technique with a gradual distraction to length and correct the deformity of the 1st ray. We used our modified circular external fixator of two 5/8 rings fixed to the forefoot. Results: the frame removed after 4 months after full correction of the big toe and consolidation of the bone. Conclusion: We have two issues a bony problems and huge challenge about the soft tissue problem so the method of reconstruction is selected according to the site and size of the soft tissue defect after excision of the scar which can lead to fascial free flap which is a demanding technique with high risk for necrosis. Mechanical stretching with the gradual distraction can effectively increase the length and area of contracted scar. bone regeneration occurs according to to transchondroid ossification phenomena.the patient reports no limitations in performing activities of daily living and the cosmetic appearances of big toe was near normal.

15:51 - 15:52

1771 Risk Analysis For Postoperative Joint Infection After Arthroscopic Anterior Cruciate Ligament Reconstruction In Chinese Population: A Retrospective Study

Rubing Lin

Shenzhen Children's Hospital, Shenzhen, China

Abstract
Objective:To analyze the risk factors of postoperative joint infection after arthroscopic anterior cruciate ligament(ACL) reconstruction, so as to provide evidences for prevention. Methods:This is a retrospective case control study. Among 20549 arthroscopic anterior cruciate ligament reconstruction performed between year 2004 and 2023, 62 was diagnosed as postoperative joint infection, including 54 males and 8 females, with an average age of 26.5 years. Another 638 without postoperative infection was selected using stratified sampling according to the number of operations per year. The general condition and surgery data of all patients were collected from the electronic medical record system. Then univariate Logistic regression analysis was conducted to screen risk factors and multivariate analysis was carried out to create a prediction model. Moreover, an artificial neural network (ANN)model was created to predict the probability and compared with Logistic regression model. Results:The univariate Logistic regression analysis found 14 factors associated with postoperative joint infection, including gender, age, height, weight, body mass index(BMI), socioeconomic status, companioned procedure, single or double bundle reconstruction, portal number, tourniquet time, drainage number, pro-
phylactic antibiotics, previous knee surgery and companioned illness. The sensitivity,specificity, accuracy and area under curve of Logistic regression model was 100%,55.6%,60% and 0.843. As for ANN model, the corresponding values were 80%,89.9%,90% and 0.917. Conclusion Risk factors associated
with postoperative joint infection include gender, age, BMI, socioeconomic status, surgery date, tourniquet time, drainage number and previous knee surgery. Both Logistic model and ANN model yield satisfying predicting efficacy, with ANN model showing higher accuracy.

15:31 - 15:32

447 Percutaneous Epiphysiodesis Transphyseal Screw Versus Tension-Band Plating In Treating Coronal Angular Knee Deformities

Amr Abdelgawad[1], Ahmed Sabry[2], Mohamed Kamel[2], Omar Mady[2], Ahmed Khalil[2], Salma Mahmoud[2]

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2. Cairo university hospital, Cairo, Egypt

Abstract

Background. Angular knee deformities such as genu varum and genu valgum are common in children and can impact their functional mobility and quality of life. Although surgical interventions like guided growth plates or tension-band plates (TBP) and percutaneous epiphysiodesis transphyseal screws (PETS) are commonly used, comparative analyses of their efficacy and safety are limited. This study aims to evaluate the correction rates and safety profiles of TBP and PETS in treating pediatric coronal angular knee deformities.

Methods. A comprehensive literature search was conducted in Scopus, Web of Science, and PubMed until November 2024. Only comparative clinical studies comparing PETS and TBP in pediatric patients with coronal knee deformities were included.

Results. A total of five studies encompassing 473 physes were included. PETS demonstrated significantly higher correction rates compared to TBP, with an overall pooled mean difference in angular correction of 0.17°/month ($p < 0.0003$). In the femoral subgroup analysis (LDFA), the mean difference correction rate was 0.21°/month in favor of PETS ($p = 0.01$). Additionally, the PETS group achieved a statistically significant mechanical axis deviation mean difference correction rate of 1.02 mm/month ($p = 0.006$). Complication rates were relatively lower with PETS across all included studies.

Conclusion. PETS achieves faster angular and mechanical axis deviation correction rates compared to TBP, highlighting its efficiency in treating pediatric coronal angular knee deformities. Additionally, PETS demonstrates relatively fewer complications, reinforcing its position as a more effective and cost-efficient option for guided growth in children.

15:42 - 15:43

1371 Automated Landmark Detection For Hip Dysplasia Measurements Using An AI-Based Methodology

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Abstract
Keywords: Hip dysplasia, 3D analysis, Automated landmark detection
Hip dysplasia is characterized by insufficient acetabular coverage of the femoral head, which can result in joint instability and an increased risk of osteoarthritis. Traditionally, diagnosis and treatment planning rely on 2D X-ray measurements such as the lateral centre-edge angle (LCEA) and Tönnis angle. However, 2D imaging is inherently limited due to projection and magnification errors. In contrast, computed tomography (CT) provides a more accurate 3D assessment of hip morphology. The advent of weightbearing CT (WBCT) can further enhance 3D analysis under loading conditions. Despite its advantages, obtaining precise 3D measurements is labour-intensive and requires significant expertise, highlighting the potential for automated solutions.

This study investigates the potential of an AI-driven approach to automate hip dysplasia measurements from CT imaging. A heatmap-based U-Net model was trained using a dataset of 63 healthy cases to predict three key anatomical landmarks essential for calculating the LCEA and Tönnis angle in 3D. Model performance was evaluated on 19 test cases to assess its robustness and generalizability.

The model achieved a localization accuracies of 1 to 3 mm, demonstrating its potential for automated landmarking. However, larger errors were observed in some instances, indicating variability in performance.

This AI-driven landmarking approach enables automated hip dysplasia measurements such as the LCEA and Tönnis angle, demonstrating the potential of deep learning to streamline 3D diagnostics. While these results are a promising start, further development, validation and inclusion of pathological cases are necessary to ensure clinical applicability.

15:48 - 15:49

3039 Résultat Du Traitement Chirurgical De L'instabilité Rotulienne à Propos De 13 Cas

Alaeddine Jalleli, Wadie Mahjoubi, Mohamed Sadok Chtai

orthopedic department, Sousse, Tunisia

Abstract
Introduction:
The aim of our study was to evaluate the functional results of recurrent patella dislocations operated on by isolated Medio Patello Femoral Ligament (MPFL) plasty.

Material and methods
The study included all patients over 15 years of age operated on between 2012 and 2022 for recurrent patella dislocation by MPFL plasty and with a minimum follow-up of one year.
All patients had radiographs and CT scans. Epidemiological and clinical criteria (type of dysplasia according to Dejour, TAGT, patellar height) were recorded, as were associated procedures.
Outcomes were assessed in terms of function, return to activity, complications and KUJALA score.
Outcome:

The study involved 13 patients 13 knees, mean age 20.2 years, mostly young women (sex ratio 0.26). Nine patients had Dejour type A dysplasia, two had type B dysplasia and two had type C dysplasia. At a mean follow-up of 3.6 years, the mean KUJALA score was 87 compared with 63 preoperatively (p=0.009). There was no recurrence. All patients were able to resume physical activity.
Discussion and Conclusion:

Functional results were good but not very good. The particular profile of the majority of these patients (adolescents) and the absence of correction of trochlear dysplasia could explain some of the inadequate results.
Our study only allows us to assess functional results and look for complications in the short term.

15:50 - 15:51

2541 Consistency Of Indices In Closed Reduction Of Developmental Dysplasia Of The Hip Obtained By Hip Arthrography And Magnetic Resonance Imaging: A Retrospective Case-Control Study

Qiang - Jie, Fei - Su, Shuai - Yang, Yating - Yang, Xiaoju - Liang

Pediatric Orthopaedic Hospital, Honghui Hospital, Xi'an Jiaotong University, Xi'an, China

Abstract
Purpose: We aimed to verify the concordance between arthrography and magnetic resonance imaging (MRI) in the assessment of bony and cartilaginous coverage of the acetabulum in children.
Methods: The clinical data of 25 children with DDH who underwent closed reduction in our hospital from December 2020 to May 2022 were collected. The acetabular index (AI), labral acetabular index(L-AI), center-edge angle (CEA), labral center-edge angle(L-CEA), and femoral head coverage (FHC) were selected to measure in arthrogram and MRI. The intra-class correlation coefficient (ICC) was used to evaluate the consistency. The Pearson correlation analysis was performed to verify the relationship between bony and cartilaginous coverage.
Results: The ICC values of AI and CEA were high: 0.765 (95 % CI: 0.768 ~ 0.912), and 0.765 (95 %CI: 0.628 ~ 0.852). The ICC values of L-AI, L-CEA, and FHC were moderate: 0.719(95%CI: 0.562 ~ 0.822), 0.714(95%CI: 0.606 ~ 0.842), and 0.738(95%CI: 0.590 ~ 0.835), respectively. Pearson correlation analysis showed that: there was a positive correlation between AI and L-AI in MRI ($r = 0.472 > 0$; $P < 0.001$) and in arthrogram ($r = 0.544 > 0$; $P < 0.001$); there was a positive correlation between CEA and L-CEA in MRI ($r = 0.672 > 0$; $P < 0.001$) and in arthrogram ($r = 0.747 > 0$; $P < 0.001$).
Conclusion: In the observation of the bony and the cartilaginous coverage, there is good consistency between MRI and arthrogram.

15:56 - 15:57

2868 Treatment Outcomes Of Neurogenic Heterotopic Ossifications Of The Hip Joints

Ovsep Kesian, Anton Nazarenko, Gurgen Kesian, Tamara Latyrova

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Abstract
Key words: Neurogenic Heterotopic Ossification, Hip joint, Metabolic maturity, Joint contracture, Ankylosis
Neurogenic Heterotopic Ossification (NHO) is a disabling complication in patients with central nervous system (CNS) lesions, characterized by para-articular bone formation leading to joint contracture or ankylosis and chronic pain. To assess the impact of multi-stage preoperative planning on functional outcomes in patients with hip NHO using validated scales and questionnaires.
Materials and Methods:
Data of 53 patients with hip NHO were analyzed. Preoperative preparation included laboratory tests and imaging (Rg, CT, densitometry). Surgery was performed only in patients achieving radiologically and biochemically confirmed "metabolic maturity" of ossific deposits. Functional outcomes were assessed using the Harris Hip Score (HHS), WOMAC, Barthel Index, EQ-5D-5L.
Results:
Complete resection was achieved in 89% (47/53) of patients, partial resection in 11% (6/53). Postoperative outcomes showed significant improvement:
• HHS increased from 45.2 (SD: 12.1) to 82.5 (SD: 9.8) ($p < 0.05$).
• WOMAC decreased from 68.4 (SD: 10.3) to 24.1 (SD: 8.5) ($p < 0.05$).
• Barthel Index rose from 45.5 (SD: 15.2) to 75.3 (SD: 12.0) ($p < 0.05$).
• Quality of life (EQ-5D-5L) improved from 0.38 (SD: 0.12) to 0.72 (SD: 0.10) ($p < 0.05$).
Normalization of biochemical marker levels correlated with absence of recurrence ($p < 0.05$). Patients with stable biomarkers had no recurrence in 92% of cases.
Conclusions:
Preoperative radiographic evaluation and biochemical marker monitoring improved surgical outcomes, reduced recurrence rates, and enhanced self-sufficiency. Our method improving long-term outcomes in NHO patients, underscoring its clinical relevance.

15:43 - 15:44

581 The Masquelet Technique Using A Free Fibula Graft In The Treatment Of Bone Defects

Hatim Jabri[1,2], Mohammed Tazi Charki[1,2], Hicham Abdellaoui[1,2], Karima Atarraf[1,2], Moulay Abderrahmane Afifi[1,2]

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2. Faculty of Medicine, Pharmacy and Dentistry of Fez, Fez, Morocco

Abstract
Introduction:
Segmental bone defects due to trauma, infection, congenital anomalies, or following tumor resection are considered one of the major challenges facing orthopedic surgeons. The Masquelet technique has become a reference in the treatment of bone defects, using a wide range of grafts. Free fibula grafts are increasingly used to fill bone defects.
Objectives:
Present the advantages of using a free fibula graft in bone reconstruction using the Masquelet technique.
Methods:
We conducted a retrospective study over a 10-year period, from January 2014 to June 2024, including 6 patients who underwent reconstruction using the Masquelet technique with free fibula grafting.
Results:
The average age of our patients was 9 years. This technique was used in 3 cases of post-traumatic pseudarthrosis, 2 cases of Ewing's Sarcoma and one case of post-infectious pseudarthrosis. The bone defect was between 5 and 10 cm. In 3 cases, the defect was located in the leg. Femur, humerus, and ulna in one case each. Fixation was provided by a plate in 4 cases and by a Metaizeau pin in 2. Consolidation was achieved in 5 cases over a period of between 7 and 15 weeks. With an average follow-up of 5 years, limb inequality was noted in 2 cases. Slight angulation was noted in only one case.
Conclusion:
Reconstruction of long bone defects using the induced membrane technique seems to be a reasonable option for achieving good clinical and biological results.
Keywords:
bone defect ; Masquelet ; Free Fibula Graft

15:30 - 15:31

1258 Challenges And Long-Term Outcomes Of Cementless Total Hip Arthroplasty In Patients Under 30: A 24-Year Follow-Up Study With A Minimum 8-Year Follow-Up, Focused On Developmental Dysplasia Of The Hip

Marek Drobniewski[1], Bartosz Gonera[2], Lukasz Olewnik[2], Adam Borowski[3], Kacper Ruzik[2], Magdalena Krasinska[1], Andrzej Borowski[1]

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2. Masovian Academy, Plock, Poland
3. Medical University of Warsaw, Warsaw, Poland

Abstract
This retrospective study analyzed 5263 primary total hip arthroplasties (THAs) performed at between May 1985 and December 2016. After excluding, 101 uncemented THA procedures in 92 patients aged 30 years or younger were included. The majority (64.4%) were due to dysplastic coxarthrosis, while avascular necrosis (26.7%) and juvenile rheumatoid arthritis (8.9%) accounted for the rest. The average patient age was 25.6 years, with a mean follow-up period of over 24 years. Implant survival was estimated using the Kaplan-Meier estimator to determine the probability of implant longevity. Outcomes were assessed using Merle d'Aubigné and Postel scores, modified by Charnley
Over an average follow-up of 24 years, final outcomes using MAP classification were excellent in 24%, good in 37%, satisfactory in 8%, and poor in 32% of cases. Results compared between DDH group and control group indicate significantly more poor results for the DDH group compared to the control group Complications included intraoperative fractures in five cases, peripheral nerve dysfunction in six cases, and heterotopic ossification in eight cases. The K-M estimator indicated 10-year survival rates of 85.2% for the entire prosthesis, with 69.8% survival at 15 and 54.5% at 20 years.
Cementless THA in patients aged 30 or younger has demonstrated itself to be an efficacious treatment for hip osteoarthritis, yielding favorable bio-functional outcomes in both short- and long-term follow-up. Nevertheless, THA performed in the context of developmental dysplasia of the hip carries a significantly elevated risk of postoperative complications, most notably aseptic loosening, which critically undermines implant survival rates.

15:33 - 15:34

1491 Risks Of Death For Victims With Modern Combat Trauma Depending On The Anatomical Form Of The Injury

Sergiy Guryev[1], Vitaliy Kushnir[1], Sergiy Panasenko[2], Natali Iskra[1], Olexii Solovyov[1]

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2. Poltava Medicine Univercity, Poltava, Ukraine

Abstract
Introduction: Modern hostilities cause a change in the structure of injuries,. The aim of the study was to identify and assess the risks associated with the clinical and anatomical form of injuries. Study design: the study was conducted on 5,300 victims of hostilities in Eastern Ukraine. Results: the overall effective risk of death is 0.22, which is an insignificant risk. The highest risk of death is open injuries – 0.48 (significant). By type of injury, the highest risk is for abdominal injuries – 0.86 (catastrophic), lower extremity injuries – 0.51 (critical), thoracic injuries – 0.37 (significant), head and neck injuries – 0.30 (significant). Damage to the upper limb has the lowest risk. Combinations of two or more anatomical areas have an average significant risk of death - 0.44, isolated injuries - insignificant risk (0.14). The most life-threatening are the combination of cranial and abdominal injuries - risk index 1.2 (catastrophic), abdominal injuries and lower limb injuries - 0.96 (catastrophic), thoraco-abdominal trauma - 0.92 (catastrophic), chest and lower limb injuries - 0.77 (critical). No significant difference was found between the risk of death of military and civilian victims, such risk probably depends on the anatomical form and extent of the lesion. Conclusions: There is a probable dependence of the death of the victim on the anatomical form of the lesion, the extent of the lesion and the nature of the combinations of injuries. At the same time, there is no dependence on the status of the victim (civilian or military)

15:55 - 15:56

1318 Metastatic Olfactory Neuroblastoma With Unusual Solitary Metastasis To Femur: A Case Report And Literature Review

Abdulrahman Alaseem[1], **Mishari Alanezi**[2], Ahamed Altwaim[3], Fahad Almehrij[4], Ibrahim Alshaygy[1], Saeed Bahabri[5], Motaz Alaqeel[6], Waleed Albishi[1]

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6. King Saud University, Orthopaedic Department, Riyadh, Saudi Arabia

Abstract

Background:
Olfactory neuroblastoma (ONB), is a rare malignant tumor accounting for less than 6% of nasal cavity tumors, with an incidence of 0.4 per million. It is an aggressive tumor with a high risk of metastasis. However, skeletal metastases are exceptionally uncommon.

Case Presentation
A 33-year-old male was diagnosed with ONB after clinical presentation to the clinic with chief complaint of nasal obstruction. His past medical history is relevant for ex-smoking and positive family history of gastrointestinal and hematologic malignancy. He was treated with neoadjuvant chemotherapy, followed by trans-sphenoidal resection, postoperative radiotherapy, and adjuvant chemotherapy. Two years later, he began experiencing left thigh pain. Radiography of the femur revealed an ill-defined lesion in the midshaft measuring 8 cm. A biopsy was performed confirming the diagnosis of metastatic ONB. Unfortunately, the patient had only minor trauma and sustained a pathologic fracture. Subsequently, a wide surgical resection of the proximal two-thirds of the femur with proximal endoprosthetic reconstruction was performed. Resulting in an excellent functional outcome during his follow-up at 3, 6, and 9 months.

Discussion
Skeletal metastases of ONB are extremely rare, with only one previously reported case in the literature, involving multiple bony metastases. That patient was treated with only chemotherapy, which provided symptomatic relief without tumor shrinkage.

Conclusion
This case highlights a rare presentation of ONB with metastasis to the femur. Emphasizing on early diagnosis of skeletal involvement, as orthopedic intervention can prevent complications, and improve outcomes. Furthermore, a multidisciplinary approach is essential in improving oncological control and mobility.

15:54 - 15:55

1782 Trends In 30-Day Mortality Following Neck Of Femur Fractures In A District Hospital: A 6-Year Review

Ashika Shah, Prerna Kartik, Sharan Sambhwani, Marlib Quitua, Faizal Rayan, Sayyied Kirmani

Kettering General Hospital, Kettering, United Kingdom

Abstract

Introduction:
Neck of femur (NOF) fractures account for over 60,000 cases in England alone. These patients are often elderly, have multiple co-morbidities, and face a high 1-year mortality rate of approximately 30%. This study aimed to quantify trends in 30-day mortality among NOFF patients at our district hospital over a 6-year period.

Methods:
NOFF patients admitted to our hospital between 2018 and 2024 were identified from a prospectively maintained database. We compared the mean 30-day mortality rates across the years, analyzing factors influencing outcomes and identifying trends over time.

Results:
The 30-day mortality rate showed significant variation over the 6 years. In 2018, the mortality rate was 13%, and by 2024, it had decreased to 2.34%.

Conclusion:
The study highlights a marked reduction in 30-day mortality for NOFF patients, with key improvements linked to enhanced robust protocols, pre-operative optimization and multidisciplinary collaboration with orthogeriatric and anaesthetic teams. The increase in mortality in 2020 may be attributed to the challenges posed by the COVID-19 pandemic.

15:57 - 15:58

1599 Mortality Trends In Proximal Femur Fragility Fractures: Lessons From A Retrospective Cohort Analysis

Mukesh Kumar

Shaheed Mohtarma Benazir Bhutto Institute of Trauma (SMBBIT), Karachi, Pakistan

Abstract
Background:
Proximal femur fractures are a leading cause of disability and mortality in elderly populations, with global mortality rates reaching up to 30%. Delayed surgical intervention, especially in resource-limited settings, exacerbates poor outcomes. In Pakistan, limited healthcare accessibility and late patient presentations contribute to high mortality. This study evaluates early and 1-year mortality trends in patients with proximal femur fractures and identifies key risk factors influencing survival.

Methodology:
A retrospective cohort study was conducted at the Shaheed Mohatarma Benazir Bhutto Institute of Trauma (SMBBIT), Karachi. Data from 317 patients aged ≥60 years with femoral neck or intertrochanteric fractures (2018–2023) were analyzed. Kaplan-Meier survival analysis and Cox proportional hazards models assessed mortality trends and predictors.

Results:
The mean patient age was 73.5 ± 8.2 years, with an average surgery delay of 10.5 ± 6.3 days. One-year mortality was 20%, increasing with age (>80 years), ASA grade III/IV (HR = 2.10, $p < 0.001$), delayed surgery >14 days (HR = 1.50, $p = 0.01$), and comorbidities (HR = 1.30, $p = 0.02$). Austin Moore hemiarthroplasty had the highest 1-year mortality (30%).

Conclusion:
Timely surgery within 7 days significantly reduces mortality risk. Optimizing perioperative management and healthcare access is crucial to improving survival in elderly fracture patients, particularly in low-resource settings.

15:36 - 15:37

2761 The Hidden Challenge: Surgical Management Of Benign Scapular Tumors

Ana Lucinda Correia, Pedro Cardoso, Vânia Oliveira, Manuel Carrapatoso, Diogo Rodrigues, Filipa Adan Silva, Filipa Cordeiro, Bianca Barros, Diogo Catelas

Centro Hospitalar Universitário de Santo Antonio, Porto, Portugal

Abstract
Scapular osseous tumors are rare, with surgical complexity presenting additional treatment challenges. We report two benign osseous tumor cases treated at our institution.
Case 1: A 21-year-old male presented with persistent shoulder pain refractory to conservative treatment. Radiography detected a hypodense scapular neck lesion. MRI confirmed an expansive osteolytic lesion with heterogeneous matrix showing cortical permeation and erosion. CT-guided biopsy revealed an aggressive osteoblastoma. Following multidisciplinary consultation, aggressive curettage was performed via deltopectoral approach with coracoid osteotomy and subscapularis tenotomy. A bone window facilitated curettage, phenolization, and grafting, followed by coracoid osteosynthesis and subscapularis tenorrhaphy. At 6-month follow-up, the patient exhibited complete shoulder mobility without recurrence.
Case 2: A 43-year-old female noted a growing mass in the right clavicular region without pain or neurological deficits. Imaging (X-ray, CT, MRI) demonstrated a coracoid process lesion suggestive of osteochondroma, confirmed by biopsy. Due to rapid growth and potential compromise of critical shoulder structures, surgical excision was performed via oblique approach, requiring deltoid's anterior fiber detachment for exposure and safe resection, followed by fiber reattachment.
In conclusion, even benign scapular lesions present therapeutic challenges due to their rarity and the surgical complexity associated with scapular anatomy and its functional significance for upper limb mobility.

15:44 - 15:45

2820 CLINICAL OUTCOMES OF COMPLEX SUBTROCHANTERIC FEMUR FRACTURES WITH CEPHALOMEDULLARY HIP NAIL

Vineeth Jain, **Karthik Balasubramaniam**

Sports Injury centre,Vardhman mahavir medical college &Safdarjung Hospital, Delhi, India

Abstract
• AIM &OBJECTIVES: To study the clinical outcome of complex subtrochanteric fractures treated with cephalomedulary nail.
• METHODOLOGY: This is a prospective observational study of 24 cases of complex subtrochanteric femoral fractures between January 2018 to May 2019. All the patients are followed up on 2 post-operative days, after 4 weeks,12 weeks, 6 months and 1 year. X-ray Hip with thigh AP &Lateral view taken during each follow-up. Outcomes were assessed using a modified Harris Hip Score.
• RESULTS:
In our study of 24 cases, there were 19 males and 5 females and the mean age of 47.2 years. 70.2% of the patients were due to road traffic accidents predominating on the right side. In our study, 66% had type 4 seinsheimers and 34% had type 5 seinsheimers fracture. The mean duration of the hospital stay was 17 days. The mean time for full weight-bearing is 12 weeks. Good to excellent results are seen in 80% of type 4 subtrochanteric fractures and 75% of cases of type 5 subtrochanteric fractures. Complications: 4 cases had surgical site infection, 3 cases had varus, 1 case had developed implant failure.
CONCLUSION:
From this study, we conclude that the proximal femoral nail is an excellent implant in the treatment of complex subtrochanteric femoral fractures. The terms of a successful outcome include a good understanding of fracture biomechanics, good preoperative planning and accurate instrumentation.

Keywords: subtrochanteric fractures, proximal femoral nail

15:38 - 15:39

781 Preoperative Planning—rationale And How To Do It?

Amjad Hossain, Muhammad Tanvir Hasan, Md Nasimul Islam

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Abstract
Abstract
Introduction
Preoperative planning constitutes a fundamental tool in the management of fractures; however, its practical application is far from the desired, perhaps due to the absence of a basic and simple method, adapted to the current times. We describe a digital planning method, halfway between the traditional and the technological, which preserves its educational essence, allows for the understanding of the fracture and the individualisation of the osteosynthesis.

Materials and methods
After the initial analysis of the fracture and the patient's characteristics, different measurements are made on X-ray and CT images with a digital medical imaging software. These images are then copied into a presentation programme, in which the main fragments and fracture lines are traced with the computer pointer. These are subsequently moved into a reduced position and the implants for internal fixation are graphically represented together with a guide of the surgical strategy.

Results
We show 4 cases of different types of fractures operated through reduction and osteosynthesis after preoperative planning according to the described method. The basic points for the surgical planning, logistics, tactics and postoperative radiological results of each case are detailed.

Conclusions
Despite the rise of advanced planning software, traditional paper and pencil methods are still fundamental, even more so for the trauma surgeon in training. The digital planning method described is very appropriate for this purpose, as it combines the advantages of both methods: simplicity, accessibility, quickness, low cost, reproducibility, educational character, efficiency and possibility of simulation, corrections and reuse of cases.

15:49 - 15:50

1729 Associations Between Meniscal Extrusion, Demographic Factors, And Osteoarthritis Progression - A Cross-Sectional Analysis

Madhan Jeyaraman

ACS Medical College and Hospital, Dr MGR Educational and Research Institute, Chennai, India

Abstract
Introduction: Meniscal extrusion, defined as the displacement of the meniscus beyond the joint margin, is linked to knee osteoarthritis (OA) progression. Despite its importance as a biomarker for joint health, the biomechanical implications and clinical consequences of meniscal extrusion remain underexplored. This study aimed to analyze associations between demographic factors, imaging findings, and meniscal pathology in patients with meniscal extrusion to improve understanding of its clinical significance. Methods: A cross-sectional study was conducted on 52 participants with clinically diagnosed meniscal extrusion, confirmed via X-ray and MRI. Demographic data, imaging grades, and clinical information were collected retrospectively. Statistical analysis included chi-square tests for associations between categorical variables and Spearman's rank correlation for ordinal relationships. Results: The mean age of participants was 54.73 years, with a predominance of females (78.8%). Meniscal extrusion was equally distributed between left and right knees. Significant associations were observed between sex and Kellgren-Lawrence (KL) grading ($p = 0.013$) and between chronicity and MRI grading ($p = 0.0077$). A strong correlation was found between femoral and tibial cartilage damage (Spearman's $\rho = 0.64$, $p < 0.0001$). MRI medial tibiofemoral line findings were strongly associated with specific meniscal tears ($p = 0.0007$). Conclusions: Meniscal extrusion was significantly associated with sex, chronicity, and cartilage damage. Early detection and targeted interventions are crucial to mitigate OA progression. Further research should focus on standardizing meniscal extrusion measurements, establishing causative links, and assessing intervention efficacy.

Keywords: Meniscal extrusion, knee osteoarthritis, cartilage damage, chronicity, Kellgren-Lawrence grading.

15:37 - 15:38

766 Total Hip Arthroplasty In Protrusio Acetabuli.

Amjad Hossain, Muhammad Tanvir Hasan, Md Nasimul Islam

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Abstract
Abstract
Protrusio acetabuli or acetabular protrusion, is a complex condition that poses unique challenges in the context of (THA). It refers to the abnormal protrusion of the acetabulum into the pelvic cavity, which is associated with a variety of symptoms and functional limitations. The aim of this systematic review is to provide a comprehensive analysis of the current evidence, evaluate treatment efficacy, compare surgical techniques, and identify topics for future research along with improving evidence-based decision-making, improving patient outcomes in the management of this condition. Surgery was performed on 639 hips from 2000 to 2025 with a mean age of 60 years; 80% of females who mostly had inflammatory arthritis were followed up for 8.86 years (range, 2-15.4 years). Good outcomes have been achieved with THA using uncemented cups with bone graft; however, no conclusion could be drawn with regard to the femoral side. It can be concluded that the concept of restoration of the anatomical hip center of rotation is paramount for good outcome and better survival of the implant is important when using uncemented cups with a bone graft. In addition, screw augmentation for fixation is not recommended unless absolutely necessary. The most common complications were recurrent dislocations, polyethylene wear, and deep vein thrombosis. While the former required revision, conservative management was administered for the latter.
Keywords: Total hip arthroplasty, Protrusio acetabuli, Systematic review

15:45 - 15:46

1601 Joint Dislocations With Vascular Injury: Less Is More; A Case Series

SHARVEEN Ganapathy, SUDHAGAR Krishinan

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Abstract
Joint dislocations, particularly those resulting from high-velocity trauma, can lead to severe complications such as vascular injury. If these injuries are not recognized and treated promptly, they can result in significant morbidity and the most dreaded being limb amputation.

Case 1: A 20-year-old male was involved in a high-velocity motor vehicle accident, resulting in an irreducible left knee posterior dislocation with popliteal artery injury. Soft tissue reconstruction and capsular repair was done while reducing the knee. The injured arterial segment was excised and a reverse saphenous vein graft was used for end-to-end anastomosis, resulting in immediate restoration of distal pulses. A cross-knee external fixator was applied temporarily.

Case 2: An 18-year-old male fell from a roof, sustaining an open, irreducible posterior elbow dislocation with Brachial artery injury. Intraoperatively, capsule was repaired meticulously. The injured arterial segment was excised. A reverse basilic vein graft was used to bypass the injured segment. Immediate return of pulse and circulation was appreciated in this patient. Elbow was protected with a splint for 2 weeks

In Case 1, the patient achieved full weight-bearing at 6 weeks and is free of ischemic pain, though he may require ligament reconstruction in the future. In Case 2, he returned to work at 3 month post op.

This case series highlights the importance of early recognition and prompt intervention in joint dislocations with vascular injury. Minimal manipulation of soft tissue, coupled with short-term joint immobilization after vascular repair, led to an outstanding outcome in our patient

Thursday, 4 September

JAM 5
10:43 - 10:44

192 Aetiology Of Failure In Revision Total Knee Arthroplasty- A Systematic Review And Meta-Analysis

Sathya Lakpriya[1], Chirajit De[1], Muhammad Tahir[1], Sravan Sanka[1], Todd Pierce[2]

1. East Kent Hospitals University Foundation Trust UK, Kent, United Kingdom
2. University of Pittsburgh Medical Center, Maryland, United States

Abstract

Introduction

Revision total knee arthroplasty (TKA) remains a burden and will continue to increase in incidence. The purpose of this systematic review and meta-analysis is to analyse the current incidence and most common aetiologies of failure of revision TKA.

Methods

A comprehensive search of multiple electronic databases was performed for all articles pertaining to this topic from 2014 to 2025. A total of 18 studies were included in this study.

Results

Among 39,723 revision arthroplasties, the re-revision rate for this cohort was 13.5% (n = 5,350 revisions). The three most common aetiology prevalence for revision failure were prosthetic joint infection (27.5%; 95% CI, 26.4% to 28.8%), instability (13.6%; 95% CI, 12.7% to 14.5%), and aseptic loosening (12.8%; 95% CI, 11.9% to 13.7%). There was substantial heterogeneity found among the studies.

Conclusion

Our revision failure rate of 13% is similar to other studies. The most common aetiologies for revision TKA failure were infection, instability, and aseptic loosening. Future studies should focus on patient and surgery-specific factors which could maximize safety and efficacy of revision TKA.

10:48 - 10:49

411 Mortality And Functional Outcomes Following Lower Limb Periprosthetic, Peri-Implant Fractures – A 3-Year Experience From A Single Institution In A Mixed Asian Population

Claire Lee-Moeung[1], Zachary Chu[1], Chen Zhang[2], Michael Yam[3]

1. Yong Loo Lin School of Medicine, Singapore, Singapore
2. University of New South Wales, Sydney, Australia
3. Tan Tock Seng Hospital, Singapore, Singapore

Abstract

Introduction

Periprosthetic and peri-implant fractures (PPPIFs) are increasingly prevalent due to the rising incidence of joint arthroplasty and fixation procedures. This study investigates 12-month mortality, functional outcomes, and complications associated with PPPIFs, focusing on the impact of location of primary implant and management approach.

Methods

A three-year prospective study was conducted on patients presenting with PPPIFs at a tertiary institution. Primary outcomes included 12-month mortality, while secondary outcomes assessed functional recovery via the Modified Barthel Index (MBI) and mobility status, along with complication rates. Multivariate analysis was used to identify predictors of mortality and functional outcomes.

Results

Among 99 patients (mean age: 82.6 ± 8.1 years, 77.8% female), the 12-month mortality rate was 15.1%, with higher mortality in proximal fractures (17.6%) compared to distal fractures (12.5%). Surgical management was associated with greater functional improvements (mean MBI increase: 41.6 vs. 30.8, $p = 0.033$) but higher complication rates (35.8% vs. 12.5%, $p = 0.030$). Multivariate analysis identified Clinical Frailty Scale as a significant predictor of both mortality (OR = 3.86, $p = 0.009$) and functional recovery (estimate = -4.72, $p = 0.039$).

Conclusion

PPPIFs are associated with considerable 12-month mortality and peri-operative complications. It has marked functional improvement from post-fracture functional status, it falls short of pre-fracture functional status. Surgical management was associated with greater improvements in functional status but also increased peri-operative complications. Poorer CFS was found to be negatively associated with both functional and mortality outcomes. Outcomes were comparable based on location of the primary implant.

10:56 - 10:57

527 Functional Outcomes Of Synthetic Cartilage Implant-Cartiva For Metatarsophalangeal Arthropathy

Khurram Aziz Siddique

John hopkins Aramco hospital, Dahran, Saudi Arabia

Abstract
Background: The great toe's metatarsophalangeal joint (MTPJ) arthropathy severely impacts quality of life by producing significant discomfort and impairment. Arthrodesis, steroid injections, and conservative therapies were among the traditional therapeutic options. Cartiva, a synthetic cartilage hemiarthroplasty for the MTPJ, is one of the new choices. There is proof that this prosthesis improves function and discomfort without sacrificing joint movement as arthrodesis does. Reviews of the implant itself, however, are conflicting.

10:42 - 10:43

689 Modified Rotator Cuff Healing Index (MRoHI) - Reflection On The Significance Of Subscapularis Tears In RoHI -

Jieun Kwon[1], Dong-Ho Lee[2], Joo Han Oh[2]

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2. Seoul National University College of Medicine, Seoul National University Bundang Hospital, Bundang, South Korea

Abstract
The Rotator Cuff Healing Index (RoHI) is a scoring system designed to predict healing after rotator cuff (RC) repair. However, the original RoHI primarily focused on superior-posterior RC tears, excluding supraspinatus partial-thickness and subscapularis (SSC) tears. Additionally, its reliance on bone mineral density (BMD), which is not routinely assessed before RC repair, has limited its widespread adoption. Therefore, we aimed to develop a modified RoHI (mRoHI) that incorporates SSC involvement while excluding BMD.
We reviewed 795 patients who underwent RC repair between 2015 and 2022 and had postoperative imaging after at least one year to assess healing. Factors affecting RC healing, including SSC involvement, were analyzed using univariate and multivariate analyses. Based on the odds ratios (ORs) from multivariate analysis, we developed mRoHI by integrating independent risk factors for healing failure.
The overall healing failure rate was 15.7% (125/795). Multivariate analysis identified six independent risk factors: age > 70 years (OR = 1.93), tear size > 2.5 cm (OR = 1.97), tear retraction ≥ 3.5 cm (OR = 2.24), infraspinatus fatty infiltration ≥ Goutallier grade 2 (OR = 2.25), high work activity (OR = 2.58), and SSC repair (OR = 3.46). mRoHI (max 13 points) assigns 3 points for SSC involvement and 2 points for other factors. Healing failure rates were 6% for ≤2 points and 51% for ≥6 points.
In RC tears with SSC involvement, mRoHI enhances healing prediction and aids treatment decisions.

10:53 - 10:54

851 Outome Of Immediate Weight-Bearing After Femoral Neck System (FNS) Fixation For Femoral Neck Fractures: A Retrospective Analysis

Cing Syue Lin, Chiang-Sang Chen

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Abstract
Background: The femoral neck system (FNS) is commonly used for femoral neck fracture (FNF) fixation, but the impact of immediate weight-bearing as tolerated (WBAT) remains controversial. This study assesses whether immediate WBAT affects complication rates compared to restricted weight-bearing.
Methods: A retrospective analysis of 30 patients (9 males, 21 females; mean age 58.8 years) treated between September 2020 and June 2024. Fracture type, reduction quality, and preoperative posterior tilt (CT-based) were evaluated. Patients were categorized into immediate WBAT or restricted weight-bearing (non-weight-bearing for one month, followed by protected weight-bearing). Primary outcomes included loss of reduction, neck shortening, avascular necrosis (AVN), and nonunion. The secondary outcome was the need for revision surgery, including bipolar hemiarthroplasty or total hip replacement (THR).
Results: Seven fractures were displaced (Garden III–IV), including two Pauwels type IV. No significant difference in complication rates was observed between groups. However, poor reduction, especially varus mal-reduction or posterior tilt >20°, was associated with higher complication rates. Among four patients with poor reduction, two developed AVN, and two had malunion with neck shortening. Loss of reduction occurred in 10% (3/30), all in the restricted WB group. Seven patients required revision surgery (2 immediate WBAT, 5 restricted WB).
Conclusion: Poor reduction quality is the key factor influencing complications. When anatomical or valgus reduction is achieved, immediate WBAT is safe without increasing complication rates. Sagittal displacement, particularly posterior tilt, should be considered to correction in surgical planning to optimize fracture stability and improve outcomes

10:50 - 10:51

1618 Patient Satisfaction In Robotic-Assisted Versus Navigated Total Knee Arthroplasty

Denzel Ming Wei Lim, Wu Chean Lee, Lynn Thwin, Zachary Jieyi Cheong, Fu Yi Kan, Tong Leng Tan

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Abstract

Objectives:
Robotic-assisted TKA (rTKA) has been increasingly utilised by surgeons to improve intra-operative precision and planning. Current literature shows similar post-operative satisfaction between rTKA and conventional TKA (cTKA). However, there are limited studies comparing patient satisfaction post-operatively for rTKA and navigated TKA (nTKA). This study aims to primarily compare post-operative patient-reported satisfaction between rTKA and nTKA as well as functional outcomes as a secondary objective.

Methods:
We conducted a retrospective cohort study on 1,048 rTKA and nTKA patients, using prospectively collected registry data from a tertiary hospital with a minimum 2-year follow-up. rTKA utilised functional alignment while nTKA utilised mechanical alignment. We assessed post-operative patient satisfaction at 3 months, 1 year and 2 years via a 6-point Likert scale grouped into A (very satisfied, satisfied) and B (neutral, dissatisfied, very dissatisfied, terrible) and analysed the differences in outcomes between rTKA and nTKA.

Results:
Satisfaction rates were not significantly different at 3 months (P=0.819) or 1 year (P=0.295) post operation. At 2 years post-operation, rTKA showed significantly higher satisfaction (97.5% 233 out of 239 patients) than nTKA (94.2% 762 out of 809 patients) (P=0.0408). KSS-F (P=0.00910) and KSS-C (P=0.000300) scores favoured rTKA, but OKS scores showed no significant difference (P=0.262).

Conclusion:
2 years post-operatively, rTKA demonstrated superior outcomes to nTKA in terms of patient satisfaction as well as KSS-F and KSS-C scores. As rTKA has only been recently incorporated into Orthopaedic surgeries, future studies should prioritise evaluating longer term patient satisfaction to further improve patient outcomes.

10:54 - 10:55

1788 Effect Of Isokinetic Training Of Thigh Muscle Group On Graft Remodeling After Anterior Cruciate Ligament Reconstruction

Rubing Lin

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Abstract
Objective:To investigate the effect of isokinetic training of thigh muscle group on graft remodeling after anterior cruciate ligament (ACL) reconstruction, and summarize the relevant rules to guide the clinic. Methods: Between August 2023 and December 2023, forty patients underwent arthroscopic ACL reconstruction were randomly divided into isokinetic group and control group (n=20). The two groups of patients underwent staged rehabilitation treatment. The isokinetic group replaced the traditional intervention with the corresponding isokinetic strength training from 3 to 6 months after operation, and the traditional rehabilitation intervention was used in the control group. Finally, 12 cases of isokinetic group and 12 cases of control group with complete follow-up were enrolled in study. The peak torque (PT) of knee extension and flexion and hamstring quadriceps ratio (H/Q) were measured at 3 months, 6 months, 12 months, and the second-look arthroscopy. The MRI examination was performed at the same time to evaluate graft remodeling. The shape, tension, and degree of vascularization of grafts were observed under arthroscopy. The grafts were harvested and observed by HE staining.Results:At the second-look arthroscopy, the IKDC score showing significant differences when compared with preoperative scores in the two groups ($P<0.05$).At 6 months, 12 months, and the second-look arthroscopy, the PT of knee extension and flexion in isokinetic group were higher than those in control group ($P<0.05$). Conclusion:On the basis of regular rehabilitation training, using the isokinetic training system to develop a suitable post-surgical isokinetic rehabilitation training program is helpful in early muscle strength recovery, early graft remodeling.

10:49 - 10:50

1038 The Incidence Of Unintended Retention Of Orthopaedic Equipment In A Busy Regional Unit

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2. Ng Teng Fong General Hospital, Singapore, Singapore

Abstract

Introduction

Orthopaedic broken equipment, such as drill bits and screws, can break during surgery. The literature reports the rate of unintended retention of orthopaedic equipment to be 0.18-0.36%. The incidence is higher in trauma surgery. Such cases can lead to patient anxiety, late migration of implants and potential litigation.

Objective

Our 700-bed hospital in Singapore manages a high volume of orthopaedic cases. This study aims to report our incidence of retained broken instruments and assesses short-term outcomes.

Materials and Methods

This retrospective study reviewed orthopaedic surgery incident reports from 2019 to 2024. Data included surgery type, broken equipment, location, surgeon seniority, follow-up, and need for secondary procedures. Open disclosure to patients was also evaluated.

Results

Over a 5 year period, a total of 21606 operations were performed. There were 5166 (23.9%) trauma, 6420 elective (29.7%), 8459 emergency non-trauma (39.1%) and 1561 spine (7.2%) cases. The number of unintended retained equipment was 34 (0.157%). The mean operative time was 158 minutes (range 72–310), with a mean follow-up of 9.93 months. Trauma cases accounted for 29 cases (85.3%), with the femur most affected (12 cases, 35.3%). Drill bits were the most commonly broken instruments (13 cases, 38.2%). Surgeries were performed by consultants (24 cases, 70.6%) and registrars (10 cases, 29.4%). Open disclosure was conducted in all cases, with no secondary procedures required.

Conclusion

The rate of unintended retained equipment at our institution is low at 0.157%. Trauma cases had higher rates and the most commonly retained equipment were drill bit tips.

10:41 - 10:42

2114 Intra-Incisional Versus Extra-Incisional Pin Placement In Active Robot Assisted Total Knee Arthroplasty- Our Experience

Sujoy Bhattacharjee, **Malay Kumar**

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Abstract
Robot assisted total knee arthroplasty has improved surgical precision and functional outcomes. It requires placement of bone array tracker pins which is essential for intaoperative navigation and realtime of bone resection and implant positioning. Traditionally pins are inserted extra-incisionally using separate stab incisions. In our study we modified this to placing pins within the incision and followed them for minimum of 1 year to look for and compare the complications. A retrospective analysis was conducted at our institute, where we included patients operated with active CUVIS robot between January 2022 to January 2024. A total of 1106 patients had undergone cruciate retaining RA-TKA, of which 547 had Intra-incisional and 559 had extra-incisional pins placement. Functional Outcomes were assessed using Oxford knee score and Forgotten joint score. Post operative OKS and FJS were comparable in both groups, however, they were slightly better in the intra-incisional group (OKS: 42.16 Vs 41.78, FJF: 87.34 Vs 84.67). There were 2 incidences of pin site fracture and 3 pin site infections in extra-incisional group. In Intra-incisional group, there were 8 incidences of pin interference with movement of robotic arm, and surgery had to be converted to manual TKA in such cases. Concluding, Robot-assisted active TKA can be effectively performed using intra-incisional pin placement. It reduces need for extra incisions for placement of extra-incisional pins, while at the same time avoiding complications like pin site fracture and infections.

10:31 - 10:32

2526 Minimally Invasive Bedside Reduction Of Native Knee Dislocation With Skin Puckering

Faris Khan

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Abstract
Background

Knee dislocation is a limb-threatening injury that often requires urgent surgical intervention. Vascular compromise and compartment syndrome are serious complications, necessitating prompt diagnosis and management. Traditional reduction techniques may not be feasible in critically unstable patients. We present a novel, minimally invasive bedside technique for percutaneous reduction of a dislocated native knee with medial skin puckering.

Case Presentation

A 49-year-old man sustained multiple life-threatening injuries, including a dislocated native knee with medial skin puckering, following a road traffic accident. The patient was intubated and haemodynamically unstable in the Neuro-Critical Care Unit, preventing conventional open reduction in theatre. Given the urgency, we employed a novel percutaneous technique using heavy Ethibond® sutures to engage the displaced meniscus while applying valgus stretching and traction. This successfully achieved closed reduction at the bedside. Post-reduction imaging confirmed proper joint alignment.

Conclusion

To our knowledge, this is the first reported case of percutaneous reduction of a knee dislocation with skin puckering, converting a situation that typically necessitates emergency surgery into a less urgent case. This technique may serve as a valuable adjunct in critically ill patients where traditional methods are not feasible. Further studies should explore its reproducibility and wider clinical application.

10:37 - 10:38

2632 Lower Extremity Exarticulation For Recurrent Periprosthetic Infection After Copper-Coated Hip-Knee Megaendoprosthesis: A Case Report

Serik Balgazarov, Aleksey Belokobylov, Zhanatai Ramazanov, Ruslan Abilov, Artyom Moroshan, **Amanzhol Balgazarov**, Aliya Atepileva, Alexandr Kriklivyy

National scientific center of traumatology and orthopedics named after academician N.D.Batpenov, Astana, Kazakhstan

Abstract
Introduction: Multiple revisions for hip periprosthetic infection can lead to significant femoral bone loss, sometimes requiring interlocking hip and knee arthroplasties. This case report describes a patient who underwent hip disarticulation following the failure of a copper-coated megaprosthesis.
Case Presentation: The patient is a 40 year old female who was diagnosed with hip fibrous dysplasia about 15 years ago and underwent resection of the proximal femur with hip replacement. Subsequently, the patient was repeatedly treated for periprosthetic infection using two-stage revision. In the dynamics after surgical interventions, bone mass loss increased and a fracture of the condyles of the distal body of the anterior bone was detected before the megaendoprosthesis was implanted. One year after the megaendoprosthesis, periprosthetic infection recurred and debridement was performed. Another year after debridement, the patient came to the clinic with signs of sepsis and recurrence of periprosthetic infection. Due to the patient's life-threatening condition, disarticulation of the lower limb at the level of the hip joint was performed.
Discussion: Although the use of copper sputtering for antibacterial therapy has been shown in in vitro and in vivo results, its use in the clinic in this case was not justified, which may have accelerated the course of periprosthetic infection and the development of sepsis in the patient, leading to disarticulation.
Conclusion: This case demonstrates the need for other local antibacterial treatments, such as silver plating, antibiotic bone cement, to provide additional for prosthetic infection and possibly eliminate the use of copper plating for the treatment.

10:35 - 10:36

2671 Post Traumatic AVN Talus: Does Early Intervention With Stem Cell Therapy Revascularise The Bone?

Sameer Khateeb Mohammed, Naveen Lokikere

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Abstract
Introduction: Talus neck fractures are high energy injuries with risk of AVN despite early reduction and fixation. High degree of suspicion and early diagnosis is crucial to prevent advanced arthritis. Various modalities of treatment have been tried with varied success rates.
Aims & Objectives: We report a case of AVN TALUS treated by Core decompression with osteoblasts stem cell implantation in a young 23 year old ultimate frisbee player.
Study Design & Methods: A 23 year old patient presented with Hawkins type 2 Talar Neck fracture with subtalar dislocation after a fall during Ultimate frisbee game. He underwent CRIF with 2* 6.5mm cannulated cancellous screws within 8 hours of injury. At 3rd month follow up, MRI revealed features of AVN talus after union of fracture. He underwent Implant removal with Core decompression and stem cell osteoblast implantation as a 2 staged procedure. Partial weight bearing with active movements was allowed for the 1st month. Full weight bearing and eccentric exercises continued till 3 months.
Results: At 3 and 12 months follow up, mri scans showed normal vascularity and good recovery. He was able to return to sports at 6 months post surgery
Conclusion: We conclude that Talus core decompression and osteoblast stem cell implantation is a very effective way to ensure vascularity of talus is maintained and good bone quality at subchondral level in case of AVN of talus. Long term results needs to be studied further.

Keywords:
AVN, Talus, stem cell

10:30 - 10:31

2883 Combined External-Internal Fixation For Management Of Complex Foot Deformities With Ulcer

Abdullah Khaled, Ibrahim Mazroa, Mahmoud El-Rosasy

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Abstract
introduction: complex foot deformities may cause a highly resistant deformity associated with scars, tight soft tissue structures, pressure ulcers and dense callosities that make extensive open surgery very difficult and unfavorable. The aim of our study was to assess the results of correction of complex foot deformities with ulcer by debridement, serial dressing & combined internal-external fixation.Patient and methods:This prospective study included 24 patients with complex foot deformities and infected ulcers from 2016 to 2024. Thorough debridement of the ulcer was done in the first stage followed by serial dressing . The second stage includes correction of the deformity using a preoperative 3D planning and 3d printed surgical guides in complex cases. Correction of the deformity using either osteotomies or fusion according to the joint condition. Results: The mean age is 28years range (18-45y). the etiology of the complex foot deformity was cavo-varus in 16 cases ,4 cases with calcaneal deformity and 4 cases with sever flat foot deformity with peri talar subluxation. The ulcer was located at the lateral border of the foot in (10 patients), dorsum of the foot (6patients), medial border of the foot (4 patients) plantar surface over the calcaneus in (4 patients). The ulcer was healed in all cases without need of flap coverage. A minimal invasive osteotomies or fusion was done and fixed by screws in all cases and protected with external fixator frame. Conclusion:
The combined external internal fixation was a viable option in treatment of complex foot deformity with infected ulcer.

10:32 - 10:33

2940 Most Lesion In Occipital To C2 Can Be Treated Conservatively If Detected Early

Vijay Kumar Khariwal

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Abstract
This is a study of ten cases of lesions in occipital, atlas & axis vertebra pathology of ten cases which were detected early at the onset of disease process & all such patients they responded very nicely to routine OPD Rx except in major trauma cases. Undisplaced fractures without neurological deficit treated conservatively rest were referred to spine surgeon. This is study of ten cases which were as 4 cases were of T.B, 4 cases of Rheumatoid arthritis, 2 cases of # atlas undisplaced. All these cases were treated by simple cervical collar & rest proper medicine as OPD patients. All the patients were under strict observation for any deterioration. Aim of study is that in such like cases many times pain is not severe it's the suspicion of treating doctor to take proper X-ray & other advance investigation. Early detection can prevent major catastrophe & major complicated surgery can be avoided like arthrodesis, difficult screw fixation & also from commercial angle. Though safe surgery is available but still one must try to prevent surgery if it can be.

10:36 - 10:37

1015 Our View Of Minimally Invasive Surgical Treatment Of Asymmetrical Crusarthrosis

Anuar Askarul? Kossubayev, Kairat Bolatovich Tazhin

NSCTO named after acad. N.D. Batpenov of MH RK, Astana, Kazakhstan

Abstract
Abstract
Ankle arthrosis, particularly when asymmetric, poses significant orthopedic challenges due to disrupted mechanical alignment, exacerbating degenerative joint processes. Supramalleolar osteotomy (SMO) is a contemporary joint-preserving surgical method increasingly used for treating ankle osteoarthritis. By realigning the mechanical axis, SMO improves load distribution within the ankle joint, potentially reducing the necessity for arthroplasty or arthrodesis. However, clear guidelines for treating asymmetric ankle arthrosis with this approach remain undefined.
Purpose
The purpose of this study is to present our experience employing minimally invasive SMO using a custom distal medial wedge miniplate to treat asymmetric ankle arthrosis and to clarify the choice of surgical method for this pathology.
Materials and Methods
Six clinical cases were analyzed, with patients selected based on asymmetric arthrosis criteria. Surgical treatment primarily involved supramalleolar opening osteotomy combined with fixation using our custom mini-plate.
Results
Postoperative assessment was demonstrated significant clinical improvements, enhanced functional scores, and correction of radiographic deformity indices. Successful outcomes depended on accurate preoperative evaluation of deformity angles, customized surgical planning tailored to deformation severity and type, strict adherence to rehabilitation protocols, and application of advanced implants enhancing stability and reliability.
Conclusion
Minimally invasive supramalleolar osteotomy with the use of a miniplate is achieved effective and safe correction in both early and advanced stages of asymmetric ankle osteoarthritis. Our findings underscore the potential of SMO as a valuable joint-preserving alternative, warranting broader consideration in orthopedic practice.

10:55 - 10:56

2954 Innovative Use Of Platelet-Rich Plasma Injections For Treating Ankle Sprain: A Retrospective Study

Pradeep Moonot, Lulu Damsas

Mumbai Knee Foot Ankle Clinic, Mumbai, India

Abstract
Introduction
Platelet-rich plasma (PRP) therapy shows promise in treating joint and soft tissue injuries, but its role in persistent ankle sprain pain remains unclear. Ankle sprains can impair mobility and quality of life, often requiring prolonged conservative. This study evaluates the effectiveness of PRP injections in patients with pain persisting beyond three months despite conservative treatment.
Aim and Objective
To assess the clinical and functional outcomes of PRP therapy in patients with persistent ankle sprain pain and determine whether a single PRP injection improves pain, reduces symptoms, and enhances functional scores in the short term.
Study Design and Methods
This retrospective study included 50 patients (18 females, 36%) with MRI-confirmed anterior talofibular ligament (ATFL) tears without instability. Patients received a single intra-articular PRP injection in the anterolateral gutter. Functional outcomes were assessed using the Visual Analogue Scale (VAS), the American Orthopedic Foot and Ankle Score (AOFAS), and the Foot and Ankle Disability Index (FADI). Follow-ups ranged from minimum of 9 months to 2 years with an average of 6 month.
Results
At an average follow up of nine months, significant improvements in VAS, AOFAS, and FADI scores were observed compared to baseline. No adverse effects were reported.
Conclusion
A single PRP injection provides short-term clinical and functional improvements in patients with persistent ankle sprain pain. Further randomized controlled trials are needed to validate its long-term efficacy.

10:38 - 10:39

771 A Randomized Controlled Trial On The Effect Of Different Intraoperative Tourniquet Pressure On Intraoperative Clear Field, Postoperative Pain And Complications After Total Knee Replacement.

Sudeep Kumar, Arijit Keshri, Anup Kumar, Balgovind S Raja

All India Institute of Medical Sciences, Patna, Patna, India

Abstract
Aim and Objectives: This study aimed to determine the relationship between different intraoperative tourniquet pressures (SBP + 80 mmHg, SBP + 100 mmHg, and SBP + 120 mmHg), with functional outcomes in terms of Visual Analog Scale (VAS) scores for pain at the surgical site and thigh pain at 24 hours, 48 hours, and one week postoperatively among the different TP groups. Additionally, we aimed to assess the bloodless operative field at the tibial and femoral cutting surfaces. Secondary objectives included evaluating changes in haemoglobin levels, estimated blood loss, wound complications, skin complications, creatinine phosphokinase (CPK) levels, and knee range of motion (ROM) after surgery.
Methods: A single-blinded randomized controlled trial was conducted with 90 patients (30 patients in each group) undergoing primary TKR for osteoarthritis. Data were collected at specified intervals, including VAS scores for pain, wound complications, and knee ROM.
Results: Postoperative pain analysis revealed that mean VAS scores at the knee and thigh were significantly lower in the SBP + 80 mmHg group post-surgery ($p < 0.0001$). The quality of the bloodless operative field did not significantly differ among groups. Mean haemoglobin loss and wound complication was also comparable across groups. Notably, the mean ROM at one-week post-surgery was significantly better in the SBP + 80 mmHg group (73.83°) compared to the SBP + 100 mmHg (61.67°) and SBP + 120 mmHg (62.50°) groups ($p < 0.0001$).
Conclusions: The findings suggest that lower intraoperative tourniquet pressures are associated with reduced postoperative pain and improved functional outcomes in TKR patients.

10:44 - 10:45

797 Floating Knee Birth Injury In Arthrogryposis, How Often Does It Happen?

Neil Alvin Asper Leal, Malaya R. Leal

Northern Samar Provincial Hospital, Catarman, Philippines

Abstract
Perinatal and obstetric care have been improved over time even in developing countries. Birth trauma rate decreases from 2.6 per 1000 live births in 2004 to 1.9 per 1000 live births in 2012. Birth injuries occurs more often in upper part of the body and rarely in lower extremity. Orthopedic surgeons are often required for management of fractures in newborn. The most common fractured bone in neonate is the clavicle. Fracture to a single long bone is rare and it is even more rare if it occurs in two long bones in the lower extremity. This is a case of a floating knee birth injury in a patient with arthrogryposis delivered via cesarean section in transverse lie treated with short course of overhead skin traction and went to fracture healing.

Thursday, 4 September

JAM 6
10:30 - 10:31

165 Intraoperative Ultrasound For Evaluating Distal Tibiofibular Joint Stability In Patients With Ankle Fractures

Haojie Lu, Zhe Zhao

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Abstract
Aims
Ankle fractures often involve syndesmosis injuries, leading to joint instability and traumatic arthritis. This study aims to establish a standardized ultrasound method for dynamically assessing intraoperative joint stability and guiding distal syndesmosis fixation.

Methods
The tibiofibular clear space was measured in 110 healthy participants both in a neutral position and under an external rotation torque of 7.2 N·m to establish reference ranges. The stretch ratio and bilateral stretch ratio were then calculated. Subsequently, the ultrasound external rotation stress test was performed intraoperatively, with results compared to intraoperative X-ray stress tests.

Results
The 95% reference ranges from healthy individuals showed tibiofibular clear space of 3.05–4.75 mm in neutral and 3.42–5.32 mm under external rotation. The stretch ratio ranged from 1.06 to 1.18, and the bilateral ratio from 0.96 to 1.04. The bilateral stretch ratio had 100% sensitivity (95% CI: 75.75%-100.00%) and 89.19% specificity (95% CI: 75.29%-95.71%). Instability rates for Weber B fractures were 53.1% (17/32) pre-fixation and 18.8% (6/32) post-fixation. For Weber C fractures, instability was 100% (10/10) pre- and post-fixation, with higher rates in Supination-External Rotation stage IV and Pronation-External Rotation stage III and IV injuries.

Conclusion
Intraoperative ultrasound is radiation-free, allows dynamic observation, and provides quantitative measurements. Its high diagnostic efficacy makes it ideal for assessing joint stability after ankle fracture fixation and guiding the need for additional syndesmotic fixation.

Keywords: ultrasound examination; distal tibiofibular joint; ankle fracture

10:45 - 10:46

243 Habitual Dislocation Of Patella In Children – Is MPFL Reconstruction Required

Ravi Mittal

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Abstract
Background: Habitual dislocation of patella is a relatively uncommon pathology in children. Though numerous techniques have been described in the literature for the treatment of patellar dislocations, none of these is effective in the surgical treatment of habitual dislocation of patella. We described our experience with a two in one procedure for habitual dislocation of patella in eighteen children.
Method: Eighteen children with habitual dislocation of patella were reviewed prospectively for twelve months following surgical procedure. The age ranged between 5 and 9 years. We performed graded lateral soft tissue release and medial transposition of lateral half of patellar tendon. Clinical results were evaluated using Kujala score, ability to do straight leg raise, knee range of motion and visual analogue scale.
Results: There has been no recurrence of dislocation. The mean Kujala score before surgery was 48 which improved to 97.8 at 12 months follow-up after the surgical procedure. At 12 months follow-up all patients were able to do straight leg raise and had almost full range of motion.
Conclusion: We conclude that graded proximal lateral soft tissue release along with medial transposition of lateral half of patella tendon helps in treating the habitual dislocation in patella in children. Decision for the extent of lateral soft tissue release must be taken intra-operatively. MPFL reconstruction was not performed in any of these cases. Our method of treatment is simple, cost effective and reproducible with excellent functional outcome.

10:48 - 10:49

528 The List- Transforming The Orthopaedic Trauma Management And Handover In A Sustainable And Cost Neutral Way.

Ghulam Dastagir Faisal Mohammed[1], **Anthony Ojo**[2], Chidimma Ndulule[2], Zaina Mansoor[3]

1. Welsh T&O Deanery, Cardiff, United Kingdom
2. Ysbyty Glan Clwyd Hospital, Rhyl, United Kingdom
3. Ysbyty Gwynedd, Bangor, United Kingdom

Abstract
The Microsoft Word tables or paper lists for trauma management/handover are not compliant with General Data Protection Regulation (GDPR)/Freedom of Information Act (FOIA). Handovers are the most vulnerable link in care of any patient and compliance remains patchy. Costly third party software don't combine trauma management and inpatient handover or allow for wider collaboration, and risk of data leaks persists. We designed "The LIST" based on prudent health care principles by Bevan Commission, using Microsoft 365 SharePoint, secured by local IT Policy, to solve this problem.
The SMART Aim of our Quality Improvement Project was -achieve efficient trauma management measured by trauma and Ward Handover in standardised format >90%, availability of outcomes of patients in clinic >90% and reduction of paper usage >90% at the end of six months. User satisfaction was assessed using survey.
At 6 months, daily trauma handover and weekend ward handover were 100% in a standardised format, 92% of clinic patients had an outcome from trauma meeting available, paper usage reduced by 90% . More than 70% of respondents said The LIST had allowed them to save at least 1 hour every day, all respondents said it was very easy to use, finding a patient was very easy, allowed them to maintain confidentiality and made their in-patient ward rounds easy. All respondents said The LIST was better because of secure image access, collaboration with other specialties, auditability, versioning history and access with phone.
The LIST makes trauma management efficient, handover effective and compliant with GDPR and FOIA.

10:38 - 10:39

290 Zitelli Bilobed Flap For Skin Coverage After Mucous Cyst Excision

Erica Marto[1], João Seixas[2], João Rosa[2], César Silva[2], Pedro Mota[2]

1. ULS Região de Leiria, Leiria, Portugal
2. ULS Santo António, Porto, Portugal

Abstract

Introduction:
Mucous cysts, commonly associated with osteoarthritic degeneration of the distal interphalangeal (DIP) joint, pose both functional and aesthetic concerns in hand surgery. Various local flaps have been proposed for defect coverage to minimize recurrence. The bilobed flap, originally designed for nasal reconstruction, is a double transposition flap in which the primary lobe fills the primary defect, while the secondary lobe compensates for the donor site defect. Zitelli refined this technique by limiting the rotational arc to 90–110º, optimizing tension distribution and improving aesthetic outcomes.

Methods:
A 55-year-old male presented with a one-year history of a painful, recurrently draining nodule on the dorsal aspect of the right third digit's DIP joint. Clinical and radiographic evaluation confirmed a mucous cyst with overlying skin atrophy and minor nail deformities. Under digital nerve block and tourniquet control, the cyst was excised, and the defect was reconstructed using a Zitelli-modified bilobed flap. Postoperatively, DIP joint immobilization was maintained for two weeks.

Results:
The surgical site healed uneventfully, with no major complications, cyst recurrence, or post-surgical nail deformities. The bilobed flap provided durable skin coverage with excellent aesthetic and functional outcomes.

Conclusion:
The Zitelli-modified bilobed flap is a reliable and effective technique for reconstructing skin defects following mucous cyst excision. It allows for complete cyst and atrophic skin removal while preserving the nail matrix, optimizing both structural integrity and cosmetic results. This technique represents a valuable approach in hand surgery for ensuring defect closure with minimal recurrence risk.

10:36 - 10:37

1202 Peri-Operative Mortality Following Neck Of Femur Fracture Surgery For Displaced Intracapsular Fracture Using Anatomical Femoral Stem In A Single UK Centre

Murray James Mackay, Adeel Akhtar

NHS FIFE, Edinburgh, United Kingdom

Abstract
Background: Studies concerning hip fracture mortality largely concentrate on 30-day mortality rates. Peri-operative mortality is not as well documented in literature. Bone cement implantation syndrome (BCIS) is a known, but poorly understood, cause of death in the peri-operative period.

Aim: This quality improvement project investigates peri-operative mortality rates, pre-disposing factors to BCIS, and possible interventions to reduce its incidence in one district general hospital.

Methods: The NHS Fife hip fracture database was manually searched for patients who died within 72 hours of receiving a cemented hemi-arthroplasty, using a Lubinus SPII stem following an intracapsular fracture between 2023 and 2024. Demographics of the patients were collected from the database and medical notes were reviewed for intra-operative details and documented cause of death. This data was analysed to identify the peri-operative mortality rate, the incidence of BCIS and pre-disposing factors for BCIS.

Results: There were 473 cemented hemi-arthroplasties performed during the period reviewed. 8 patients died within 72 hours, giving a peri-operative mortality rate of 1.69%. One patient died because of BCIS in theatre, giving BCIS an intra-operative mortality rate of 0.2%. The patient who died of BCIS was one of only two patients not to have their stem downsized intra-operatively.

Conclusion: This project suggests that the Lubinus stem should be downsized intra-operatively to reduce the risk of BCIS. However, given small sample size further studies may be required to prove this on a wider scale. These would further understanding of BCIS and peri-operative mortality following cemented hemi-arthroplasties.

10:33 - 10:34

1627 Comparative Biomechanical Evaluation Of Suturing Techniques In The Treatment Of Radial Meniscal Tears

Ludovico Lucenti[1], Antonio Petillo[1], Alessandro Di Rosa[1], Carmelo Burgio[1], Sofia Di Leonardo[2], Gaetano Burriesci[2], Francesco Bosco[1,3], Lawrence Camarda[1]

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3. Department of Orthopaedics and Traumatology, G.F. Ingrassia Hospital Unit, ASP 6, 90131, Palermo, Palermo, Italy

Abstract

Background

The large tensile stresses placed on sutures during knee motions pose a substantial difficulty for orthopedic surgeons treating radial meniscal injuries.

Objectives

The purpose of this study is to evaluate the biomechanical performance of three widely used suture techniques: cross-tie, double vertical, and double horizontal. The unique "double loop" suture is intended to improve stability and tensile strength.

Study Design & Methods

Controlled radial tears were performed on forty freshly frozen porcine menisci. One of the four procedures was used to repair each rip, and then the ultimate failure load and cycle loading displacement were measured by electromechanical testing.

Results

The ultimate failure load (111.1 ± 17.3 N) of the double loop suture was found to be significantly higher than that of the double horizontal (77 ± 7.3 N), cross-tie (52 ± 9.7 N), and double vertical (43.4 ± 17.2 N) sutures. After 200 cycles, displacement was similar, with smaller gaps observed in the double horizontal and cross-tie sutures.

Conclusions

The double loop suture may have better biomechanical stability and might be a good choice for treating radial meniscal injuries.

10:31 - 10:32

1766 Gallucio’s Pinning Technique In Scaphoid Pseudarthrosis: Experience Of A Military Hospital

Houssem Eddine Chahed, Talel Znagui, Mohamed Manai, Mohamed Hedi Gharbi, Achraf Abdennadher, Khalil Amri

Military hospital of Tunis, Tunis, Tunisia

Abstract
Introduction:
Non-union is a common complication of scaphoid fracture, which occurs in young population as it leads to persistent pain, limited range of motion, and potential long-term consequences. Military active patients are special, as they need a satisfactory functional result after scaphoid fracture, to perform their sophisticated tasks and a quick return to duty. We report the outcome of using the percutaneous elastic pinning method in treating scaphoid non-union.

Methods:
This is a retrospective case series. 26 military active patients treated for scaphoid non-union during a period of 3 years were included. All patients were treated by pinning following Galluccio's described method with a minimum of 1 year follow-up. Union rates, pain decrease, mobility range improvement and return to duty rates were noted.
Results:
The mean age of patients was 26.9 years old. All patients were men. 16 patients (61%) underwent surgery on their dominant arm. All procedures were performed by a single surgeon. 14 patients presented a Stade I and 12 patients were Stade IIa according to Alnot classification. Union achieved in 69% of cases, 22% had revision surgery for persistent non-union, with pseudarthrosis diagnostic superior to 6 months, 76% of patients were pain free while 18% reported slight pain, 78% regained a normal grasp strength, 85% regained satisfactory mobility range, 72% of patients returned to full active duty.
Conclusions:
Compared to methods which need surgical approaches, percutaneous fixation is an easy and rapid technique which can be used to obtain satisfactory results, particularly in recent scaphoid non unions.

10:49 - 10:50

1832 Management Of Pelvic Ring Injury By Combined ORIF With Plates And Percutaneous Screw Fixation: Functional And Radiological Outcome

Ravindra Mohan

King George's Medical University, Lucknow, India

Abstract
Pelvic ring injuries are prevalent across all age groups, approximately 3% of all skeletal fractures. Individuals between the age groups of 18 and 44 are most commonly affected, men experience these injuries more frequently than women. These injuries span from simple, minimally displaced fractures of the sacrum or pubic to high-energy disruptions of the bony or ligamentous ring. Spectrum of stabilization of these fractures varies from using binders to lumbo-pelvic triangular fixations.
Our study evaluate the functional and radiological outcomes of Open surgical stabilization using pelvic recon plates along with Percutaneous minimally invasive technique in the fixation of pelvic ring injuries.
Total 24 ptients were managed with this combined technique. Based on the fracture site and age of the patients, the indication for closed reduction and percutaneous screw fixation included cases with acetabular fractures who had no displacement when they were younger than 60 years and no displacement or minimal displacement (<5mm) when they were older than 60 years.
Results: out of 24 patients 18 were male and 6 were females, mean age was 38 years, 2 patients underwent wound wash due to infection, one patient had L5 nerve root compression which was relieved after removal of Ilio-sacral screw, one patient had arthritic changes after 5 months, and one had loss of fixation, 22 out of 24 patients started walking full weight bearing at mean durationof 9 weeks. Combined fixation using ORIF with Pelvic recon plated and percutaneous screws is effective method to fix pelvic ring injuries.

10:54 - 10:55

1027 Gamma Nail Treatment Of Per Trochanteric Fractures

Leila Nebchi, Anis - Lakhdar Hassam, Nasr-Eddine Rouag, Rachid Azoug, Rachid Doulache

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Abstract
The aim of our work is to demonstrate the advantages of treating pertrochanteric fractures with gamma nails.
Materials and methods: Our retrospective study includes 196 patients operated on for pertrochanteric fractures with gamma nails between 2022 and 2024. The average age was 71 years, with comorbidities in the majority of cases, the most frequent mechanism being home care accidents. The average time to care was three days. Patients were followed up clinically and radiologically for the first three months, then at 6 months, 1 year and 2 years.
Results: Average hospital stay: four days -Rehabilitation and early weight-bearing with walker from the first week -consolidation: 75 days on average. -Two postoperative infections. - three hardware removals.
Discussion: This osteosynthesis technique for pertrochanteric fractures offers advantages thanks to the biomechanical stability of the centromedullary nail, enabling early weight-bearing and rapid consolidation. Our clinical, radiological and functional results are satisfactory
Conclusion: Pertrochanteric fractures are a public health problem. The gamma nail is a biomechanically stable osteosynthesis technique with early verticalization and rapid consolidation.
Key words: elderly; hip fracture; Gamma nail
No conflict of interest

10:55 - 10:56

1034 Conservative Surgical Treatment Of Femoral Neck Factures: Analysis And Evaluation Of Results In 75 Patients Between 55 And 75 Years Of Age.

Leila Nebchi[1], Rachid Doulache[1], Rachid Azoug[1], Attika Mazari[2]

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2. Faculty of Medicine, Algiers1, Alger, Algeria

Abstract
This retrospective study analyzes the anatomical and functional results of conservative surgical treatment of femoral neck fractures in 75 patients aged 55 to 75, treated between 2021 and 2024 by osteosynthesis with double or triple screw fixation. The aim was to assess the efficacy of this approach, which is mainly used for fractures with little displacement. The fracture was classified according to the Garden, Pawels and Delbet criteria, and results were assessed functionally and radiologically using the Postel Merle d'Aubigné and Parker scores. The mean age of the patients was 63 years, with a slight male predominance (55%). Fractures were mainly caused by simple falls and classified as Garden II. In all 60 cases, the neck face was performed, and postoperative complications included hardware disassembly (4%), pseudarthrosis (15%) and osteonecrosis of the femoral head (12%). The functional outcome was good in over 50% of cases, but in 18% of cases, re-intervention was required due to osteonecrosis of the femoral head or pseudarthrosis
Discussion However, the success of this therapeutic approach depends on bone quality and fracture alignment, which may be compromised in older patients, increasing risk
Conclusion: Double-triple screw fixation of minimally displaced femoral neck fractures (Garden I-II) remains the method of choice, with satisfactory functional results
Keys word : Conservative surgical treatment of femoral neck; osteosynthesis with double or triple screw fixation; patients between 55 and 75 years of age.

10:56 - 10:57

1511 Successful Reconstruction Of The Medial Column Of The Foot In Chronic Osteomyelitis Following A Lisfranc Injury

João Nelas, Bianca Barros, Gonçalo Silva, Filipa Cordeiro, Mário Silva, Francisco Leite, Luís Costa

Centro Hospitalar Universitário de Santo António, Porto, Portugal

Abstract
A 26-year-old male sustained a Lisfranc fracture-dislocation in a road traffic accident and underwent fixation with Kirschner wires. Postoperatively, he developed purulent drainage, prompting surgical debridement. Tissue samples for microbiological analysis identified Serratia marcescens and Pseudomonas aeruginosa, leading to targeted antibiotic therapy. Due to soft tissue compromise, negative pressure wound therapy was applied, followed by coverage with an anterolateral thigh flap. Despite these interventions, persistent drainage required further debridement and extensive necrotic bone resection. To restore stability, the medial column was reconstructed using a tricortical iliac bone graft and plate fixation. After completing suppressive antibiotic therapy, the infection resolved, soft tissue healing progressed well, and the graft integrated successfully. The patient resumed daily activities without limitations and expressed high satisfaction with the outcome.

10:42 - 10:43

2147 Maintaining Tibial Original Length Using Primary External Fixation In Compound Gustilo IIIB : A Case Scenario

Mohamed Ibrahim[1], **Amro Issam Meligy**[2], Alaa Hussien[3], Mahmoud Abdou[1], Youssif Hatem Shalaby[2], Ahmed Mansour[4]

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Abstract
Introduction and importance: Gustilo IIIB compound tibial fractures, defined by extensive soft-tissue damage and periosteal stripping. Representing 20% of total open tibial injuries, Gustilo IIIB tibial fractures carry many complications as infections leading to nonunion and amputation. Management is an extreme challenge, our case here highlighting the interplay between biological resilience (fibular adaptation) and bone transport methods (Ilizarov and external LCP technique).

Case Presentation: An 18-year-old male presented to a tertiary trauma center after a motorcycle collision. FAST exam ruled out visceral injury. Imaging revealed a Gustilo IIIB open right tibial fracture with 50% segmental bone loss (10 cm), comminuted distal femoral shaft fracture and a CT-confirmed open-book pelvic fracture. Neurovascular status was intact. Management included anterior external fixation (pelvis), antegrade interlocking nailing (femur) and hybrid ring fixator with interfragmentary screws (tibia).

Clinical Outcomes: Radiographic union was obtained in femoral and pelvic fractures after a 12-month follow-up. The proximal tibial fracture manifested hypertrophic nonunion, accompanied by adaptive fibular hypertrophy (tibialization) and anterior tibial bowing. Clinically, the patient achieved full weight-bearing without assistive devices. Persistent nonunion will be managed by double ring fixator to enhance stability.

Clinical Discussion: This case illustrates the effectiveness of multidisciplinary protocols combining hybrid fixation (ring fixator with interfragmentary screws) for acute management and Ilizarov circular fixation for persistent nonunion. Fibular hypertrophy (tibialization) reflects biological adaptation, while staged interventions prioritize mechanical stability and soft-tissue preservation. Such strategies optimize functional outcomes by enhancing biomechanical demands with regenerative potential.

Keywords: Gustilo IIIB; fractures; tibialization; ring fixator; interfragmentary screws

10:50 - 10:51

773 The Global Burden Of Fracture-Related Infection: Can We Do Better?

Amjad Hossain, Muhammad Tanvir Hasan, Md Nasimul Islam

Labaid Hospital Ltd., Dhaka, Bangladesh

Abstract
Abstract
A "fracture-related infection" is a serious complication that can occur after a bone fracture, where bacteria enter the injured area and cause an infection at the fracture site, often arising from open wounds where the broken bone is exposed to external contaminants; this can lead to significant complications in bone healing and may require extensive treatment, including surgery and antibiotics. Although fracture-related infection is one of the oldest disease entities known to mankind, it has only recently been defined and, therefore, its global burden is still largely unknown. In this Personal View, we describe the origin of the term fracture-related infection, present the available data on its global impact, and discuss important aspects regarding its prevention and management that could lead to improved outcomes in both high-resource and low-resource settings. We also highlight the need for health-care systems to be adequately compensated for the high cost of human resources (trained staff) and well-equipped facilities required to adequately care for these complex patients. We aim to increase awareness among clinicians and policy makers that fracture-related infection is a disease entity that deserves prioritisation in terms of research, to standardise treatment and improve patient outcomes on a global scale.

10:43 - 10:44

1597 Prospective Validation Of AJMI Grading System For Cervical Myelopathy. A Decision-Support Tool (DST)

Qasim Ajmi, Poornanand Goru, Ahmed Al Naseri, Libin Scariya

Royal Wolverhampton NHS Trust, Wolverhampton, United Kingdom

Abstract
Introduction
Cervical myelopathy presents with a range of symptoms, including gait dysfunction (86%), hyperreflexia (79.1%), pathological reflexes (65.1%), upper limb paraesthesia (69.8%), and pain (67.4%).
Materials and Methods
This prospective study included 47 patients attending a spinal outpatient clinic with either an acute presentation of progressive myelopathy, conservative management for cervical myelopathy, or new referrals for assessment. Clinical records were reviewed, and demographic data were collected. The AJMI scores were calculated, incorporating MRI findings as a determining factor. Patients with a zero MRI score were classified as nonsurgical.
Results
The cohort had a mean age of 63.86 years (range: 48–79), with a higher prevalence among females. Cervical spondylotic myelopathy was the most common diagnosis. The AJMI scores ranged from 0 to 36, with 97% of patients scoring between 6 and 27. The most frequent MRI score was 3, and gait abnormalities were observed in 98% of cases. Patients aged 70–80 were less likely to exhibit all long tract signs.
Conclusion
Our findings suggest that the AJMI score is a highly sensitive tool for diagnosing and guiding the management of cervical myelopathy. Patients requiring surgery typically had scores of 6 or higher, while MRI-negative cases were referred for neurological evaluation instead of surgical intervention. As a single-center study, further multi-center validation is necessary to confirm the generalizability of these results.

10:39 - 10:40

1039 Lambrinudi Triple Arthrodesis With Posterior Tibial Tendon Transfer In Adult Fixed Equinus Deformity

Yash Manish Mehta[1,2], Prashant Agrawal[2]

1. Royal Bolton Hospital, Bolton, Greater Manchester, United Kingdom
2. Apollo Hospitals, Navi Mumbai, India

Abstract
Introduction: Fixed Equinus deformity involves limited dorsiflexion of ankle joint and restricted passive movement, along with media-lateral tibiotalar instability, progressive hindfoot varus, and forefoot supination deformity.Lambrinudi Triple arthrodesis involves surgical fusion of the talonavicular, talocalcaneal, calcaneocuboid joints to correct fixed foot deformities, relieve pain, provide stability, and create plantigrade foot.Lambrinudi arthrodesis with transfer of posterior tibial tendon (PTT) in adult patients to provide dynamic dorsiflexion & Pronation.

Methods & Methods, Case: 39 year old male with Fixed Cavo-Equinus deformity, operated with Lambrinudi Triple arthrodesis with Posterior Tibial tendon transfer and followed upto 5 years.Outcome measurements included radiographic and clinical investigations, including the Tibio-Metatarsal(TM) Angle, AOFAS Score & Ankle ROM, which were assessed preoperatively, immediate post operatively, 3 month, 6 month, 1 year& 5 years.

Results: The TM angles were 177,133,125,122, at Preop, immediate Postop, 3 months, 5 years respectively. Fusion was seen at 1 year follow up. Improvement in AOFAS Score with values 38, 57, 73 & improvement in Ankle ROM with values 0 (fixed),10,15 degrees at Preop, 3 months & 5 years Post Op respectively. Patient had no significant subjective pain affecting his daily activities, but patient had post-procedural right lower limb shortening of 1cm.

Conclusion: Procedure demonstrated clinical correction of foot deformity & improvement in functional outcome -AOFAS score, Ankle ROM.Ability of patients to use normal shoes and reduction in pain scores represent improvement in QOL.Correction of muscle imbalance and Tibialis-Posterior provided dynamic force for dorsiflexion & pronation of foot.

Keywords: Fixed Equinus, Lambrinudi, Tibialis-Posterior, TM Angle, AOFAS

10:44 - 10:45

837 Evaluation Of Pedicle Screw Insertional Torque As An Indicator Of Screw Placement And Clinical Utility

Takuya Mishiro

Takamatsu Red Cross Hospital, Takamatsu, Japan

Abstract
Objective:
Although in vitro studies have shown a correlation between pedicle screw (PS) insertional torque (IT) and bone density, clinical studies have reported limited correlation due to factors such as screw insertion position, bone quality, and patient activity. This study aimed to evaluate whether intraoperative IT measurements can serve as an indicator of screw placement and its potential clinical applications.

Materials and Methods:
This study included 45 patients (28 males, 17 females; mean age 70.0 ± 9.6 years) who underwent thoracolumbar PS surgery between January and December 2021. IT was recorded intraoperatively for 236 screws inserted using the free-hand technique. Bone density testing was performed in 33 patients (183 screws), and the correlation between T score and IT was analyzed.

Results:
Of the 236 screws, intraoperative deviation occurred in 2 cases, requiring reinsertion. Among the remaining 234 screws, 2 were Grade 1 and 5 were Grade 2 deviations, resulting in a 3.0% deviation rate. The mean IT value was 259.6 cN·m. The correlation coefficient between T score and IT was 0.48, indicating a mild correlation. IT deviation was 0.6% in the non-deviation group and -15.7% in the deviation group, suggesting a tendency for deviation but without statistical significance.
Discussion & Conclusion:
IT values showed a mild correlation with bone density, consistent with in vitro studies. However, clinical variations limit their standalone utility. Screws with deviations tended to have IT values differing from the patient’s average IT, suggesting IT could aid in screw assessment and reduce radiation exposure. Further studies are needed to validate its clinical siginifcance.

10:51 - 10:52

1383 Title: Results Of Morscher Femoral Neck Lengthening Using 3 D Planning And Using Patient Specific 3 D Printed Jig

Taral Nagda, Sushant Shrivastava

Institute of Paediatric Orthopaedic disorders, Mumbai, India

Abstract

Introduction:
In 1980 Erwin W. Morscher described a special femoral neck lengthening osteotomy, which consisted of simultaneous lateralization of the femoral shaft and distal transfer of the greater trochanter by making three parallel osteotomies at the base of the greater trochanter, and at the upper and lower borders of the femoral neck. We describe technique of 3 D planning and designing of 3 D printed patient specific guide (3DPSD) to do this complex procedure.
Methods:
We used the method in 5 patients with coxa brava: 1 post fracture neck femur, 3 post septic, 1 post Perthes. After doing 3 D CT scan segmentation was done using Mimic software and virtual osteotomies were done on 3 D model. 3 D image of pediatric DHS was place to simulate implant placement and direction of guidewires and screws mapped. The 3 D printed guide was used during surgery to mark the osteotomies and guide the direction of guide wires and pre drilled tracks for screws.
Results:
The final execution matched the 3 d planning. The technique helped to reduce surgical time, blood less and helped to make procedure accurate and easy.
Discussion:
The 3 D planning helps to plan correction of neck shaft angle, trochanteris position, neck length and limb length in case of coxa brava following premature physeal arrest. 3DPSG helps helps in making accurate osteotomy cuts and implant placement
Conclusion:
3 d planning and use of 3DD PSG helps in execution of technically challenging proximal femoral osteotomies.

10:32 - 10:33

272 Reverse Sural Artery Flap For Posterior Ankle Soft Tissue Defect

Abdelaziz Monsef Ali

Azhar university assuit, Assuit, Egypt

Abstract
Background and aim
Soft tissue defects of the ankle provide a significant challenge to reconstructive surgeons. Several techniques have been documented for this reconstruction, and all of these techniques varied in cost, difficulty, and outcomes. This study aims to evaluate the reverse sural artery flap for posterior-ankle soft tissue defect reconstruction.
Patients and methods
Nine patients with posterior ankle soft tissue defects due to different etiologies and requiring reconstruction were included and operated in the reconstructive microsurgery unit of Al-Azhar University Hospital, Assiut, Egypt, during the period between 2019 and 2022. These defects were covered by the reverse sural artery flaps. The follow-up period ranged from 18 to 36 months, and all the patients were evaluated for functional outcomes in terms of ulceration, sensation, patient satisfaction, and complications.
Results
All flaps survived with no complications. The mean operative time was 1.4±0.33 h. (1–2 h) and the mean hospital stay period was 2.4±0.52 days. Postoperatively, ulceration was recorded in 2 (22.2%) cases and sensation in all cases and the majority of patients were satisfied with the results (8 cases, 88.9%). Five cases had good Maryland score (55.6%), 2 (22.2%) cases had excellent, and only 1 case was recorded for poor and fair scores. All the defects were covered effectively with no complications.
Conclusion
The reverse sural artery flap could be one of the effective treatment methods for reconstructing posterior-ankle soft tissue defects. Besides, it has high reliability, ease, and versatility.

Thursday, 4 September

JAM 7
16:25 - 16:26

169 Custom Ulna Prosthesis Use In Challenging Revision Elbow Arthroplasty

Parag Raval, Hassan Raja, **Oubida Asaad**, David Butt, Will Rudge, Addie Majed, Mark Falworth, Deborah Higgs

Royal National Orthopaedic Hospital, Stanmore, United Kingdom

Abstract
Background

Bone loss in the proximal ulnar can provide a complex challenge in the setting of revision total elbow arthroplasty(rTEA). We present the largest cohort of custom ulna prosthesis(CUP) use for non-tumour indications.

Methods

Records were reviewed for all patients who had undergone CUP at our tertiary referral centre. Variables collected included: patient demographics, indication, number of previous surgeries, follow up, range of movement, complications, Oxford Elbow Score, Pain, EQ5D and SANE scores. Bone loss was graded using Mansat's criteria. Radiographic implant stability and integration. For completeness, patients were telephoned for outcome data when variables were missing.

Results

The cohort comprised 15 elbows. The mean age was 67.6 years(range 54-78). The median follow up for the cohort was 2 years(range 6 months- 6 years). The mean number of prior surgeries was 3(SD 0.92). Indications for the rTEA were 8 for infection, 4 for periprosthetic fracture and 3 for aseptic loosening. Radiographic bone loss: Type 1- 3, Type 2- 7, Type 3- 5. Post-operative implant fixation: Type A- 5 Type B- 6, Type C-4. The mean post-operative arc of movement was 118 degrees(SD 18.31). The cohort demonstrated improvements in the mean Oxford elbow score, SANE, EQ5D and pain scores. There has been one complication to date, with a single patient having a deep infection requiring a two-stage revision to another CUP.

Discussion

The use of CUP for rTEA has evolved due to the challenges associated with alternative strategies for these patients. We report good early to mid-term clinical and radiographic outcomes. Complications are low and outcomes satisfactory.

16:20 - 16:21

196 Broken Jamshidi Needle Cannula During Lumbar TLIF

Aashish Raghu, **Monisha Kapilan**

East and North Hertfordshire NHS Trust, Stevenage, United Kingdom

Abstract
Aim of the study- To report the management of broken Jamshidi needle cannula while performing lumbar TLIF

Method- Prospective study of clinical outcome for patient who underwent L4/5 decompression and TLIF fusion. Failed attempts (using second guide wire to engage, using tap, using ronguer) of retrieval of broken cannula led to insertion of pedicle screw adjacent to broken cannula and successful TLIF procedure. Post-op CT scan confirmed cannula positioned within left L5 pedicle far away from exiting or traversing nerve root

Results- No adverse events since surgery, patient has found relief in 6 week follow-up for bilateral buttock stenotic pain but will be unable to have future MRI scan as Jamshidi cannula is stainless steel. Few studies reported similar event and retrieval methods as this is a rare complication.

Conclusion-
Learning points-
1. Care taken to avoid change in trajectory during insertion/removal of Jamshidicannula as noted to easily break/snap once bent
2. Removal of broken instrument/implant may be difficult and may need to be retained to prevent further harm
3. Close monitoring/follow-up

It can be within best-interests for patient to retain broken steel cannula in-situ within pedicle to avoid further damage which can compromise pedicle integrity for fusion procedure or damage to adjacent neurovasculature and dural leak

References-
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2. https://fda.report/MAUDE/MDR/6438754
3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6551195/

16:12 - 16:13

564 Isolated Screw Versus Plate And Screw Fixation In Talar Neck Fractures: A Retrospective Comparative Analysis

Brendan Page, Mohamed Kareem Shaath, Bader Adam Nasir, Griffin Rechter, Joshua Robert Langford, George John Haidukewych

Orlando Health Jewett Orthopedic Institute, Orlando, United States

Abstract
Introduction:
The objective of this study was to evaluate and compare the complication rates associated with screw fixation versus plate fixation and independent screw fixation in the treatment of talar neck fractures.
Methods:
A retrospective cohort study was conducted to evaluate patients (aged ≥18 years) who underwent fixation for AO/OTA type 81.2 talar neck fractures between 2017 and 2022 at a single Level-I trauma center. Patients were categorized based on the fixation method employed: screw fixation alone (S) or a combination of plate and independent screw fixation (PS). The primary outcome was fracture union. Secondary outcomes included the development of avascular necrosis (AVN), post-traumatic arthrosis (PTA), infections, and the need for any secondary procedures.
Results:
A total of 70 patients were included in the study: 37 PS in the group and 33 in the S group. There were no significant differences when comparing demographics between groups. Comparing the two fixation techniques, higher rates of all complications were observed in the S group. Specifically, the S group demonstrated a significantly higher incidence AVN compared to the PS group (17 patients (52%) vs. 8 patients (22%); p = 0.01). Patients in the PS group were also 6.4 times less likely to develop osteonecrosis (95% CI 0.03 – 0.70; P = 0.02).
Conclusion:
Plate fixation of talar neck fractures appears to provide superior mechanical stability and may be more effective in preventing AVN compared to screw fixation alone.

16:07 - 16:08

571 Bilateral Neck Fratures: Case Report

Fernando Oliveira, João Marques, Francisco Rodrigues, Érica Marto, João Pedro Caetano, Paula Silva, José Mousinho

Unidade Local de Saúde da região de Leiria, Leiria, Portugal

Abstract
Fractures of the femoral neck are among the most common fractures in the elderly. Their diagnosis is based on imaging and clinical signs. Treatment is usually based on arthroplasty or hemiarthroplasty depending on the patient's age and functional status.
Bilateral fractures of the femoral neck are a rare entity associated with metabolic diseases, epileptic seizures or high-energy trauma.
We present a case of an 87-year-old female patient who suffered a fall from standing height with pelvic trauma. On physical examination in the emergency department, she presented with bilateral pain in the hip, the right lower limb externally rotated and shortened, and the left without apparent deformities. She did not allow passive mobilization of either limb due to pain.
After performing a pelvic X-ray, a bilateral Garden stage IV fracture was diagnosed. The patient was referred for cemented bilateral hemiarthroplasty performed via anterolateral approach with alternating lateral decubitus, which was successful.
On the second postoperative day, the patient was able to sit in a chair and on the third day, she began walking training with a walker and support from a nurse.
Bilateral fractures are rare cases, and due to low-energy trauma, they are even rarer and few cases are described in the literature. The approach in lateral decubitus or dorsal decubitus is controversial, and there is insufficient data to favor one over the other. On the other hand, there is data that support the simultaneous performance of both sides, reducing the risk of perioperative morbidity and mortality for the patient.

16:19 - 16:20

921 Proximal Fibular Osteotomy In Conjunction With Supramalleolar Osteotomy In Concurrent Management Of Ankle And Knee Osteoarthritis: A Case Series

Ramesh Radhakrishnan[1], Rui Xiang Toh[1], Kizher Shajahan Mohamed Buhary[1], Zongxian Li[1], Kae Sian Tay[1], Nicholas Eng Meng Yeo[2]

1. Singapore General Hospital, Singapore, Singapore
2. Activ Orthopaedic Centre, Singapore, Singapore

Abstract

Background

Ankle and knee osteoarthritis (OA) have significant effects on pain, function, and quality of life. Supramalleolar osteotomy (SMO) is a well-established joint-preserving procedure that corrects malalignment and redistributes joint loads, while proximal fibular osteotomy (PFO) is a newer technique aimed at addressing varus deformities in the knee.

Methods:

This case series examines the outcomes of combining SMO and PFO as a treatment strategy for concurrent ipsilateral ankle and knee OA in two patients.

Results:

Postoperative outcomes showed significant improvements in alignment, pain, and function. American Orthopaedic Foot and Ankle Society scores increased from 40 to 67 in Patient A and from 69 to 94 in Patient B. Visual analogue scale decreased from 5 to 1 and 7 to 2, respectively. RAND 36 results indicated enhanced quality of life, with Patient B even achieving perfect scores in multiple domains. Radiographic analysis showed an increase in tibial anterior surface (TAS) angle from 79.08° to 89.9° and a decrease in tibiotalar angle from 9.89° to 0.32° in Patient A. Patient B's TAS angle improved from 87.83° to 98.03°. Both patients improved from modified Takakura stage III to I and showed lateral shift in hip-knee-ankle axis.

Conclusion

Combining SMO and PFO demonstrates a synergistic effect in managing ipsilateral ankle and knee OA, improving alignment, pain relief, and function. This joint-preserving approach shows promise but requires careful patient selection. Future prospective studies with larger cohorts and long-term follow-up are needed to validate outcomes and refine surgical indications.

16:09 - 16:10

1696 Management Of Vascular Tumors Of The Extremities And Pelvis: Analysis Of 87 Cases

Recep Öztürk[1], Fisun Ardiç Yükrük[2], Emin Kürsat Bulut[3], Mahmut Nedim Aytekin[4]

1. Dr Abdurrahman Yurtaslan Ankara Oncology Training and Research Hospital, Orthopedics and Traumatology, Ankara, Turkey
2. Dr Abdurrahman Yurtaslan Ankara Oncology Training and Research Hospital, Pathology, Ankara, Turkey
3. Nigde Ömer Halisdemir University, Orthopedics and Traumatology, Nigde, Turkey
4. Yüksek ihtisas University, Faculty of Medicine, Orthopedics and Traumatology, Ankara, Turkey

Abstract
Objective: The aim of this study is to analyze the data of patients with vascular lesions and to determine the characteristics specific to these lesions.

Methods: The data of patients treated and followed up for vascular tumors between 2008 and 2020 were analyzed retrospectively. Tumors were classified according to the 2020 "World Health Organization Classification of soft tissue and bone tumors" (blue book).

Results: There were 87 cases, 76 (87%) benign (71 soft tissue tumors, 5 intraosseous hemangiomas) and 11 (14%) malignant (8 soft tissue, 4 bone angiosarcoma). The most common benign tumors were intramuscular vascular malformation/ hemangioma (47%) and cavernous hemangioma/cavernous venous malformation (23%), respectively. The most common presenting complaint was painful or painless swelling. The most common locations of benign tumors were the thigh (18.9%), around the knee (14.8%), and the hand (13.5%). Malignant tumors were most frequently located in the thigh (33%). The mean tumor size in benign and malignant tumors was 4.3cm and 7.6cm, respectively($p<0.05$). The most commonly used methods for benign tumors were total excision/excisional biopsy, sclerotherapy, and follow-up without treatment, respectively.The recurrence/progress rate of benign tumors after treatment/observation was 20% at an average follow-up of 46 months.

Conclusion: Although benign hemangiomas are among the most common soft tissue tumors, differential diagnosis of the lesions from the rare and aggressive angiosarcoma should be made. In each case, treatment should be determined individually, considering the patient's age, lesion characteristics, and histopathological diagnosis. Relatively large tumors located in the thigh should be examined for suspicion of malignancy.

16:26 - 16:27

1837 Code And Cuffs: The Synergy Of AI And Rotator Cuff Surgery

Daniel Ribeiro, Ricardo Reis, Raquel Ricardo, Pedro Batista, José Monteiro, Maria Oliveira, António Jordão, José Rodrigues, Eduardo Salgado

Unidade Local de Saúde Cova da Beira, Covilhã, Portugal

Abstract
Introduction:
Rotator cuff tears (RCTs) are a common cause of shoulder dysfunction and surgical intervention. As precision medicine evolves, artificial intelligence (AI) is emerging as a valuable tool for surgeons, particularly in enhancing diagnostic accuracy, treatment algorithms, surgical planning, and outcome prediction.
Objectives and Study Design:
This review aims to summarize current evidence on the applications of AI in the surgical management of RCTs. A literature search was conducted across major databases focusing on studies involving machine learning (ML), deep learning (DL), and AI in preoperative, intraoperative, and postoperative phases of rotator cuff repair.
Results:
Although in early stages, AI continues to demonstrate as a promissing surgical tool, incluidng in real-time navigation and decision support. Predictive ML models using preoperative data—including patient demographics, tear characteristics, and comorbidities might estimate postoperative functional outcomes, facilitating personalized surgical planning.
Conclusion:
AI is poised to enhance multiple facets of RCT surgical repair, from diagnostics to outcome prediction. While current applications are largely experimental, early results are encouraging. Integration of AI into clinical workflows, supported by larger datasets and prospective validation, may significantly improve patient outcomes and surgical precision in rotator cuff repair.

16:00 - 16:01

1945 In Situ Tibiotalocalcaneal Fusion For Complex Hindfoot Deformity

João Nelas, Alexandra Santos, Filipa Adan, Filipa Cordeiro, Francisco Serra, João Seixas, Luís Costa

Centro Hospitalar Universitário de Santo António, Porto, Portugal

Abstract
A 55-year-old patient with familial amyloid polyneuropathy sustained a Lisfranc fracture-dislocation complicated by osteomyelitis. Initial management included debridement of non-viable bone, application of a calcium sulfate bone void filler, fixation of the Lisfranc joint using Kirschner wires, and antibiotic therapy. Although the infection was successfully treated, the patient developed a progressive hindfoot deformity characterized by plantar flexion of the talus and ankle varus malalignment. Given the complexity of the deformity, surgical intervention focused on coronal plane realignment through varus correction while avoiding sagittal correction due to the fixed plantar-flexed position of the talus. To achieve this, an in situ tibiotalocalcaneal arthrodesis with a nail was performed using an atypical calcaneal entry point. This approach was selected to avoid correction of the Lisfranc joint deformity, given the history of past infection, and to prevent improper dorsiflexion of the foot that could result from a traditional calcaneal entry point in this particular situation. Postoperatively, the patient experienced no recurrence of infection and reported a favorable outcome, with significant pain improvement and no major limitations in daily activities.

16:08 - 16:09

1488 Elective Hub Impact On Orthopaedic Training: A Deanery Perspective

Ifeanyi Kem Onubogu[1,2], Orthopaedic Research Collaborative East Anglia[2]

1. Ipswich Hospital, Ipswich, United Kingdom
2. Orthopaedic Research Collaborative East Anglia (ORCA), Cambridge, United Kingdom

Abstract

Introduction

Nationally, surgical hubs are being developed to ring-fence elective operating, protecting elective capacity from the impact of trauma and emergency service provision. Improvements in patient experience and reduced waiting times have been well-documented, however the impact of hub operating on training has not been fully assessed. Following the establishment of three new surgical hubs in our region in the UK, we explored the impact on training expected from orthopaedic residents.

Methods

A questionnaire was developed to gauge current experience of trainees within the East of England rotation, expectations of hub implementation while surgical logbook statistics were obtained for a 6-month rotation between April 2023 and October 2023.

Results

72% of responders were somewhat satisfied with their experience over the preceding year. 90% had experienced elective cases or lists being cancelled, with the most common reason being increased trauma load. 81% attended extra unscheduled operating lists to aid their surgical exposure, with a third claiming they would not have reached the minimum annual operative numbers without them. 82% believed the hubs would improve their surgical training, however, the increased commute to these hubs was a common concern. Across the 5 sites moving to a surgical hub in late 2024, trainees averaged 148 cases over the 6-month placement, with 58% as first surgeon.

Conclusion

A perceived positive impact on training corroborates the national anticipation for the implementation of elective surgical hubs, despite travel concerns. True impact will be assessed via surgical logbook numbers and a secondary questionnaire a year post-hub introduction.

16:13 - 16:14

2166 Who's Keeping Track? AI In Orthopaedics And The Transatlantic Divide

Aisling Bracken[1], Sean Whelehan[2], Eoin Sheehan[2], Khalid Merghani[3], Iain Feeley[3]

1. Royal College of Surgeons Ireland (RCSI), Dublin, Ireland
2. School of Medicine, University of Limerick, Limerick, Ireland
3. Midlands Regional Hospital Tullamore (MRHT), Tullamore, Ireland

Abstract

Introduction

Artificial intelligence (AI) is transforming healthcare, with machine learning (ML) increasingly integrated into medical devices. In orthopaedics, AI driven devices hold potential to revolutionise practice.

Objectives

Identify and categorise FDA approved medical devices in orthopaedics that utilise ML/AI and to identify devices approved for use in the EU.

Methods

The publicly accessible FDA list of medical devices using AI/ML was reviewed, and devices were screened based on name, panel lead, and 510K summary. Devices targeting orthopaedic surgeons or those relevant to orthopaedic services were included. Device websites confirmed the scope of use. The EUDAMED database and individual device websites were used to verify CE marking and EU availability.

Results

The FDA lists 1,016 AI/ML medical devices, of which 37 are relevant to orthopaedic surgery, produced by 32 companies. These devices were categorised as surgical planning (15), surgical navigation (5), dual function planning and navigation (1), imaging interpretation (13), patient monitoring (1), and MSK ultrasound (2). Devices target various anatomical regions: Spine (10), shoulder (4), hip (6), knee (2), and foot and ankle (2). Of the 37 devices approved in the US, only 12 are CE-marked and available in the EU.

Conclusion

AI and ML are increasingly integrated into orthopaedic devices, enhancing surgical planning, navigation, and imaging. However, a gap exists between FDA-approved devices and those available in the EU. The EU AI Act may improve the accessibility and tracking of these technologies.

Keywords

Artificial intelligence, machine learning, medical devices, FDA, EU AI Act

16:24 - 16:25

2749 The Medium-Term Survival Of Knee Revision Prostheses.

Mohamed Sadok Chtai, Ali Abdennadher Abdennadher, Hamad Ratib, Romdhan Denguezli, Aymen Hannafi

sahloul orthopedic surgery department, Sousse, Tunisia

Abstract
Introduction:
The number of total knee replacements (TKR) is increasing due to advancements in prosthetic implants and population aging. However, prosthesis longevity is limited, leading to a rise in revision knee replacements (R-TKR). This study aims to identify the causes of primary TKR failure and assess R-TKR survival over time.

Methods:
We conducted a retrospective single-center study over 12 years (2010-2022), analyzing R-TKRs performed during this period. Cases without implant changes or with partial replacements were excluded. Clinical and radiological evaluations were performed, and functional outcomes were assessed using the IKS score.

Results:
The study included 43 R-TKRs (12 men, 29 women), with two bilateral cases. The average age was 69.3 years [58-83 years]. Failure causes were aseptic in 27 cases and septic in 16. Favorable outcomes were observed in 33 cases. The mean follow-up was 4 years 8 months [2-15 years]. Prosthesis survival was 77% overall—85.2% for aseptic revisions and 62.5% for septic ones. Ten revisions required further replacement (6 septic, 4 aseptic). Two septic re-revisions led to implant removal and knee arthrodesis.

Conclusion:
Knee revision surgery is complex and requires careful planning. Outcomes are generally worse than primary TKRs, with rare but severe complications potentially leading to repeated revisions, arthrodesis, or even transfemoral amputations.

Conflict of Interest: None declared.

16:01 - 16:02

2917 Restoration And Mild Deviations Of CPAK Improves Early Functional Outcomes In Robotic Kinematic Alignment Total Knee Arthroplasty

Yong Ng[1], Jeremy Tze En Lim[2], Audrey Xinyun Han[2], Eric Xuan Liu[2], Seng Jin Yeo[2], Darren Keng Jin Tay[2], Hee Nee Pang[2], Ren Yi Kow[3], Ming Han Lincoln Liow[2]

1. Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore
2. Department of Orthopaedic Surgery, Singapore General Hospital, Singapore, Singapore
3. International Islamic University Malaysia, Kuala Lumpur, Malaysia

Abstract

Background

Kinematic alignment (KA) in total knee arthroplasty (TKA) aims to restore a patient's native anatomy. The Coronal Plane Alignment of the Knee (CPAK) classification enables standardised assessment of coronal alignment, but the impact of CPAK changes in robotic KA-TKA remains unclear.

Objective

To evaluate how CPAK change influences early postoperative outcomes following image-less, table-mounted robotic KA-TKA.

Methods

We retrospectively analysed 127 robotic KA-TKAs. Postoperative CPAK was categorised into: (1) CPAK restoration (phenotype unchanged); (2) minor deviation (horizontal row shift due to arithmetic hip-knee-ankle [HKA] change within ±4° without joint line obliquity [JLO] change); and (3) JLO-driven CPAK change (vertical column shift with >3° deviation from the 180° JLO axis). One case (0.79%) with non-favourable CPAK change was excluded. Early outcomes included postoperative day 1 range of motion (ROM), pain at rest and with movement, and ambulation distance.

Results

CPAK restoration (52.8%) was associated with significantly better postoperative day 1 ROM (73.5° vs 63.7°, p=0.026) and pain at rest scores (0.73 vs 1.30, p=0.033) compared to those with JLO-driven changes (22.8%). Patients with minor deviations (23.6%) also had better pain scores at rest (0.73 vs 1.56, p=0.0058) than those with JLO-driven changes.

Conclusion

Restoration or mild deviations in CPAK following robotic KA TKA led to superior early function. Further research should identify which preoperative deformities can achieve CPAK and JLO restoration with KA TKA and if these early outcomes persisted at longer-term follow-up.

Keywords: Kinematic Alignment, CPAK, Robotic

16:15 - 16:16

2996 Focal Shockwave Therapy: A Clinical Case Showcasing The Importance Of A Multidisciplinary Approach To Complex Issues

Simão Pinho, Rafaela Evangelista, Tiago Félix, Frederico Paiva, David Pereira

ULS Viseu Dão Lafões, Viseu, Portugal

Abstract

Introduction
Long bone pseudarthrosis can affect up to 10% of all patients after a fracture. It places a significant burden on the patient, health systems and society at large.
A promising treatment in selected cases is Extracorporeal Shockwave Therapy (ESWT). It works by potentiating the local production of osteogenic factors and neovascularization.

Clinical case
A 71-year-old male was in a motorcycle accident and suffered a fracture of the right tibial diaphysis (AO 42A3). He was submitted to intramedullary tibial nailing and discharged after 5 days.
At 1-month follow-up, there was evidence of bone callus formation and the patient was progressing well.
However, at 6-month follow-up, his radiography was suggestive of hypertrophic pseudarthrosis. He started a rehabilitation program.
At both 9 and 14-month follow-up, his condition was identical. After infection and mechanical instability were excluded, he was selected for ESWT.

Results
The patient was submitted to 3 sessions of focal ESWT in an outpatient regimen, separated by a 1-week interval.
ESWT was directed to the cortical bone adjacent to the bone defect, using ultrasonography, and following pre-determined parameters: 3-4Hz, 1500-3000 pulses; 0.35-0.55 mJ/mm2.
At 6-month follow-up, there was radiographic evidence of fracture consolidation.
At 9-month follow-up, the patient had no pain and was able to walk unassisted.

Discussion
ESWT is a valuable tool in treating pseudarthrosis and can help avoid new surgical interventions. Its promotion and divulgation is important to expand its utilization, and future research should help establish what protocols are more adequate.

16:21 - 16:22

1114 Ilizarov Technique In Arthrogryposis Multiplex Congenita (AMC).

Mofakhkharul Bari

Bari-Ilizarov Orthopaedic Centre, Dhaka, Bangladesh

Abstract
Introduction: Arthrogryposis multiplex congenita (AMC) is a rare condition characterized by congenital, non-progressive joint contractures, often presenting in over 400 clinical settings. Its etiology is multifactorial, with approximately 200 syndromes having components genetically similar to AMC. The condition affects 1 in 5,100 live births, with associated anomalies such as clubfoot and hip dislocations occurring in 1 in 200 live births. Early intervention, typically within the first 24 hours, involving manipulation, splinting, orthosis use, and gait analysis, is essential for optimal management.

Keywords: Arthrogryposis multiplex congenita, Ilizarov technique, Joint contractures, Early intervention, Orthosis, Gait analysis

Materials & Methods: From 1995 to 2023, 65 patients with AMC were reviewed. No loss of function beyond adolescence was reported. A multidisciplinary team, equipped with up-to-date skills and knowledge, was involved in the comprehensive care of these patients, ensuring the best possible outcomes.

Results: The use of the Ilizarov technique in AMC patients demonstrated significant positive outcomes in managing joint contractures and deformities.

Conclusion: The Ilizarov technique is a crucial tool in the management of AMC, contributing to improved functional outcomes when applied as part of a comprehensive treatment approach.

16:02 - 16:03

2393 Trapeziometacarpal Joint Biomechanics: Can Screw-Home Torque Predict Ligament Health?

Mirka Normand[1], **Mariam Abdelazim Ibrahim**[2], Jean-Michel Brismée[3], Mohamed Morsy[4], Bassant Abdelhameed[2], Stéphane Sobczak[1]

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2. Rehabilitation Unit | Orthopedic and Trauma Surgery Department | Assiut University Trauma Hospital, Assiut, Egypt
3. Center for Rehabilitation Research, School of Health Professions, Texas Tech University Health Sciences Center, Lubbock, United States
4. Orthopedic and Trauma Surgery Department | Assiut University Trauma Hospital, Assiut, Egypt

Abstract
Abstract
Study Design: A cross-sectional, laboratory-based study.

Background: Currently, no clinical test specifically assesses the stability potential of key ligamentous structures supporting the trapeziometacarpal (TMC) joint in individuals with osteoarthritis (OA).

Objective: This study aimed to evaluate the effectiveness of the TMC joint screw-home torque mechanism (SHTM) in estimating the integrity of the posterior ligament complex in an OA population.

Methods: Twenty cadaveric hands with varying degrees of TMC joint OA, from none to severe, were radiographically examined in multiple positions to assess degeneration, joint mobility, and dorsal subluxation at rest and under SHTM application. The relationship between OA severity, joint mobility, subluxation reduction, and ligament integrity—confirmed via dissection—was analyzed through correlation and comparative assessments.

Results: While no significant correlation was found between the subluxation reduction ratio of the SHTM and the overall ligament complex integrity, a moderate negative correlation was observed between dorsal central ligament injury and SHTM at both 21Nm ($r = -0.459$, $p < 0.05$) and 34Nm ($r = -0.452$, $p < 0.05$). Additionally, SHTM significantly reduced radial subluxation of the TMC joint at 21Nm ($t = 3.178$, $p < 0.05$) and 34Nm ($t = 2.629$, $p < 0.05$).

Conclusion: The findings do not support the use of SHTM as a reliable indicator of posterior ligament complex integrity in the TMC joint. However, it demonstrated complete stabilization in non-arthritic TMC joints.

16:14 - 16:15

977 Efficacy Of Platelet-Rich Plasma In Managing Osteoarthritis Of The Knee: A Retrospective Study.

Bishnu Prasad Patro

AIIMS Bhubaneswar, Bhubaneswar, India

Abstract
Background: Osteoarthritis (OA) is a leading cause of chronic disability, predominantly affecting the knee joint. With the limitations of conventional therapies in addressing the underlying pathology, novel regenerative approaches like Platelet-Rich Plasma (PRP) are gaining prominence.
Objective: To assess the efficacy of PRP in managing Grade I–III OA knees, focusing on pain relief, functional improvement, and patient satisfaction.
Methods: A retrospective review of 2,500 PRP injections was conducted on patients with Grade I–III OA knees over three years. PRP was prepared under strict laboratory protocols and administered in three doses at 7–14-day intervals. Efficacy was assessed using the Visual Analog Scale (VAS) for pain, Oxford Knee Score (OKS) for functionality, and patient satisfaction parameters.
Results: Significant pain reduction (40–100% improvement) was noted, with two patients achieving complete pain relief. Functional outcomes improved markedly, with OKS transitioning from poor/moderate to good/excellent in all cases. Minimal adverse events were observed, limited to transient knee effusion in two patients. All participants completed the regimen, expressing high satisfaction and willingness to recommend the therapy.
Conclusion: PRP therapy is an effective and safe intervention for Grade I–III OA knees. Its regenerative potential offers superior outcomes over conventional therapies, highlighting its promise as a cornerstone treatment. Further large-scale, randomized studies are warranted to establish standardized protocols and broader applicability.

16:06 - 16:07

606 Optimizing Treatment Strategies For Femoral Neck Fractures Using A Machine Learning Model

Takashi Okamoto[1], Hiroyuki Takeuchi[1], Hisami Hatanaka[1], Yuki Shibata[1], Shigeru Nakagawa[1], Masatsugu Takami[1], Yoshiharu Kusabiraki[2], Noriaki Hidaka[1]

1. Hanwa Memorial Hospital, Osaka, Japan
2. Kashiba Seiki Hospital, Kashiba, Japan

Abstract

【Introduction】With the rapid development of machine learning, its application in medical imaging has become increasingly feasible. Deep learning has improved diagnostic accuracy and enabled faster decision-making in clinical practice.However, no previous studies have reported a machine-learning model for selecting surgical procedures in femoral neck fractures. This study aims to create a deep learning model that selects the optimal surgical procedure, such as internal fixation or hemiarthroplasty based on preoperative X-rays. 【Methods】We analyzed 283 preoperative X-rays from 242 femoral neck fracture cases treated at two facilities between April 2020 and January 2025. A total of 275 hip joints were included(121 osteosynthesis, 154 hemiarthroplasty). Images were manually cropped and augmented using torchvision.transforms. The model was based on EfficientNetV2-S and trained using a mini-batch learning approach (100 epochs, learning rate of 0.0001).Accuracy was evaluated on training, validation, and test datasets.

【Results】The agreement rate between the model and orthopedic specialists in treatment selection was 98% for the training data, 95% for the validation data, and 86% for the test data.【Discussion】The low agreement rate in the test data is likely due to overfitting or an insufficient amount of data. A larger dataset may contribute to improving the model's generalization performance.Since there is no single optimal solution for selecting a surgical procedure, it may be more useful to find approaches to express recommendation levels in rating scores.【Conclusion】Our model demonstrated promising results in surgical decision-making for femoral neck fractures. With further improvement, it has the potential for clinical application.

16:03 - 16:04

2279 Advancing Orthopedic Training: The Impact Of 3D-Printed Models On Mastering Ultrasound-Guided Interventions

Tomas Novotny

Department of Orthopaedics, University J.E. Purkyne, Masaryk Hospital, Usti nad Labem, Czech Republic, Usti Nad Labem, Czech Republic

Abstract
Keywords: Sonography, Guided interventions, 3D print, Education

Introduction: Integrating ultrasound (US) guidance with treatments utilizing hyaluronic acid or platelet-rich plasma significantly enhances the conservative management of musculoskeletal (MSK) disorders. This advanced approach boosts the precision of diagnostic and therapeutic joint procedures. Although commonly associated with interventional radiology, these techniques are increasingly beneficial within orthopaedic surgery practices. This study aims to share our experience developing an educational system tailored to improve proficiency in US-guided procedures, highlighting the incorporation of 3D-printed models as effective training tools for orthopaedic professionals.

Methods: We designed simulation courses using 3D-printed models and cadavers to teach MSK US-guided interventions to orthopaedic surgeons. We assessed the efficacy of these educational methods and compiled a catalogue of pathologies conveniently approachable with US guidance.

Results: Participation in specialized MSK US courses enabled orthopaedic surgeons to perform independently from interventional radiologists. This educational initiative expanded their therapeutic options, allowing intervention in difficult-to-access joints, such as the hip or smaller joints of the hand and foot. US guidance enhanced the targeted treatment of soft tissue conditions, like rotator cuff, Achilles tendon, or common extensor tendinopathies. Advanced techniques yielded satisfactory outcomes, including soft tissue needling and the barbotage of rotator cuff calcifications. In many cases, 3D-printed models effectively replaced relatively expensive cadavers without compromising learning quality.

Conclusion: US-guided interventions present safe and effective conservative treatment options for orthopaedic surgeons. Certain interventions can be substituted during the training process with 3D-printed models, achieving comparable educational.

16:18 - 16:19

827 MASSIVE ACETABULAR DEFECT, DO NEW TECHNOLOGIES FACILITATE SURGERY?

GIOVANNI Erasmo Provenza, BEATRIZ Martin Vélez, CLAUDIA Santafé Campos, JORGE Martin Lozoya, DAVID Guzmán Domenech, MIGUEL Cañones Martin, FERNANDO Oñorbe San Francisco, JAVIER Montoya Adarraga, RICARDO Larrainzar Garijo, OLIVER Marín-Peña

Hospital Universitario Infanta Leonor, Madrid, Spain

Abstract
Massive acetabular defects in total hip revision (THR) require bone grafts or metal augments. Advances in technology enable better planning and custom-made implants. This study evaluates the role of new technologies in designing custom acetabular cups for a case of severe acetabular bone loss.

A 71-year-old patient with significant functional limitations, including wheelchair dependence and a 3 cm limb shortening, was diagnosed with massive acetabular osteolysis through radiology and CT scans. Infectious parameters and metal ion levels were normal. Using the hospital's Surgical Planning Unit (SPU), the defect was measured at 220 cm^3. A 3D-printed plastic model was developed, and a custom monoblock acetabular component was designed and validated by engineers. Pre- and postoperative clinical evaluations were performed using iHOT33 and HOS scores.

Three months after planning, the patient underwent THR using a custom acetabulum with peripheral screws, a central pin, and a supracetabular wing, following 3D planning. No early complications occurred, and the patient ambulated with two crutches within 12 hours. At four months, the patient had painless ambulation with one crutch, and radiographic evaluation confirmed implant stability. Clinical outcomes improved significantly, with iHOT33 increasing by 45.1 points and HOS by 36.1 points, surpassing the substantial clinical benefit threshold.

The use of new technologies in SPUs for massive acetabular defects enhances surgical safety, accelerates recovery, and achieves excellent clinical outcomes at four months postoperatively.

Thursday, 4 September

JAM 8
16:09 - 16:10

121 Evaluating The Accuracy And Comprehensiveness Of ChatGPT In Answering The Most Common Patient Questions About Rotator Cuff Repair Surgery

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Abstract
Introduction: The rise of artificial intelligence (AI) in healthcare offers innovative ways to enhance patient education. ChatGPT, developed by OpenAI, is a leading AI-driven chatbot designed to provide medical information in a conversational manner. This study evaluates the accuracy and comprehensiveness of ChatGPT's responses to common patient questions about rotator cuff repair surgery.
Methods: Twenty frequently asked questions regarding rotator cuff repair surgery were identified from medical literature and patient resources. These questions were posed to ChatGPT, and the responses were evaluated using a predefined rating system based on evidence based evaluation.
Results: ChatGPT responses were generally accurate, with 65% of the responses rated as "Excellent," indicating comprehensive, accurate, and well-supported answers. Additionally, 30% of the responses were rated as "Satisfactory requiring minimal clarification," indicating accurate responses with minor details lacking. 5% of responses rated as "Satisfactory requiring moderate clarification". Overall, 95% of the responses fell into the "Excellent" or "Satisfactory requiring minimal clarification" categories, demonstrating a high level of accuracy and comprehensiveness in addressing common patient questions.
Conclusion: ChatGPT effectively provided evidence-based responses to common patient questions about rotator cuff repair surgery. The chatbot's responses were generally accurate and patient-friendly, demonstrating its utility in the preoperative educational process. However, it is crucial for patients to consult their healthcare providers for personalized medical advice and to address any specific concerns not fully covered by AI responses. As AI technology evolves, it holds promise for enhancing patient engagement and informed decision-making in healthcare.
Keywords: Artificial Intelligence, ChatGPT, Patient Education, Rotator Cuff Surgery

16:02 - 16:03

630 The Burden Of Fracture-Related Infections In Africa: A Scoping Review

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Abstract
Background: Fracture-related infections (FRIs) present significant challenges in trauma and orthopaedics, particularly in Africa, where their prevalence is unclear. Open fractures markedly increase FRI risk, with rates up to 30%, reaching 100% in patients with comorbidities like HIV/AIDS. Despite their impact on quality of life and healthcare costs, FRIs in Africa are under-researched, necessitating a comprehensive review.

Objective: This scoping review examines literature on the aetiology, diagnostic criteria, treatment protocols, outcomes, and prevention of FRIs in Africa, and identifies systemic barriers to effective management.

Methods: A systematic search in Medline, Embase, Cochrane Library, Web of Science, Orthopaedic Trauma Association, and Google Scholar covered literature from January 2013 to March 2024. Studies conducted in Africa, published in English, and reporting on FRI prevalence, aetiology, management, or prevention were included. Following PRISMA-ScR guidelines, 409 articles were screened, 41 met the inclusion criteria.

Results: FRIs were secondary outcomes in 73% of studies, with prevalence rates ranging from 1.6% to 86.5%. Staphylococcus aureus, including MRSA, was the predominant pathogen. Treatment involving debridement, antibiotics, and implant management resolved infections in up to 100% of cases, but 4-60% required further surgeries, and up to 72.7% developed non-union. Systemic barriers included resource limitations, restricted hospital access, financial constraints, and use of traditional remedies.

Conclusion: Despite increasing FRI research in Africa, significant gaps remain in prevention and management due to limited resources and lack of region-specific guidelines. Addressing systemic barriers and developing evidence-based, region-specific treatment guidelines are crucial for improving outcomes and reducing FRI burden in Africa.

16:12 - 16:13

675 Agreement Between ChatGPT And Orthopedic Surgeons In The Classification Of Posterior Malleolar Fractures According To Mason-Molloy

Ali Yüce[1], Nazim Erkurt[1], Mustafa Yerli[1], Tahsin Olgun Bayraktar[1], **Mehmet Selçuk Saygili**[1], Abdulhamit Misir[2], Metin Uzun[3], Ihsan Ahmet Güneren[1], Kamil Berkay Akdere[1]

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Abstract

Introduction

ChatGPT, as an artificial intelligence-based language model, has been explored for various applications in orthopedics, including patient education, exam performance, article writing, and educational text generation. Additionally, image processing capabilities have been integrated into ChatGPT; however, no studies have yet investigated its applicability in orthopedics with this feature. This study aimed to evaluate the performance of ChatGPT in classifying posterior malleolar fractures according to the Mason-Molloy classification.

Methods

The patient records of individuals who underwent surgery for ankle fractures between 2022 and 2024 were retrospectively reviewed. A total of 102 patients with posterior malleolar fractures were included in the study. The recorded images were classified according to the Mason-Molloy system by two senior orthopedic surgeons and ChatGPT. The interobserver agreement among the evaluators was analyzed based on the collected data.

Results

The agreement between Observer #1 and Observer #2 was substantial (κ:0.784). However, ChatGPT showed poor agreement with Observer #1 (κ:0.136) and fair agreement with Observer #2 (κ:0.285). ChatGPT classified 40.2% of the images as Type 2A and another 40.2% as Type 3. Only 2 images (1.9%) were classified as Type 1.

Conclusion

The interobserver agreement for ChatGPT in classifying posterior malleolar fractures from axial CT images according to the Mason-Molloy classification was found to be poor to fair. Furthermore, ChatGPT classified 80.4% of the images as either Type 2A or Type 3, while only 1.9% were classified as Type 1. These findings suggest that ChatGPT's ability to classify posterior malleolar fractures according to the Mason-Molloy system is limited.

16:00 - 16:01

740 Giant Synovial Cyst In The Flexor Tendon Sheath Of The Hand: A Rare Case Report And Surgical Approach, Pitfalls And Management

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Abstract
Synovial cysts are fluid-filled sacs that develop due to trauma or degeneration of the synovial lining. They are most common in the flexor tendon sheath of the hand and present as small, soft lumps over the palmar aspect. They are typically benign and may be asymptomatic; therefore, watchful waiting is the recommended treatment. Pain, functional deficit, and restriction of movement may occur in cases of large cysts.
The pathogenesis of synovial cysts is not clearly established, but it occurs more frequently in middle-aged women and patients with rheumatological diseases. Some other risk factors include repetitive use of the hand, degenerative joint disease, antecedent trauma, and inflammatory arthropathy such as rheumatoid arthritis.
We describe the case of a 64-year-old female patient with a giant synovial cyst in her hand's flexor sheath that was causing pain, limited range of motion, and functional loss. The cyst was present for many years but enlarged dramatically in the previous 6 months before seeking medical opinion and became painful.
The patient was conservatively treated with splinting and aspiration but this treatment failed and had excisional surgery performed. Intraoperative dissection was done carefully not to injure the adjacent structures.
Post-operatively, the patient recovered completely without recurrence at six months. This case highlights the importance of early diagnosis and treatment of symptomatic synovial cysts. The identification of risk factors and the decision of treatment are of primary concern for a successful recovery and prevention of recurrence, as we show in this case report, thoroughly documented with photographic evidence.

16:18 - 16:19

347 Mid-Term Effectiveness Of Hip Preservation In The Reconstruction Of Ultrashort Bone Segments In The Proximal Femur With Three-Dimensional Printed Customized Cementless Intercalary Endoprosthesis With An Intra-Neck Curved Stem

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Abstract
Objective To explore the design points of a customized cementless intercalary endoprosthesis with an intra-neck curved stem and to evaluate the key points and mid-term effectiveness of its application in the
reconstruction of ultrashort bone segments in the proximal femur. Results All 17 patients were followed up 25-86 months with an average of 58.1 months. During the follow-up, 1 patient died of lung metastasis at 46 months postoperatively, and the remaining 16 patients survived tumor-free. There was no complication such as periprosthetic infection, delayed incision healing, aseptic loosening, prosthesis fracture, or periprosthetic fracture. No evidence of micromotion or wear around the implanted stem of the prosthesis was detected in X-ray and T-SMART evaluations. The patient's femoral resection length was (163.1±57.5) mm, the remaining proximal femoral length was (69.6±9.3) mm, and the percentage of femoral resection length/total femoral length was 38.7%±14.6%.At last follow-up, the MSTS score was 26.1±1.2 and the VAS score was 0.1±0.5, which were significantly improved compared with those before operation [19.4±2.1 and 5.7±1.0, respectively] ($t=14.735$, $P<0.001$; $t=21.301$, $P<0.001$). At last follow-up, none of the patients walked with the aid of crutches or other walkers. Conclusion The customized cementless intercalary endoprosthesis with an intra-neck curved stem is an effective method for reconstructing ultrashort bone segments in the proximal femur following malignant tumor resection. The operation is reliable, the postoperative lower limb function is satisfactory, and the incidence of complications is low.

16:24 - 16:25

838 Acetabular Revision For Prosthetic Failure With Massive Metallosis: A Case Report

Mario Rui Silva, António Gonçalo Silva, João Nelas, Pedro Santos Leite, Daniel Esteves Soares

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Abstract
Background: Acetabular component failure is a severe complication of total hip arthroplasty (THA), particularly in cases with massive metallosis. We present a case of a 54-year-old female with prior bilateral THA due to hip dysplasia, who developed right hip pain secondary to acetabular component failure with metallosis and intrapelvic extension.
Case Presentation: The patient had undergone hybrid THA with a cemented femoral stem and a dual mobility ceramic-on-ceramic articulation more than 20 years prior. Over the past year, she experienced progressive right hip pain with mechanical characteristics, restricted range of motion, and associated groin discomfort. Radiographs showed acetabular component verticalization and malposition of the femoral head, while CT revealed an intrapelvic gas-containing mass extending from the hip joint. Intraoperatively, there was complete destruction of the dual mobility head, ceramic fracture, superior acetabular wear, and extensive metallosis with femoral neck erosion. After component removal, a large central acetabular defect with intrapelvic communication containing metallosis particles was identified. Following debridement and lavage, the defect was reconstructed using a cadaveric allograft, and a new uncemented acetabular component was implanted with three screws. A metal/polyethylene dual mobility head was used, while the well-fixed femoral stem was retained. Intraoperative cultures were sterile.
Conclusion: This case highlights the challenges of managing acetabular failure with extensive metallosis. Careful defect reconstruction and implant selection allowed for successful revision surgery, with the patient achieving pain-free ambulation at five weeks postoperatively.

Keywords: Acetabular revision, prosthetic failure, metallosis, total hip arthroplasty (THA), hip dysplasia, acetabular defect, intrapelvic mass

16:15 - 16:16

932 Innovative Fixation Plate For Osteosynthesis Of The Acromial End Of The Clavicle: Clinical Case And Perspectives

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2. NSCTO, Astana, Kazakhstan

Abstract
Background: Fractures of the acromial end of the clavicle are relatively rare and present significant treatment challenges due to their anatomical complexity and high instability. Standard fixation plates often do not conform to the natural curvature of the clavicle, requiring intraoperative bending, which can compromise structural integrity and lead to complications such as implant failure and metal erosion. This case report introduces a newly designed anatomical fixation plate aimed at improving stability and reducing postoperative complications.

Case Presentation: We present the case of a 39-year-old Kazakh male who sustained a Neer type IIb acromial-end clavicle fracture following a direct shoulder impact. The patient underwent open reduction and internal fixation with a newly designed anatomical plate featuring optimized hole orientation for enhanced fixation stability. Postoperative radiographic assessments confirmed proper fracture alignment and stable osteosynthesis. The patient's rehabilitation was uneventful, with early functional recovery. At the two-month follow-up, radiographs demonstrated progressive bone healing, and the patient achieved full, pain-free shoulder mobility with excellent functional scores on the Constant Shoulder Score and ASES questionnaire.

Conclusions: This case highlights the advantages of using a newly developed anatomical fixation plate for acromial-end clavicle fractures. The innovative design improves fixation stability and reduces common complications associated with conventional plates. These findings suggest that the proposed plate may be a promising alternative for the surgical management of complex clavicle fractures. However, further studies with larger patient cohorts and long-term follow-up are needed to validate its clinical efficacy.

16:20 - 16:21

1182 The Influence Of Preoperative Handgrip Strength On Recovery After Transforaminal Lumbar Interbody Fusion

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2. Department of Orthopaedics, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

Abstract

Background
The increasing prevalence of lumbar spinal disorders necessitating surgery highlights the need for predictive preoperative assessments. Handgrip strength (HGS) is a recognized indicator of muscle function and overall health, yet its role in transforaminal lumbar interbody fusion (TLIF) outcomes remains unclear. This study evaluates the association between preoperative HGS and post-surgical recovery.

Methods
This prospective study included 89 patients who underwent TLIF. Preoperative HGS was measured, and patients were categorized into normal and low HGS groups. Functional recovery was assessed using JOA, EQ-5D-3L, and Barthel Index scores at 3, 6, and 12 months postoperatively. A generalized estimating equation (GEE) model analyzed associations between baseline HGS and outcomes.

Results
Patients with lower preoperative HGS exhibited significantly poorer postoperative outcomes. A one-unit decrease in HGS was associated with a 2.551-point drop in JOA ($p = 0.008$), a 0.142-point decrease in EQ-5D-3L ($p = 0.007$), and a 5.784-point decline in Barthel Index ($p = 0.036$). Male sex, higher BMI, and lower Charlson Comorbidity Index were linked to improved outcomes.

Conclusions
Low preoperative HGS is associated with worse functional and quality-of-life outcomes following TLIF. Assessing HGS preoperatively may help identify patients at risk of suboptimal recovery, enabling targeted interventions to improve surgical outcomes.

Keywords: Handgrip strength, transforaminal lumbar interbody fusion, JOA, EQ-5D-3L, Barthel Index, spine surgery.

16:14 - 16:15

1240 The Impact Of Knee Alignment On Tibial Cartilage Stress And Kinematics Following Paediatric Anterior Cruciate Ligament (ACL) Reconstruction: A Finite Element (FE) Analysis

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3. Cairns Hospital, Cairns, Australia
4. Griffith University - Australian Centre for Precision Health and Technology, Gold Coast, Australia

Abstract

Introduction:
Lower limb valgus alignment has been observed in paediatric patients with ACL rupture and may influence tibial cartilage stress and kinematics, contributing to early joint degeneration.

Aims & Objectives:
This study aimed to evaluate the impact of knee alignment on tibial cartilage stress distribution and knee kinematics during gait in paediatric patients following ACL reconstruction (ACLR).

Study Design:
Linked neuromusculoskeletal (NMSK)-finite element (FE) case series

Methods:
Patient-specific models were generated eight-months following ACLR, using magnetic resonance imaging and 3D motion capture data. Hip-knee-ankle angle (HKAA) from long-leg radiographs determined alignment. A linked NMSK-FE model simulated tibial cartilage stress and kinematics during gait.

Results:
Three patients (mean age 15.76±0.81 years, BMI 24.62±3.80 kg/m², 2 female/1 male) were analysed. Each patient had distinct alignment phenotypes: varus (HKAA -1.25°), slight valgus (HKAA 2.52°), and significant valgus (HKAA 4.59°). The varus-aligned patient demonstrated increased medial stress (15 mPA), internal rotation, minimal mediolateral translation, and reduced adduction by late stance. Valgus alignment demonstrated increased lateral stress (12 mPA), external rotation, abduction, and lateral translation of up to 3 mm. The greatest deviations in cartilage stress were observed in valgus knees, particularly in the lateral compartment.

Conclusion:
Coronal plane alignment affected both cartilage stress and kinematics during gait. Varus alignment was associated with medial compartment loading and internal rotation, whereas valgus alignment resulted in lateral compartment loading, external rotation, and increased abduction. Alignment remains an important consideration in ACL injury, as it impacts both loading patterns and movement mechanics, potentially influencing outcomes such as meniscal pathology, graft failure or joint degeneration.

16:06 - 16:07

1286 Fungating Synovial Sarcoma At The Posterior Aspect Of Neck: A Case Report

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Abstract
Case presentation
A total of 5 months before the examination, a Pakistani-Asian male, age 20 years, complained of a malodorous fungating swelling on the posterior aspect of his neck. An examination revealed a foul-smelling, 10 × 13 cm fungating enlargement surrounded by maggots and hemorrhaging at the site of the incision. A hemoglobin level of 6 and a total leukocyte count (TLC) of 23,000 indicated the patient's disoriented and pallid appearance. He was expeditiously admitted, and preoperatively, the general well-being of the patient was optimized. After a comprehensive discussion with the medical team, a strategy for marginal excision and coverage with a latissimus dorsi (LD) flap and grafting was devised. The tumor was successfully excised, and an LD flap with graft was conducted on the patient during surgery; however, the infection caused the failure of half of the graft. Background
In this report, we describe an uncommon instance of fungating synovial sarcoma affecting the posterior aspect of the neck. Although the existing literature has documented a limited number of cases, this particular case contributes to the knowledge about it, which is scarce.

16:13 - 16:14

1352 Minimally Invasive Osteosynthesis Of Intraarticular Calcaneus Fracture: Risk Or Benefit For Our Patients?

Anatoly Mursalov

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Abstract
Introduction: The aim of this study is to analyze the effectiveness of minimally invasive surgical treatment for calcaneal fractures using screw-only osteosynthesis, as well as to evaluate the impact of surgical timing on clinical outcomes.

Methods: Between 2020 and 2024, 22 patients with calcaneal fractures were included in the study. According to the Sanders classification, the distribution of fractures was as follows: 36.4% — Sanders 2, 45.5% — Sanders 3, and 18.1% — Sanders 4. All patients underwent surgery within 1 to 10 days after the injury. Surgical interventions were performed following a standardized protocol, which included fracture analysis, proper patient positioning, and the use of radiographic techniques. The procedures were carried out using a percutaneous approach with minimal incisions, and fracture fixation was primarily achieved with screws.

Results: The mean Böhler's angle improved from 4.3° preoperatively to 25° postoperatively. No postoperative complications were observed in this patient group. All 22 patients were followed up for an average of 2 years and 3 months. The mean AOFAS score was 91, and the mean FAOS score was 89. The timing of surgery (within 10 days after the injury) did not have a significant impact on clinical outcomes.

Conclusion: Minimally invasive screw-only osteosynthesis with early surgical intervention demonstrates high effectiveness and a low risk of complications.

16:27 - 16:28

2611 Outcome Of Pelvic Support Osteotomy With Ilizarov In Unstable Hips In Adolescents And Younger Age Group.

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Abstract
Background:
In patients of different age groups, hip joint can be damaged by multiple causes like septic hip sequale, neglected developmental dysplasia of hip, neglected femoral neck fracture and tuberculosis.

Material and Methods:

96 patients with unstable hip due to multiple causes were treated with pelvic support osteotomy with Ilizarov at khyber teaching hospital peshawar from January 2019 till June 2023.

Study group 43 were female and 53 were male,and age range were 12 to 43 years. Average limb length inequality was 4.8cm(3-7.5cm). Preoperative and postoperative range of HIP motion and Harris hip score was collected and data analysed by Student's paired t test. A p value of <0.05 was taken to be statistically significant.
Results:
In all patient Harris hip score were improved at last follow up. Pre-op Mean Harris hip score was 51.35(range 30-75), which was improved to 85.40(range 71-85) in all patient at final follow up which was statistically significant (p value<0.05). Average achieved length was 4.4(range 3-7cms). The means ilizarov fixation time was 7.4 months.
The complications were mostly knee stiffness, pin track infection, hip stiffness due to ankylosis , femoral bone Deformity and residual LLD.

Conclusion:

"Pelvic support osteotomy with ilizarov" is the best salvage surgical procedure in adolescents and adult labrours & house wives with low socioecnomic status with gud functional outcome for unstable hip due to various etiologies where other procedure are inappropriate.

16:07 - 16:08

2678 The Population Perception Of Total Knee Arthroplasty In A Middle-Income Country

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2. Monastir University, Monastir, Tunisia

Abstract

Introduction
The decision-making process for patients being considered for knee arthroplasty is determined by their perception of the surgery. This perception may also influence the functional outcome.
Objective
To describe the perception of knee arthroplasty among the population of a middle income country.
Methods
Adults present in the waiting rooms of outpatient consultations were invited to complete a questionnaire about their general knowledge of knee arthroplasty. An online version was also published on social media. Responses from healthcare professionals and individuals with knee prostheses were excluded.
Results
A total of 188 responses were included. The source of information regarding arthroplasty was "family, friends, and neighbors" for 46% of respondents. Only 15% knew that it is possible to resume walking as early as the first postoperative day, while 41% believed walking was only possible after at least 3 weeks. 24.5% thought arthroplasty provided good functional results. Only 32% of respondents thought it was possible for a knee prosthesis user to use stairs, and only 54% believed they could perform household tasks.
Conclusion
Our results show apprehension regarding knee arthroplasty, in contrast to the widely reported good functional outcomes of this surgery. Communication with candidates for knee arthroplasty should be improved to adress these misjudgings.

16:19 - 16:20

2347 Investigation Of Cup Placement Accuracy And Lower Leg Length Before And After The Introduction Of CT-Based Robotics

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Abstract

Purpose

Leg length discrepancy (LLD) is a key factor in patient dissatisfaction following total hip arthroplasty (THA). CT-based robotic assistance allows precise LLD measurement in 1 mm increments, enabling pre-implantation assessment of leg length and hip stability to minimize LLD. This study compared postoperative LLD in manual THA performed before (Group A) and after (Group B) robotics introduction by the same surgeon, assessing its impact on leg length adjustment.

Methods

Patients who underwent unilateral THA, with a normal contralateral hip or a previously operated THA, were included. Group A had 6 males and 20 females (mean age: 65.4 ± 7.94 years), while Group B had 5 males and 17 females (mean age: 67.6 ± 9.2 years). Postoperative LLD was measured on X-ray, and cup placement accuracy was evaluated using Zed Hip. Patients with lumbar scoliosis (Cobb angle >15°) were excluded. Intraoperative X-ray was used in both groups for LLD measurement and adjustment.

Results

There was no significant difference in cup positioning ($p = 0.687$), but postoperative LLD was significantly lower in Group B (4.42 ± 3.41 mm vs. 2.21 ± 1.61 mm, $p = 0.011$). Defining an LLD outlier as ±5 mm, 10 of 26 cases in Group A deviated, while none in Group B did ($p = 0.001$).

Discussion

CT-based robotics improved LLD adjustment, enhancing surgeons' awareness even in manual THA. Robotics training likely refines the surgeon’s perception of stability, reducing LLD in manual procedures as well.

16:03 - 16:04

3050 Shift From 1th To 2nd Generation Of Cephalosporins As Prophylactic Antibiotics In Orthopedic Surgery And Surgical Site Infections

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Abstract
Both first and second generation cephalosporins are recommended as prophylactic antibiotics for orthopedic trauma surgery. A comparative study between both generations of cephalosporins has not been conducted before. The current retrospective study was designed to compare surgical site infection rates between both prophylactic antibiotics.

METHODS
Cases were included from an anonymised registry from a level one trauma center if the met the following criteria: age between 18 and 70 years and hospitalisation for at least 24 hours. During the study period, prophylactic antibiotic protocols were changed from first-generation to second-generation cephalosporins. We analysed SSI infection rates and compared patients who underwent surgery during the period when first-generation and second-generation cephalosporins were the standard.

RESULTS
A total of 2,269 cases have been included, of whom 1,168 were selected for the FIRST and 1,101 in the SECond cohort. SSI-infection rates dropped from 2,8 to 2,6 pct after the shift from FIRST to SECond generation cephalosporins. This was mainly due to less gram positive infections. In the SECond cohort, deep infections (with osseous/implant involvement) were diagnosed in 41% of cases.

CONCLUSIONS
A shift from first to second generation cephalosporins is associated with decreased SSI-rates in patients <70yrs undergoing trauma orthopedic surgery. This is mainly due to reduced occurrence of Gram-positive infections. More detailed studies are required to identify which specific trauma patients benefit most from altering prophylactic antibiotics routines.

16:21 - 16:22

3070 Syndesmotic Screw Fixation In Bimalleolar Fractures: An Umbrella Review Of Outcomes And Complications

Mohamed Sadok Chtai, Amine Benammou, Mohamed Abid, Romdhane Denguezli, Sofien Benzarti, Mohamed Ali Khalifa, Karim Bouattour

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Abstract

Introduction

Syndesmotic integrity is crucial for ankle stabilization. Syndesmotic screws have long been the gold standard for stabilizing the syndesmosis, but their use has become increasingly debated. This study aims to evaluate the effectiveness of syndesmotic screws in bimalleolar fractures and assess complications associated with their use.

Materials and Methods

An umbrella review was conducted by analyzing systematic reviews and meta-analyses published up to 2024 in PubMed, Embase, and Cochrane Library, using the keywords "syndesmotic screw" and "bimalleolar fracture."

Inclusion criteria: Systematic reviews and meta-analyses in French or English focusing on syndesmotic screw fixation, reporting functional outcomes using the AOFAS score, and documenting complication and reoperation rates.

A total of 250 reviews and meta-analyses were identified. After screening titles and abstracts, 35 studies met the inclusion criteria.

Results

Syndesmotic screws effectively stabilize the syndesmosis, provided adequate intraoperative reduction is achieved. Screw number (1 or 2), diameter (3.5 or 4.5 mm), tricortical or quadricortical positioning, and ankle position during fixation do not appear to influence outcomes. Most reviews recommend selective use of screws after stress testing, and routine screw removal is no longer advised. Complications include screw breakage (5–20%), malreduction (10–15%), residual syndesmotic widening, and post-traumatic arthritis (10–20%). Endobutton stabilization is associated with lower complication rates. Long-term functional outcomes, assessed by the AOFAS score, are generally favorable.

Conclusion

Syndesmotic screws remain a reliable and cost-effective option for syndesmosis stabilization. However, modern alternatives, such as endobuttons, appear to reduce complications.

Conflicts of Interest: None declared.

16:01 - 16:02

2049 Where Is The CAM? Does The Presence Of Hip Dysplasia Effect The Prevalence And Location Of CAM Deformities In Adolescent Hip Pain Patients.

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Abstract
Introduction

Adolescent hip dysplasia and CAM deformities add complexity to the treatment of hip pain. Although there is extensive literature on both adolescent CAM deformities and hip dysplasia independently, there is limited information discussing both entities.

Purpose

This study aims to assess whether the presence of hip dysplasia affects the prevalence and location of CAM deformities compared with non-dysplastic hips in adolescents.

Methods

A single-center retrospective study assessed hip pain patients from Jan 2012 to Sept 2024. Data collection was based on chart review and imaging consensus of all hip MRI conducted by two musculoskeletal radiologists and a pediatric orthopedic surgeon. Data included was hip dysplasia (LCEA<18 degrees), CAM deformities and CAM deformity location. Statistics were done with SPSS version 29 at a significance level of <0.05.

Results

From our study cohort of 107 patients (mean age 15.3 years, 66% female) there were 64 CAM deformities, 20 (55.6%) of dysplastic hips had concomitant CAM deformities and 44 (53.7%) of non-dysplastic hips had CAM deformities. The anteriosuperior quadrant was the most common location for CAM deformities, 14 (70%) in dysplastic hips and 29 (65.9%) in non-dysplastic hips.

Conclusion

Adolescent patients with hip dysplasia have a similar prevalence of CAM deformities compared with non-dysplastic hips. CAM deformities most commonly occur anterosuperior, whether or not co-existing hip dysplasia exists. The presence of hip dysplasia and CAM deformities are two potential etiologies of hip pain, and both should be considered in treatment planning.

Keywords: Hip Dysplasia, Hip, Femoroacetabular impingement, Pediatrics

16:26 - 16:27

972 Ulnar Translocation With Wrist Arthrodesis In Distal Radius GCTs: A Retrospective Analysis Of Oncologic And Functional Outcomes

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2. Central Institute of Orthopaedics, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi, India

Abstract

Introduction:

Giant cell tumour (GCT) of the bone is a locally aggressive neoplasm predominantly affecting the epiphyseal regions of long bones, with the distal radius being the third most common site. Surgical management of GCT at this site poses unique challenges due to the proximity of critical neurovascular structures and the need for functional preservation. Ulnar translocation combined with wrist arthrodesis has emerged as a viable option, particularly in resource-limited settings.

Methods:

This retrospective case series included 10 patients with aggressive GCT of the distal radius treated with wide local excision followed by ulnar translocation and wrist arthrodesis. The procedure involved resection of the distal radius, medial translocation of the ulna, and arthrodesis using a 3.5 mm dynamic compression plate. Functional outcomes were assessed using the Musculoskeletal Tumour Society (MSTS) scoring system, and radiographic assessments were performed to monitor bony union and detect recurrence.

Results:

The mean age of the patients was 33 years. The average follow-up was 55 months. MSTS scores averaged 25.1, with eight patients showing good grip strength. Bony union was achieved at the ulno-carpal junction in an average of 4 months and at the radio-ulnar junction in 8 months. Complications included cross union in one patient and soft tissue recurrence in another.

Conclusion:

Ulnar translocation combined with wrist arthrodesis offers a stable, functional, and oncologically sound solution for managing aggressive GCTs of the distal radius. The technique is especially valuable in settings where advanced prosthetic options are not readily available

16:08 - 16:09

99 Simultaneous Bilateral Atypical Femur Fractures In 9 Year-Old Identical Twins With LRP5 Gene Mutation

Mohamed Sarhan, **Moustafa Aly**, Paul Williams, Simon Humphry

Swansea Bay University Health Board, Swansea, United Kingdom

Abstract
Introduction: Atypical femoral fracture (AFF) is a rare complication in children undergoing bisphosphonate therapy for bone disorders. Early onset osteoporosis is often associated with gene mutations underlying monogenic bone disease. This study aims to highlight the risk of AFF with Bisphosphonates therapy in children, the treatment provided for these fractures, and explores the potential role of genetic predisposition in its occurrence. Case presentation: we report two cases of AFF in 9 year-old identical twins known to have lipoprotein receptor-related protein 5 (LRP5) gene mutation related osteoporosis, both undergoing long-term bisphosphonate therapy. Each presented within a span of 9 days with AFF on one side and impending AFF on the contralateral side. Their fractures were treated with intramedullry nailing using Orthopediatrics Simple Locking IntraMedullary Nail (SLIM nail) augmented with lateral plate and screws. The impending contralateral fractures were treated prophylactically using the same nail system sequentially. Conclusion: Further studies are required to determine whether the risk of AFFs is primarily influenced by the underlying monogenic bone disease, or the long-term use of bisphosphonates, the dosage regimens involved, or a combination of these factors. Contralateral limb imaging is strongly recommended to identify potential impending fractures and ensure appropriate management.. The described fixation techniques for the AFFs in paediatric patients proved to have a good functional outcome with full bone healing. Therefore, they can be considered in AFF management.

Friday, 5 September

JAM 10
10:38 - 10:39

95 Femoral Condyle Insufficiency Fractures Post-Total Knee Arthroplasty (FCIF-TKA)

Walter-Soon-Yaw Wong, Hao Bin Chen, Joel Lim, Wei Ming Siow, Kein Boon Poon

Sengkang General Hospital, Singapore, Singapore

Abstract
Femoral Condyle Insufficiency Fractures following Total Knee Arthroplasty (FCIF-TKA) are rare but significant complications, with a reported incidence of 0.05% and fewer than 50 cases documented.

This study retrospectively reviewed 835 primary total knee arthroplasties performed by a single surgeon, identifying six cases of FCIF-TKA (incidence: 0.72%).

All cases occurred in female patients with a mean age of 72 years, mean BMI of 33.48, and severe varus deformity. Bone mineral density scans revealed osteopenia or osteoporosis in all recorded cases. All patients had stemless Posterior-Stabilized (PS) femoral implants, with fractures diagnosed at a mean of 17.2 days post-surgery. Conservative management was trialled in all patients, involving a hinged knee brace and a 12-week protected weight-bearing protocol, which resulted in significant improvements: VAS pain scores decreased from 4.8 at diagnosis to 2.0 at 6 months and 0.67 at 1 year, while ROM increased from 76.3° postoperatively to 94.2° at 1 year. One non-compliant patient required revision surgery due to fracture progression. At 4 years, 83.3% of cases showed implant survivorship without further revision.

FCIF-TKA appears associated with advanced age, female sex, high BMI, osteoporosis, and severe varus deformities, particularly with stemless PS implants. Preventive strategies, such as using Cruciate-Retaining implants and femoral stems to increase metal-bone contact, may reduce risk. Conservative management with a hinged knee brace and structured weight-bearing for 12 weeks yields satisfactory pain and ROM improvements at one year, with high survivorship at four years, indicating that immediate revision may not be necessary for compliant patients.

10:42 - 10:43

222 Factors Influencing Humeral Component Cementation In Short-Stem Reverse Shoulder Arthroplasty

Felix Hochberger, Maximilian Rudert, Kilian List, **Thilo Lehmeyer**

Department of Orthopaedic Surgery, Julius-Maximilians University Wuerzburg, Koenig-Ludwig-Haus, Brettreichstrasse 11, 97074 Wuerzburg, Germany., Wuerzburg, Germany

Abstract
This study aimed to identify preoperative radiographic, surgery-, and patient-related factors influencing intraoperative decision-making regarding humeral component cementation in short-stem reverse shoulder arthroplasty (RSA).

Methods
A retrospective analysis was conducted on patients who underwent RSA between 02/2019 and 10/2024. Fixation decisions were based on humeral bone quality and stability testing using a trial stem. Patients were categorized into Group A (cemented fixation) or Group B (cementless fixation). Variables analyzed included patient factors (age, sex, BMI, ASA score), radiographic parameters (cortical bone thickness gauge [CBTg], acromiohumeral distance [AHD], Hamada and Walch classifications), and surgical factors (prosthesis type, diagnosis, and subscapularis [SSC] refixation).

Results
Logistic regression revealed that older age (Group A: 78.1 ± 7.2 years; Group B: 72.2 ± 5.3 years; $p = 0.046$) significantly increased cementation likelihood (OR: 1.11, $p = 0.004$). Lower CBTg values (Group A: 0.25 ± 0.1 mm; Group B: 0.30 ± 0.1 mm; $p = 0.039$) were strongly associated with cementation (OR: 0.0003, $p = 0.019$). Female sex (Group A: 77%; Group B: 48%; $p = 0.016$) showed a strong, but not statistically significant, association (OR: 2.14, $p = 0.080$). Diagnosis showed a trend toward significance in influencing cementation likelihood.

Conclusion
Older age and lower CBTg were significant predictors for humeral component cementation in RSA. Female sex and diagnosis showed trends toward significance. These findings may assist surgeons in optimizing intraoperative fixation strategies.

10:48 - 10:49

440 Cemented Calcar-Guided Short-Stem Prostheses In Geriatric Patients: Short-Term Results From A Prospective Observational Study

Ahmed Yaseen

Krankenhaus Johanneum, Wildeshausen, Germany

Abstract
oth cementless and cemented stems have exhibited favorable long-term outcomes in total hip arthroplasty. Nonetheless, in elderly patients, cemented hips offer an advantage due to their reduced risk of periprosthetic fractures. This study aimed to assess the initial outcomes of 28 patients who underwent unilateral cemented total hip arthroplasty utilizing a calcar-guided A2 stem (ARTIQO GmbH, Lüdinghausen, Germany). Various types of antibiotic-loaded bone cement were employed. During follow-up, we recorded demographic data and comorbidities and employed standardized clinical assessment tools, including the Harris Hip Score. Radiographic assessments included preoperative, postoperative, and follow-up imaging to evaluate subsidence, osteolysis, and bone resorption. The results indicated that among the 28 patients, 5 withdrew consent and 2 patients passed away from unrelated causes. Additionally, one prosthesis was explanted due to the undersizing of the cement stopper, which resulted in an inadequate cement mantle. As a result, 20 patients underwent a 1-year follow-up, revealing noteworthy enhancements in clinical scores, with no instances of radiolucent lines or osteolysis. No infections were detected. In summary, our short- term experience with this particular cemented short-stem design yielded promising results, exhibiting excellent functional outcomes, no aseptic loosening attributable to the stem, and no infections. Further clinical studies and registry data are essential to corroborate these findings.

10:30 - 10:31

1210 Fracture Clinic: Reducing Time, Improving Outcomes

Raaghav Rai Verma, Akhil Taneja, Khaldoun Bitar

The Royal Wolverhampton NHS Trust, Wolverhampton, United Kingdom

Abstract

Introduction
Fracture clinics are essential for timely orthopaedic management. An initial audit identified prolonged waiting times from the Emergency Department (ED) to the fracture clinic, causing delayed treatment, increased surgical complexity, and suboptimal outcomes. To address this, a Triaging system (Red-Amber-Green [RAG]) was implemented to streamline referrals based on injury severity. This study evaluated impact on patient flow and treatment timelines.

Objectives
To reduce ED-to-fracture clinic referral times, enhance referral quality, and expedite urgent cases to prevent delayed surgery and adverse outcomes.

Methodology
A retrospective audit in November 2023 revealed delays in ED referrals, with surgical cases waiting up to two weeks. Following clinical governance approval, the RAG system was introduced. Re-audit of 16 consecutive fracture clinics (Sept 9–30, 2024) assessed total patient volume, inappropriate referrals, DNA rates, referral-to-clinic times, surgical case timelines, and compliance with the RAG system.

Results
Among 564 patients (mean 35 per clinic), mean referral-to-clinic time was reduced to 4 days (Red) and 10 days (Green/Amber). Surgical case wait times improved to 6 days. Inappropriate referrals (3%) and DNA rates (5 per clinic) remained unchanged. RAG compliance was 78%.

Conclusion
The RAG system improved efficiency by reducing waiting times and expediting surgical decisions—particularly for hand and wrist fractures. Early orthopaedic team involvement based on structured triage improved patient prioritization and streamlined management. We aim to further refine the system after addressing the backlog, reduce referral times, and align with BOAST guidelines for fracture clinic reviews within three days

Keywords
Fracture clinic, RAG- Red, Amber, Green; DNA (Did not attend)

10:45 - 10:46

1245 Microscope Augmented Reality Navigation-Assisted Anterior Cervical Intervertebral Surgery Based On Multimodal Imaging: An IDEAL Stage 1 Study

Minghe Yao, **Beiyu Wang**

West China Hospital, Sichuan University, Chengdu, China

Abstract
Introduction: Anterior cervical surgery faces challenges in accurately locating and exposing large, complex compressions, leading to risks of inadequate neural decompression and neural injury. Augmented Reality (AR) under a surgical microscope can integrate preoperative imaging with intraoperative views for navigation.
Aims & Objectives: To detail the procedure of AR-navigated microscopic anterior cervical intervertebral decompression and assess its safety and feasibility.
Study Design & Methods: This study is a registered prospective IDEAL stage 1 case series (ChiCTR2400094844). Preoperative scans were obtained including computed tomography (CT) and magnetic resonance imaging (MRI). Target vertebrae and compressive lesions were identified and segmented. During surgery, cone-beam computed tomography (CBCT) scans were obtained for registration and curvature correction of preoperative images. The target objects were projected as AR images to the eyepiece of microscope to guide identifying of lesion location, depth, and boundaries during surgical exposure and resection.
Results: Ten cervical segments (eight fusions and two disc replacements) in seven patients underwent operation. The surgical duration was 151.1 ± 28.6 minutes. Adequate decompression and appropriate implant placement were confirmed by imaging during and after surgery. At three-month follow-up, patient-reported outcome measures (PROMs) significantly improved. No serious complications were observed.
Conclusion: The application of AR-assisted microscopic navigation was safe and effective in both anterior cervical arthrodesis and arthroplasty. It allowed for precise localization and complete resection of the lesion, guaranteeing complete neural decompression, while minimizing unnecessary damage to the vertebral endplate in order to reduce implant-related complications.
Keywords: Surgical navigation; Microscope; Augmented reality; Cervical spine

10:54 - 10:55

1349 Orthopaedic Perspective On The Management Of Necrotising Fasciitis In A Tertiary Care Centre: A Clinical Audit On Morbidity And Mortality Outcomes

Aakaash Venkatesan

Aneurin Bevan University Health Board, Newport, United Kingdom

Abstract
Background:
Necrotising Fasciitis (NF) is a life-threatening soft tissue infection requiring urgent multidisciplinary management. This clinical audit evaluates morbidity and mortality outcomes in NF patients, with a focus on orthopaedic surgical interventions in a tertiary care setting.

Methods:
A retrospective-prospective audit was conducted in Aneurin Bevan University Health Board over 2 years (2022–2024) , analyzing 30 patients diagnosed with NF, presented to the Orthopaedic department. A structured proforma was implemented to assess documentation of LRINEC scoring, finger sweep assessment and time to management. Statistical analysis was performed using SPSS v.25, with chi-square and logistic regression applied to determine risk factors.

Results:
Among 30 patients (M:F = 2.5:1, mean age 52.1 ± 11.3 years), the most common comorbidity was diabetes mellitus (70%), followed by chronic kidney disease (20%).

Lower limb involvement was seen in 24 patients (80%), while 6 (20%) had upper limb/perineal involvement.
Early debridement (<24 hrs) was performed in 14 patients (46.7%), with a mortality rate of 14.3% ($p=0.04$).
Delayed debridement (>48 hrs) was linked to a 50% mortality rate ($p<0.001$).
Overall mortality was 30%, with higher rates in septic shock (66.7%, $p<0.001$).
Amputation was required in 6 patients (20%), while 40% had prolonged ICU stays (>7 days).
Implementation of the NF management proforma led to a 15% reduction in mortality ($p=0.04$).
Conclusion:
Early surgical intervention and a structured management protocol significantly improve NF outcomes. Standardized proformas enhance decision-making and reduce mortality. Further multicentre validation is required.

10:39 - 10:40

1738 Conjoined Perforator Flap For Repairing Circular Wound Soft Tissue Defect Of Extremities

Panfeng Wu

Xiangya hospital, Changsha, China

Abstract
To investigate the feasibility and clinical application of conjoined perforator flap in repairing circular wound soft tissue defect of extremities Methods From March 2016 to April 2019, 7 patients with circular wound soft tissue defect of extremities were treated. During the operation, the cloth sample was wrapped around the limbs, and the cloth was designed according to the shape of the wound surface. Then the cloth was cut according to the width and length of the flap that could be cut from the donor area preoperatively, and the conjoined perforator flap was designed with the width as the length. Results All the flaps survived successfully in 7 patients postoperatively. One patient was repaired with skin graft for the recipient area residual wound, and the wound was temporarily covered and pressurized by VAC. The distal end of the local flap was slightly necrosed, and the wound was delayed healed by stage II dressing change. All flaps healed in the stage I. All the patients were follow-up for 3 to 36 months with an average of 12 months. The appearance and function of recovered satisfactorily. Conclusion The conjoined perforator flap transplantation is an ideal method to repair circular wound soft tissue defect of extremities, which is worthy of clinical application.

10:43 - 10:44

1992 Distal Femur Replacement: An Option For Periprosthetic Knee Fractures In Osteoporotic Bone

João De Sousa Seixas, Bianca Barros, Afonso Faria, Mario Rui Silva, Filipa Cordeiro, Filipa Adan Silva, Filipa Pereira

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Abstract
Periprosthetic knee fractures (PKF) are a complication of total knee arthroplasty (TKA) that may involve the distal femur. Their incidence is increasing due to population aging and the rising number of TKAs. Osteoporosis is a key risk factor and most fractures occur after low-energy trauma. These fractures pose a challenge to orthopedic surgeons due to comminution, poor bone quality and postoperative mobilization difficulties.
An 80-year-old woman with a history of right TKA presented to the emergency department after a fall, reporting right knee trauma. Physical examination revealed knee edema and functional impairment. Radiographs identified a femoral PKF and computed tomography confirmed a comminuted distal femur fracture. Surgical management was indicated.
The patient underwent implant removal and TKA revision with distal femur replacement. The procedure was uneventful. At six-month follow-up, she was pain-free, fully weight-bearing and exhibited good range of motion. Radiographs showed a well-positioned implant without signs of loosening.
PKFs are common in elderly osteoporotic patients. Surgical treatment is required to restore function. Fixation is the standard approach, though prolonged non-weight-bearing is often necessary due to high nonunion risk. In cases of severe comminution and poor bone stock, osteosynthesis may not be feasible. Distal femur replacement is a viable alternative, reducing complications associated with fracture healing in this population.

10:51 - 10:52

1447 Early Weight Bearing And Lower Complication Rates With Tibiotalocalcaneal Retrograde Nail Fixation In Fragility Ankle Fractures

María Del Rocío Valverde Vázquez, Vicente Javier García Laguarta, Cristina Villanueva Dolcet, Rafael Fernández Gabarda, María José Sangüesa Nebot, **Nuria Ribera Martínez**

Hospital Arnau de Vilanova - Hospital de Llíria, Valencia, Spain

Abstract
INTRODUCTION AND OBJECTIVES
Ankle fractures in elderly osteoporotic patients are challenging because they are associated with high morbidity and loss of independence. Early weight bearing and minimising soft tissue damage are paramount. The aim of this study is to evaluate the clinical and functional outcomes of surgical treatment with a tibiotalocalcaneal nail in patients with significant comorbidities who suffered dislocated ankle fractures in our department.
MATERIALS AND METHODS
An observational, descriptive and retrospective study was conducted. We included patients with significant comorbidities who were surgically treated with a tibiotalocalcaneal nail after dislocated ankle fractures operated in our department from January 2023 to December 2024.
RESULTS
Three patients with a mean age of 84 years and one 56-year-old stage IV oncology patient were included. All patients were female. All had trimalleolar closed dislocated ankle fractures. Elderly patients had several comorbidities including type II diabetes mellitus, venous ulcers, leg cellulitis and gastrointestinal bleeding. All patients recovered their pre-fracture mobility. No complications were observed in any of the cases.
CONCLUSIONS
Tibiotalocalcaneal nail fixation is a good option in the treatment of complex ankle fractures associated with bone fragility, as it allows early weight bearing and has a lower complication rate.

10:56 - 10:57

1592 Increasing Numbers Of Peer Review Requests: A Challenging Job

Henrik Baecker

Auckland City Hospital, Auckland, New Zealand

Abstract
Reviewers are key to ensure the credibility and integrity of the academic field. Hereby, most reviewers are well published doctors and scientists who are contacted and asked to review articles in their field.
Aim of this study was to analyze the number of review requests by different journals within 6 months time.

All review requests from a single orthopaedic surgeon who is well published were collected between June 2023 and Mai 2024. Data were collected on publisher, number of reminders, time between reminding emails as well as type of articles and topic. Type of articles were classified into case reports, retrospective, prospective, randomized control trials, systematic reviews and basic research.

In the period of interest, a total of 198 requests from 54 different journals were received. The most common publishers were Baishideng Publishing Group (n=21/54; 38.9%), followed by Springer (n=18/54; 33.3%), Multidisciplinary Digital Publishing Institute (MDPI) or Elsevier (each n=10/54; 18.5%). On average most journals did not send any reminders (43.4%), followed by one or two reminders (24.2%, respectively 21.2%). Reminding emails were sent after 3.7±2.4 days. Most studies were of retrospective design (51.2%) and focused on traumatology in 25.3%, especially the spine in 19.2%.

Medical reviewers are required to follow a dedicated review process to assess papers for different journals. It seems unrealistic that a single academic orthopaedic surgeon is able to complete 198 reviews within one year time. However, with increasing number of publications and journals this will becoming more difficult in future and will cause severe delays in publication.

10:44 - 10:45

2226 Analysis Of Interprosthetic Femur Fracture Fixation , Case Series Of 14 Patients In District General Hospital , With Literature Review

Awf Alshahwani, Ahmed Swealem, **Mohamed Abdelhadi**, Christos Plakogiannis, Ashwin Kulkarni

Leicseter General Hospital, Leicseter, United Kingdom

Abstract

Background

Interprosthetic femur fractures (IPFFs) are an increasingly significant challenge in orthopedic trauma surgery, especially with the rise in joint arthroplasties among an aging population. These fractures occur in the femoral shaft between a total hip replacement (THR) and a total knee replacement (TKR), presenting unique biomechanical and surgical challenges.
This study aims to provide a comprehensive analysis of surgical outcomes, union rates, complications, mortality, and functional recovery in IPFF patients.

Methods

A retrospective case series was conducted at a District General Hospital, analyzing 14 IPFF cases surgically treated between August 2020 and August 2023. Inclusion criteria included confirmed IPFFs between THR and TKR components, a minimum 12-month follow-up, and complete clinical documentation.

Results

The study included 14 patients with a mean age of 84.6 years, predominantly female (85.7%). The mean time to surgery was 2.4 days, with an average operative time of 142 minutes. Complication rates were high at 78.6%, including surgical site infections (21.4%), hardware failure (14.3%), and nonunion (28.6%). The reoperation rate was 85.7%, underscoring the complexity of IPFF management. Mean time to union was 7.2 months, with a primary union rate of 71.4%. Mortality rates were significant, with 90-day and 12-month rates at 21.4% and 28.6%. At 12 months, 42.9% of patients returned to baseline mobility, while 28.6% experienced functional decline.
This study underscores the need for specialized surgical expertise and standardized treatment protocols in managing IPFFs. High complication and mortality rates highlight the vulnerability of this patient population, emphasizing the importance of early intervention, enhanced fixation methods,

10:50 - 10:51

2247 Vascularized Medial Femoral Trochlea Osteocartilaginous Flap Reconstruction Of Proximal Pole Scaphoid Nonunions: Two Cases Report

Susumu Yoneda, Motoko Nakasone, Shuko Chinen, Hirotaka Okubo, Kotaro Nishida

University of the Ryukyus, Okinawa, Japan

Abstract
It is difficult to achieve union of a scaphoid nonunion that is associated with osteonecrosis of the proximal pole. Recently, vascularized medial femoral trochlea (MFT) osteocartilaginous flap was reported with its availability. Initially, it was indicated for cases of proximal pole avascular necrosis, where the articular surface with the capitate could be preserved. However, recent studies have expanded its indications to include cases with shortening and humpback deformity accompanied by proximal fragment osteonecrosis, as well as cases where the proximal fragment is severely comminuted, including the articular surface with capitate. We report two cases of chronic scaphoid proximal pole avascular nonunions with humpback deformity or comminuted fracture using the vascularized MFT osteocartilaginous flap, with a minimum of 6 months of follow-up. Both of them achieved bone union and improved in pain and grip strength. Early follow-up suggests that the vascularized MFT osteocartilaginous flap is a valuable tool for treating challenging proximal pole scaphoid nonunions.

10:33 - 10:34

2351 NEW INNOVATIVE DISTAL TIBIAL PLATING SYSTEM APPLIED THROUGH POSTERO LATERAL APPROACH – IS IT THE NEED OF THE HOUR ?

SATHISH Kumar Thangamani, ASHOKAN Kumar Chandran

GOVERNMENT STANLEY MEDICAL COLLEGE HOSPITAL, Chennai, India

Abstract
Background: Currently no personalized anatomic plate for distal tibia fractures particularly with application on the posterior aspect is available. Aim & Objective: To design an innovative anatomic plate for treatment of distal tibia fractures which fits well in the anatomy of the native tibia. Material & Methods: Government Stanley Medical College in collaboration with National Hub for Healthcare Instrument Development, Anna University innovated & developed this prototype. History: Initially posterior plating was tried with narrow dcp ,subsequently the proximal tibia plates were used which caused soft tissue irritation and the distal radius plate were very small with inadequate strength .Scientific Inputs : 100 human tibias (50 males & 50 females with equal number of right and left sides) were scanned by spiral CT and their three-dimensional images were used for the geometric data of distal tibia(posterior slope angle & medio -lateral width distance).Anatomical plate for distal tibia was designed using appropriate software and constructed initially with PLA biocompatible material using advanced 3D printers and the final construct was obtained in Stainless steel (316 LVM) Results: Bio mechanical tests showed that plates were able to withstand adequate bending and torsion forces compared to the imported plates. Outcomes : Outcome analysis was done using advance wireless sensors and a unique gait analysis lab software which was developed for DRDO .Conclusions: The newly designed posterior distal tibia will provide the strength of 4.5 system and the agility of 3.5 system with unique combination of both. Keywords: Distal tibia fractures, Posterolateral approach

10:55 - 10:56

3143 Evaluating Large Language Models In Patient Education: A Comparative Analysis Of ChatGPT And Google Gemini In Addressing Frequently Asked Questions In Periacetabular Osteotomy

Borna Guevel[1,2], Timothy Davis[2], Kartik Logishetty[2], Alastair Dick[2], Jonathan Hutt[2]

1. Imperial College Healthcare NHS Trust, London, United Kingdom
2. University College London Hospitals NHS Foundation Trust, London, United Kingdom

Abstract

Introduction

Large Language Models (LLMs) are increasingly used as sources of information across domains, including healthcare. As patients begin to rely on LLMs for medical queries, it is essential to evaluate the accuracy and reliability of these tools in providing health-related information.

Aims and Objectives

This study aims to compare the performance of two widely-used LLMs—ChatGPT (OpenAI) and Google Gemini (Google DeepMind)—in responding to common patient questions about periacetabular osteotomy (PAO), a procedure frequently performed on younger, digitally engaged patients.

Study Design and Methods

Ten frequently asked PAO-related patient questions were curated by a panel of fellowship-trained surgeons. Responses were generated by both LLMs and independently assessed by three experienced consultants blinded to the source. Each response was rated on clarity, accuracy, and completeness using a 5-point Likert scale. Additionally, the Flesch reading ease score was used to assess the readability of responses.

Results

ChatGPT achieved a higher average score than Gemini (4.17 vs. 3.13; $t = -3.08$, $p = 0.006$), with reviewers noting better clarity and completeness in several responses. Gemini's outputs were generally accurate but occasionally vague or lacking detail. Both models produced responses classified as "difficult" to read, with no significant difference in readability scores ($p = 0.4922$).

Conclusion

These findings suggest that there may be meaningful differences in how current LLMs support patient education around PAO. While ChatGPT showed relatively stronger performance in this study, both models have potential, and further research is needed to validate their clinical utility across broader contexts.

10:49 - 10:50

1016 Treatment Of Thumb Carpometacarpal Instability With Isolated Mini Tightrope Fixation: A Case Series Of Three Hands

Hin Ting Victor Yick, **Marvin Man Ting Chung**, Wing Yuk Ip

Department of Orthopaedics & Traumatology, The University of Hong Kong, Hong Kong, Hong Kong SAR

Abstract
Introduction:
Thumb carpometacarpal (CMC) instability, often resulting from trauma or generalized ligamentous laxity, can lead to persistent pain, functional impairment, and joint degeneration. Suture button suspensionplasty using Mini Tightrope fixation has been reported for stabilization of first metacarpal after trapeziectomy with good results, but reports of such treatment for thumb CMC instability are rare. Here we report three cases of thumb CMC instability and subluxation in two patients treated with Mini Tightrope fixation alone.
Methods:
The first case involved a 15-year-old female with a history of left thumb CMC joint injury during basketball. After six months of conservative treatment with splinting, Mini TightRope fixation was performed for stabilization of the left thumb CMC joint. The second and third cases involved a 28-year-old male with familial generalized ligamentous laxity and bilateral thumb CMC subluxation. Both thumb CMC joints were clinically subluxable and reducible, with magnetic resonance imaging showing partial tear of dorsal capsular ligament. After a trial of conservative treatment, he underwent sequential Mini Tightrope fixation, initially on right side then followed by left side six months later.
Results:
All three cases reported significant improvement in pain and function, with no recurrent instability at 1-year follow-up. No implant complications or need for implant removal were noted.
Conclusion:
Suture button suspensionplasty with Mini Tightrope fixation alone is a minimally invasive alternative to traditional ligament

10:37 - 10:38

382 Midterm Comparative Result Of Absorbable Screws, Metal Screws And K Wires In Pediatric Medial Humeral Epicondyle Fracture

Ming Zeng, Zhongwen Tang, **Jie Wen**, Sheng Xiao

Hunan Provincial People's Hospital, Changsha, China

Abstract
Objective: This study aims to compare the midterm clinical results of medial epicondyle fractures who were treated with metal screws, absorbable screws and K wires.
Methods: A retrospective review was conducted on 41 children with medial humeral epicondyle fractures between January 2016 and June 2024. Clinical outcomes were assessed and compared using elbow range of motion (ROM), mayo elbow performance score (MEPS) and range of rotation (ROR) during the last follow-up visit.
Results: In terms of operative time, length of incision, and VAS scores, no significant differences were observed ($p > 0.05$). The patients were followed up at an average of 33.1 months (range, 22-49 months). The mean MEPS were 89.44 ± 3.79, 89.58 ± 3.34 and 90.9 ± 4.4 ($p> 0.05$), the mean ROM were 122.28 ± 5.87, 125.1 ± 5.83 and 125.1 ± 4.4 ($p> 0.05$), and the mean ROR were 153.33 ± 5.94, 155.83 ± 5.15 and 155.5 ± 6.9 ($p=0.26$) in Metal group, Absorbable group and K wires group, respectively. In addition, 4 patients reported complications in K wires group, 2 children in Metal group, No one in Absorbable group.
Conclusion: Three fixations can yield equivalent therapeutic outcomes,absorbable screws obviating the need for subsequent surgical interventions and mitigating complications associated with screw irritation.K-wires fixation, while having a shorter operation time and saving an additional anesthesia and surgery to remove the implants, does come with a higher complication rate.

10:31 - 10:32

983 Combination Of Orthopaedic Principles - Use Of Ilizarov Ring Fixator As An Adjunct For Limb Reconstruction In A Child Of Paley V Tibia Hemimelia

Prateek Behera

All India Institute of Medical Sciences Bhopal, Bhopal, India

Abstract
Introduction: An 8-month-old infant presented with a deformed right lower limb, equino-cavus foot, and knee flexion contracture. Radiological investigations revealed a complete absence of tibial cartilaginous anlage, diagnosed as Pre-axial longitudinal deficiency, Paley-5A tibial hemimelia. She was initially managed with a splint till she was 1.5 years of age.
Original and Modified Procedures: The original procedure for Type V hemimelia described by Paley involves a six-axis external fixator to correct knee flexion deformity and centralize the talus under the distal fibula epiphysis. However, due to financial and logistic constraints, we used the Ilizarov fixator instead, combining principles of Pediatric Orthopaedics and deformity correction to achieve similar goals.
Surgical Technique: The surgical technique included a postero-medial approach with TA tenotomy, fibula shortening, and centralization over the talus in the first stage. An ilizarov frame was applied to bring the proximal fibula down. This was followed by Weber patelloplasty, fusion of the rotated patella with the proximal fibula, and frame application with retention of the fibula intramedullary wire. After two years, she was had a reasonable sized single bone in her limb that allowed for weight bearing while preserving some knee function. During the last follow-up at three years she had some residual forefoot adductus and would need surgeries in future to address the same and for limb length equalization.
Discussion and Follow-up: In resource-limited scenarios, limb salvage with classic Ilizarov fixator can be offered to retain lower limb functionality in cases of tibial hemimelia with complete agenesis thereby avoiding amputation.

10:32 - 10:33

129 A Prospective Study Of Cases Of Proximal Tibial Fractures Using Locking Compression Plating

Mahesh Kumar Reddy Vuruvakili

Vydehi Institute of medical sciences and research center, Bangalore, India

Abstract
Standard open reduction and internal fixation techniques have been successful in restoring osseous alignment for proximal tibial fractures; however, surgical morbidity, especially soft tissue infection and wound necrosis, has been reported frequently. For this reason, several investigators have proposed minimally invasive methods of fracture reduction. To our knowledge, there have been no studies to assess the functional outcome of these fractures. During study period 30 patients were treated for proximal tibial fractures treated by open reduction and internal fixation with buttress plate and LCP. Out of which 8cases lost for follow up. In the present study there were 26 proximal metaphyseal fractures managed plate osteosynthesis. All the fractures united at an average of 13 weeks. There were 4 excellent, 16 good and 2 fair, 1 poor results. There were 1 patients with superficial infections which healed with regular dressings, no patients (5%) with knee stiffness, 2 patients with knee pain, no patients with delayed union, 1 patient with non union. Plating offers a good treatment option for difficult proximal tibial fractures, because plateosteosynthesis provide improved healing rates, restoration of the articular surface, and decreased complications.

Friday, 5 September

JAM 9
10:30 - 10:31

173 Minimally Invasive Lateral Lumbar Interbody Fusion Showed A Lower Incidence Of Radiologic Adjacent Segment Pathology Than Conventional Posterior Lumbar Interbody Fusion -A Comparison Of Survivorship Between Two Fusion Methods-

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Abstract
Introduction: Adjacent segment pathology(ASP) is a significant consequence of lumbar spinal fusion, potentially resulting from compromised posterior bone and soft tissue integrity. Few studies have directly compared ASP incidence between minimally invasive lateral fusion and conventional open posterior fusion.
Aims & Objectives: This study analyzed risk factors for radiologic ASP and clinical outcomes between minimally invasive lateral lumbar interbody fusion(LLIF) with percutaneous pedicle screw fixation and open posterior lumbar interbody fusion(PLIF). Differences in ASP incidence over time between fusion methods were also examined.
Study design & Methods: A total of 154 patients underwent one- or two-segment lumbar fusion for degenerative disease, with 107 patients followed for over a year(51 LLIF, 56 PLIF). Factors associated with ASP occurrence were analyzed, including demographics, radiologic findings, and clinical outcomes. Patient-related factors, preoperative diagnosis, number of fused segments, and radiologic evaluations were assessed. Cox regression survival analysis identified ASP risk factors, while the annual incidence and cumulative survival rate were calculated using life-table and Kaplan-Meier methods.
Results: Significant risk factors for ASP included postoperative PI-LL ≥10°($p=0.022$), preoperative facet arthropathy grade ≥2($p=0.016$), and PLIF over LLIF($p=0.028$). The predicted ASP incidence was 48.7% at 5 years. However, clinical outcomes showed no significant differences between ASP and non-ASP patients or between fusion methods.
Conclusions: Minimally invasive LLIF, preserving posterior structures, may slow adjacent segment degeneration. Assessing pre-existing facet degeneration and restoring sagittal balance during surgery may help reduce ASP.
Keywords: Radiologic adjacent segment pathology, Lumbar spinal fusion, Minimally invasive lateral lumbar interbody fusion, Posterior lumbar interbody fusion

10:38 - 10:39

388 Outcomes Associated With Distal Femur Fractures Treated With ORIF Compared To TKA In Elderly Patients

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Abstract

Introduction: Distal femur fractures (DFFs) in the elderly population can pose significant surgical challenges. Treatment of these fractures has traditionally been open reduction, internal fixation (ORIF) though an acute knee arthroplasty (TKA) has recently been suggested as a superior mode of treatment.

Methods: We conducted a retrospective analysis to identify patients over 60 who sustained DFFs and were treated with either TKA or ORIF between 2005 and 2025. Outcomes were analyzed at postoperative days 7, 30, and 90 and years 1 through 5. Primary endpoints were transfusion, infection, irrigation and debridement (I&D) procedures, revision surgery, and mechanical complications. Propensity score matching was used, and the data was evaluated using appropriate statistical methods.

Results: The study included 3,882 patients, 1,941 in both the TKA and ORIF cohorts. At 7 days postoperative, the TKA cohort showed an increased risk of transfusion (RR:1.152; CI: 1.075-1.233) and infection (RR:4.368; CI:2.663-7.166). Infection was also found to be increased in the TKA cohort (RR:2.500; CI: 1.687-3.705) at 30 days. At 90 days postop, the TKA cohort had a higher risk of transfusion (RR:1.416; CI:1.105-1.814), infection (RR:2.159; CI:1.610-2.894), and I&D procedures (RR:2.786; CI:1.1517-5.116). At postoperative years 1-3, the TKA cohort was found to have a higher risk of both revision surgery and mechanical complications.

Conclusion: This study found that the treatment of DFFs with TKA is associated with a higher risk of each of the examined complications when compared to ORIF. Our data suggests that ORIF should be the preferred treatment for most elderly patients with DFFs.

10:43 - 10:44

477 Augmented Anterior Capsular Plication For Type II Atraumatic Anterior Sternoclavicular Joint Instability Refractory To Non-Operative Treatment Based On Structural Anatomic MRI Findings

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Abstract
Background: Atraumatic anterior sternoclavicular joint instability (AASCJI) is attributable to a component of capsular laxity (Type II) and muscle sequencing (Type III). Most patients can be successfully treated by a specialist physiotherapy protocol. However, a small number of patients, despite adequate treatment, remain symptomatic due to residual Type II capsular laxity.

We undertook an augmented anterior capsular plication (ACP) procedure for patients with residual Type II atraumatic SCJ instability, confirmed by MRI, refractory to adequate non-operative treatment.

Materials & Methods: Between 2015 and 202 patients that underwent an ACP for AASCJI, and refractory to adequate non-operative treatment were reviewed. Exclusion criteria were patients that had not undergone adequate non-operative treatment, with a ligamentous injury on MRI scan or had undergone previous surgery.

Patient reported outcomes were assessed using: Rockwood SCJ, OSIS and Quick-DASH scores. Survivorship was defined as no clinical failure, such as instability, and no revision surgery.

Results: 13 patients who underwent an ACP were available at final follow-up. The mean age at surgery was 20.5 years (16-25) and the mean follow-up 46.5 months (25-75).

At final follow-up the mean Quick-DASH score dropped 32.2 (22.7–40.9) to 0.9 (4.5–0), the mean Rockwood score rose 7.5 (6–9) to 15 and the mean OSIS score rose 24.8 (18–31) to 47.5 (46–48). These all reached statistical significance. The repair/construct survivorship was 100%.

Conclusion: Undertaking an augmented capsular plication on patients with symptomatic atraumatic SCJ instability confirmed by MRI imaging that have failed appropriate non-operative treatment provides a satisfactory result with regards to clinical outcomes and joint stability.

10:51 - 10:52

555 Surgical Repair Of Muscle Hernias: Clinical Outcomes And Literature Insights

Patrícia Vaz Da Cunha, Miguel Rocha, João Lucas, Rui Matos, João Soeima, Inês Henriques, José Luís Simães, Fernando Macedo, Frederic Da Cunha Ramalho, Luís Maia

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Abstract
Muscle hernias are protrusions of muscle tissue through a defect or tear in the overlying fascia, which can be either conge+ital or acquired due to trauma, overuse, or other factors. Although muscle hernias can occur in various parts of the body, they are more frequently observed in the upper limb, particularly in the forearm and upper arm muscles. These hernias often become more pronounced during physical exertion and can lead to symptoms such as discomfort, localized pain, or muscle weakness.
This report highlights the successful surgical repair of a forearm muscle hernia in a 30-year-old male patient. He presented with pain and functional limitations in his right arm following a penetrating trauma to the proximal third of the forearm. The symptoms, which were exacerbated during exertion, significantly impaired both his recreational activities (bouldering) and professional performance. Surgical repair was performed using a mesh implant combined with retensioning of the muscular fascia, followed by a three-month restriction from physical activity.
A review of the literature reveals five peer-reviewed articles documenting 16 cases of muscle hernias, predominantly in the forearm (81%). Surgical techniques included direct repair (12 cases), mesh repair (1 case), and fascia lata flaps (3 cases). Outcomes showed significant improvement in postoperative DASH scores, with minimal risk of complications, including compartment syndrome. Mesh repair is favored for smaller fascial defects with the additional advantage of the obviated morbidity of the fascia lata flap harvesting. This case emphasizes the effectiveness of mesh repair in achieving complete resolution without complications or recurrence.

10:48 - 10:49

679 The Use Of A Cervico-Diaphyseal Angle Of 130° In Intramedullary Nails Increases The Risk Of Mechanical Failure In The Treatment Of Intertrochanteric Fractures.

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Abstract
OBJECTIVES
Analysis of the modifiable factors involved in the mechanical complications of intramedullary nail fixation in intertrochanteric hip fractures. The secondary objective is to evaluate the non-modifiable factors that may influence the stability of the osteosynthesis.
MATERIALS AND METHODS
An observational analytical retrospective case-control study was carried out. The cases referred to patients who presented mechanical complications after osteosynthesis of intertrochanteric fractures in our department from January 2016 to December 2024 (n=36). The controls were intertrochanteric fractures that were operated on along the first five months of 2023 (n=76).
RESULTS
106 patients were analysed (6 were lost during follow-up in the case group) with an average age of 83 years, 74% female, 83% living at home and 93% ambulatory; no differences between the groups.
The 2 most commonly-used implants were the PFNA (34%) and the Affixus (37%): PFNA presented significantly more mechanical failures. In the case group the percentage of 130° nails (77%) was significantly higher than in the control group (53%).
There were no differences in Tip-Apex or Calcar-Tip-Apex distances nor in the diastasis of the focal zone. Both the quadrant of cephalic screw placement and cortical thickness showed p-values close to the significance threshold, suggesting that significant differences may become apparent as the size of the control group increases.
CONCLUSIONS
The use of 130° cervico-diaphyseal angle implants may lead to a risk of mechanical failure in intertrochanteric fractures.
Also, a previous osteoporosis diagnosis that requires treatment becomes a risk factor for mechanical implant failure in intertrochanteric fractures.

10:49 - 10:50

680 Spondylolisthesis And Lumbar Scoliosis With Canal Stenosis Treated With Minimally Invasive Single Posterior Approach Surgery In A Patient With Psoriatic Arthritis And Chronic Corticotherapy.

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Abstract
INTRODUCTION & OBJECTIVES
Minimally invasive techniques have a shorter hospital stay with rapid functional and tissue recovery as well as reduced postoperative pain. A case is presented with stenosis of the spinal canal related to lumbo-pelvic disbalance and changes in the sagittal and coronal planes treated with minimally invasive surgery.
STUDY DESIGN & METHODS
Clinical case presentation.
RESULTS
A 58-year-old woman with psoriatic arthritis, chronic corticosteroid treatment and osteoporosis presented severe low back pain, right cruralgia, dysaesthesias in both legs and gait claudication.
Through imaging tests she was diagnosed with L3-L4 L4-L5 anterolisthesis and L5-S1 retrolisthesis with severe spinal canal and neural foraminal stenosis. Both dynamic and lumbar spine X-rays also revealed other secondary findings: lumbar scoliosis 16’6º, lumbar lordosis 13’5º, segmental lordosis L3-S1 1’9º and pelvic incidence 46’9º.
A minimally invasive posterior arthrodesis TLIF (Transforaminal Lumbar Interbody Fusion) L3-S1 is performed with transpedicular cemented screws and with trabecular titanium intersomatic boxes implantation.
This resulted in the complete disappearance of the symptoms and a significant improvement in restoring lumbo-pelvic balance: lumbar lordosis 50’7º, segmental lordosis 27’6º in the sagittal plane and 1’7º in the coronal plane.
CONCLUSION
Minimally invasive TLIF arthrodesis with cemented screws in patients with osteoporosis is a valid surgical option for lumbar decompression and stabilisation, reducing symptomatology, and even correcting deformity.

10:39 - 10:40

1152 Considerations For Non-Operative Treatment In Rare Bilateral Posterior Shoulder Dislocations

Tobias Troger, Sonja Cronenberg, Edwin Li, Corinna Schmid, Mathias Börner, Christoph Schwaller

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Abstract
Introduction: Bilateral posterior dislocations are extremely rare (1.3 cases/100'000 person-years, of which ca. 16% are bilateral), and most frequently caused by epileptic seizures, electrocution or trauma.

Methods: We present the case of a 32-year-old patient, who presented in the emergency department with bilateral shoulder pain after an unobserved fall with loss of consciousness while working at a high-voltage appliance.

Results: Conventional radiology revealed bilateral posterior dislocations. We promptly relocated both shoulders and immobilized both arms in neutral rotation, using a modified central abduction pillow. CT showed bilateral 1-part fractures according to the Neer classification. We opted for non-operative treatment according to the St.-Gall algorithm, permitting active internal rotation until abdomen of the less affected left arm, enabling the patient to feed himself - but the bilateral immobilization still greatly restricted this young patient's independency.
Neurologic work-up revealed a first episode of a generalized epileptic seizure to have caused the dislocations, suspected as part of a juvenile clonic epilepsy. There were no clinical or anamnestic signs for electrocution.

Conclusion: We recommend careful consideration involving the patient's expectations when treating bilateral posterior shoulder dislocations. Non-operative treatment versus bilateral shoulder arthroplasty offers the benefit of preserving a previously healthy joint - but results in a massive, albeit temporary dependency with extensive restriction of basic functions.

10:42 - 10:43

1156 Atypical Subsequent Bilateral Femur Fractures In Young Female Patient

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Abstract
Introduction: Osteoporosis is a well-known cause of low-energy fractures. Are we giving enough importance to the bone quality in younger female patients?

Methods: We present a case of a 47-year-old female patient, who presented in the ER with an atypical femur shaft fracture on the left side after stumbling and falling while walking.

Results: We treated the fracture with an intramedullary nail (LFN, Synthes). Basic hormonal laboratory work-up revealed normal values for the thyroid, alcalic phosphatase and Vitamin D. We discharged the patient after an uneventful postoperative period with basic osteoporotic therapy (calcium and vitamin D supplementation) and a planned outpatient endocrinology consultation within the national osteoporosis network, implemented in our country as part of the International osteoporosis foundation. The patient was feeling in such good condition, that she promptly returned to work and therefore rescheduled this consultation to 3 months later. In the week between the DEXA-scan and the pending endocrinology consultation, the patient fell again, contracting an atypical femur shaft fracture on the right side. We treated the fracture akin to the left side with an intramedullary nail (Gamma3 long, Stryker). Endocrinology work-up revealed osteopenia with a T-score of -1.3, warranting osteoanabolic treatment with Romosozumab. There have been no more fractures since.

Conclusion: Time to treatment in osteoporotic fractures is essential, as shown by this case. We strongly encourage prompt diagnosis and treatment to prevent (further) fractures. We can facilitate this process by implementing standardized inclusion within the international osteoporosis foundation (capturethefracture.org).

10:45 - 10:46

1908 Simultaneous Bilateral Hip Arthroscopy For Femoroacetabular Impingement Syndrome: A Cohort Study With Preliminary Results

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Abstract

Introduction

Bilateral hip arthroscopy is increasingly used for the treatment of femoroacetabular impingement syndrome (FAIS), but the optimal approach remains debated. Simultaneous procedures offer advantages such as reduced anaesthesia exposure and shorter overall recovery times, while staged procedures may mitigate risks associated with prolonged surgical and anaesthesia durations. Previous studies have shown comparable improvements between the two approaches, with similar complication rates. This study aims to contribute to the body of literature on the safety and efficacy of simultaneous bilateral hip arthroscopy.

Methods

A cohort study of 15 patients (30 hips), with a mean age of 33 years, undergoing simultaneous bilateral hip arthroscopy for FAIS was performed. Patients were assessed preoperatively and postoperatively. Surgical procedure details, surgical time, anaesthesia time, and complications were recorded. The rehabilitation protocol for bilateral hip arthroscopy was also documented.

Results

Preliminary analysis suggests improvements in patient-reported outcomes, including the Modified Harris Hip Score (mHHS) and International Hip Outcome Tool (iHOT-12), compared to preoperative scores. While exact values are pending final analysis, early trends indicate outcomes comparable to those reported in staged procedures. Simultaneous procedures resulted in increased surgical and anaesthesia times compared to staged approaches.

Conclusions

Simultaneous bilateral hip arthroscopy appears to be as safe and effective as staged procedures, with similar functional outcomes and complication rates. Although surgical and anaesthesia times are longer for simultaneous procedures, the reduced total treatment time for bilateral FAIS may offer logistical benefits for select patients. Further prospective studies are needed to confirm these findings and refine patient selection.

10:44 - 10:45

1957 Artificial Intelligence In Early-Onset Scoliosis: A Scoping Review

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Abstract
Purpose: Early onset scoliosis (EOS) involves various spinal deformities in children under 10, posing challenges in diagnosis, risk assessment, and management. With its potential for serious long-term complications, timely intervention is vital. Recently, artificial intelligence (AI) and machine learning (ML) have been transformative in orthopaedic care by enhancing diagnostic accuracy, forecasting progression, and informing treatment. This scoping review examines current AI applications in EOS.

Methods: Following PRISMA-ScR guidelines, a systematic scoping review was conducted to identify articles addressing the creation, application, or validation of AI models aimed at diagnosing, managing, or predicting clinical outcomes in EOS.

Results: After removing duplicates, 353 references were identified, 23 were evaluated in full, and 12 were included. Most studies (58.3%) utilised convolutional neural networks (CNNs) such as Mask R-CNN, EfficientNet, and U-Net. Other approaches included ensemble models (8.3%), sparse additive machines (16.7%), and unsupervised clustering (8.3%). Image analysis was the primary focus in 66.7% of studies, looking at automated radiographic measurements (Cobb angle, skeletal maturity staging) and device monitoring (growing rod length). Predictive modelling, in 33.3% of the research, predicted outcomes including prolonged hospital stays, unplanned reoperations, and postoperative complications, overall, reported model accuracies averaged 85.4%. 25% of studies discussed clinical integration, and common limitations included small sample sizes, single-centre data, and limited external validation.

Conclusion: While AI shows promise in enhancing EOS management, translational gaps remain due to methodological heterogeneity, inadequate guidelines, and limited external validation. Future research should focus on standardised reporting, leveraging larger datasets, and conducting real-world trials.

10:56 - 10:57

1974 3D-Printed Polycaprolactone-Hydroxyapatite-Tricalcium Phosphate Bone Scaffolds For Patient-Specific Bone Defect Reconstruction: An In Vitro Study

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Abstract

Introduction, Aims & Objectives:
Three-dimensional (3D) printing offers a versatile solution to produce patient-specific bone scaffolds with tailored shapes, sizes, and porosity, which is crucial for repairing complex large bone defects. Typically, these scaffolds are made from a biodegradable polymer-ceramic composite, e.g. polycaprolactone-hydroxyapatite (PCL-HA) or polycaprolactone-tricalcium phosphate (PCL-TCP). Previous research has indicated that combining HA and TCP can enhance the scaffolds' mechanical and biological properties. Therefore, this study explores various PCL-HA-TCP (PHT) mixtures to optimise 3D-printed bone scaffolds.

Study Design & Methods:
Our in vitro comparative study investigated four compositions of PHT composite (PHT90/6/4, PHT70/18/12, PHT50/30/20), with PCL as a control. These novel 3D-printed bone scaffolds underwent O2 plasma surface modification and characterised. Biocompatibility and osteogenic regenerative capacity were investigated using human adipose-derived mesenchymal stem cells (ADSC) for 28 days (n=4 per group).

Results:
Material characterisation revealed that higher ceramic content increased printing temperature (from 120°C for PCL to 180°C for PHT50), with varying pressure range due to increased viscosity (confirmed by rheology test). Moreover, higher ceramic content corresponded to increased mechanical properties and wettability, which are desirable for bone tissue engineering. These were corroborated by increased ADSC proliferation capacity (indicated by DNA quantification-Picogreen, metabolic activity-Prestoblue assay) and ADSC osteogenic differentiation (bone mineralisation-Alizarin red staining, Alkaline Phosphatase (ALP) activity assay, and gene expression analyses using PCR for RUNX2, COL1A1, osteopontin, osteocalcin).

Conclusion
This study contributes valuable insights into optimising composite materials for 3D-printed bone scaffolds, addressing critical considerations for effective bone defect reconstruction.

Keywords: 3D printing; bone scaffolds; tissue engineering

10:33 - 10:34

1985 Arthroscopic Pull Out Suture Technique For Tibial Spine Avulsion Fractures

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Abstract

Introduction

ACL avulsion at the insertion site can lead to tibial eminence fractures. Treatment varies depending on the fracture type.Early surgical intervention is crucial for Type III and IV fractures to prevent non-union or knee instability.

Aim and Objectives

The Aim of the study is to asses the functional outcome of Tibial spine avulsion fractures treated using Arthroscopic pull out suture technique .

Study Design & Methods

The study was conducted in Stanley Medical College Hospital, India. Ten patients admitted in our hospital were included in the study. Anterolateral portal and anteromedial portals made. The crater in the tibial plateau was identified. Using first pass 2 sutures taken using fiber wire(2-0) and Ethibond in the 2 portals. Tibial tunnel created after inserting guidewire at 55° angle using tibial zig. With the help of fiber wire , ethibond is taken through tunnel and sequential knots applied and tightened. Postoperatively, the knee was immobilized in an extension brace for 2 weeks. Partial weight bearing was allowed after 6 weeks and full weight bearing was allowed after complete fracture union.

Results

Union was achieved in all the cases . This technique aims to achieve anatomical reduction and restoration of ACL continuity. Promising functional outcomes were reported in all the cases. No complications were reported in any of the cases.

Conclusion

Arthroscopic pull out suture technique is a cost effective and simple technique for tibial eminence avulsion fractures. This technique also helps in early mobilization and return to activity.

Keyword

Tibial spine, Arthroscopy

10:36 - 10:37

1048 The Greater Tuberosity-Inferior Glenoid Index: A Reliable And Clinically Significant Radiographic Method After Reverse Total Shoulder Arthroplasty

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Abstract
Introduction:
Postoperative radiographic assessment after reverse total shoulder arthroplasty (RSA) commonly uses measurements sensitive to variations in X-ray positioning, such as the critical shoulder angle (CSA) and acromio-humeral interval (AHI). To improve accuracy, we propose a novel measurement using fixed anatomical landmarks: one line connecting the acromion and greater tuberosity (AGT), and another connecting the greater tuberosity to the inferior glenoid/glenosphere (GTIG), forming the "theta angle." This study evaluates the reliability and clinical relevance of these novel parameters at a minimum 2-year follow-up.

Methods:
We analyzed pre- and 3-month postoperative radiographs of 125 RSA patients. Three orthopaedic surgeons independently measured AHI, CSA, AGT, GTIG, and theta angle; inter-observer reliability was assessed using intraclass correlation coefficients (ICC). Clinical outcomes measured at 2-year follow-up included range of motion (ROM), isometric strength, Oxford Shoulder Score, and patient satisfaction. Correlations between radiographic parameters and clinical outcomes were evaluated.

Results:
Preoperatively, GTIG demonstrated excellent reliability (ICC >0.9), while AGT, CSA, and theta angle showed good reliability (ICC 0.7–0.9). AHI exhibited poor reliability. Postoperatively, GTIG, CSA, and theta angle retained good reliability; however, reliability of AGT and AHI decreased. At 2-year follow-up, GTIG significantly correlated with improved forward flexion (R=0.304, p=0.021) and abduction strength (R=0.313, p=0.018). Changes in theta angle significantly correlated with increased flexion (R=0.356, p=0.007), abduction (R=0.349, p=0.008), and improved Oxford Shoulder Score (R=0.263, p=0.035).

Conclusion:
GTIG and theta angle measurements provide reliable and clinically relevant radiographic assessment after RSA, correlating effectively with functional outcomes. Future validation with 3-dimensional imaging is recommended.

10:32 - 10:33

2423 Characteristics Of High-Energy Trauma In Elderly Individuals Aged 80 And Over

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Abstract
Aims & Objectives
This study analyzed 460 high-energy trauma cases involving patients aged 80 and over who were admitted to an emergency center between 2010 and 2024 (261 males, 199 females) to examine injury characteristics.
Results
The most common injury mechanisms were falls from stairs (114 cases) and pedestrian-vehicle collisions (111 cases).
• Falls from stairs had a nearly equal male-to-female ratio (56:58) and commonly caused head injuries (52 cases) and cervical spine injuries (44 cases), with fewer cases of proximal femoral fractures, distal radius fractures, and lumbar spine injuries.
• Pedestrian-vehicle collisions showed a higher incidence among women (43 males, 68 females) and frequently resulted in head injuries (74 cases), chest injuries (64 cases), pelvic ring fractures (64 cases), and tibial fractures (50 cases). Proximal femoral fractures, distal radius fractures, and lumbar spine injuries were less common.
• Falls from stairs generally resulted in lower injury severity compared to pedestrian-vehicle collisions. No correlation was found between age and injury severity. Although women make up about twice the population of men aged 80 and over, falls from stairs occurred almost equally between genders, likely due to gender differences in alcohol consumption.
Conclusion
Overall, these high-energy injuries in the elderly displayed distinct patterns compared to typical fall-related injuries.

10:37 - 10:38

2467 Does A New Implant Always Mean Better Results?

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Abstract
OBJECTIVE
To analyze and compare the clinical outcomes, progression, and postoperative complications in patients who underwent surgery for proximal femur fractures using TFNA and PFNA intramedullary nails.
METHODS
A retrospective, observational study was conducted on 295 patients treated at our center for proximal femur fractures. Two groups were compared: those operated on with PFNA and TFNA nails between 2010 and 2021. The minimum follow-up period was six months. Demographic, clinical, and radiological data were collected pre- and postoperatively (reduction, TAD, TAD calcar). Complications and re-surgery rates were recorded in both groups.
The mean age was similar between groups: 81.4 years for TFNA and 82.9 years for PFNA. Women comprised 74.57% of the sample. Fractures were classified according to the AO system, with most being type 31.A2 (42.7%), followed by 31.A1 and 31.A3. Most nails were short.
RESULTS
The overall complication rate was 10% in both groups, though the causes differed. PFNA had more lateral thigh discomfort requiring cephalic blade removal (7 vs. 1), fewer nail breakages (1 vs. 4), fewer cut-outs (1 vs. 9), fewer cut-throughs (3 vs. 5), more distal femur fractures (3 vs. 1), and more wound infections (2 cases). Most complications occurred in A2 fractures.
Re-surgery was required in 29 patients: 13 TFNA and 9 PFNA nails were removed, and 5 PFNA cases required blade extraction.
CONCLUSION
Both implants achieve excellent outcomes. However, PFNA appears to have fewer severe mechanical complications (cut-out, cut-through, implant breakage) and required fewer re-surgeries. Further studies are needed to confirm these findings.

10:54 - 10:55

3133 SILVER NANOPARTICLES COATING FOR ORTHOPEDIC IMPLANTS

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Abstract
Aim: the study evaluated the biocompatibility and efficacy of an innovative type of bacteriostatic coating based on silver nanoparticles (AgNP).
Methods: AgNP were deposited on either blasted or trabeculated pore structures of titanium samples by a wet-immersion method.
Characterisation: treated samples were observed by selective electron microscopy (SEM) and energy dispersive X-ray analysis (EDX) at high magnification.
AgNP coated samples were tested for biocompatibility according to ISO 10993. Specifically, local effects on rabbit bone tissue were evaluated after 12w implantation time. A search was made for possible traces of AgNP accumulated in internal organs in the long term (52w).
Antibacterial efficacy was assessed by measuring the inhibition diameter alone in the agar medium terrain containing Planktonic Staphylococcus Aureus (PKSA) around the AgNP coated specimens. PKSA was isolated from an emo culture from a patient who developed sepsis following prosthetic joint infection. The PKSA load was 108 CFU/ml.
Results: SEM-EDX analysis confirmed homogeneous dispersion of isolated AgNP for both the titanium surface tested.
Biocompatibility tests confirmed that no local toxic effect was observed in the implantation test for AgNP coated specimens. Histological examination of internal organ tissues didn't reveal AgNP. Traces of AgNP were at the detection limit for ICP analysis on extracted serum.
Local bone tissue apposition to the specimens, its remodelling and maturation at 12w confirmed that the osseointegrative properties of the titanium surface were preserved despite the AgNP coating. The efficacy of the AgNP coating was confirmed by the diameter of the inhibition alone (7-13mm) visible near the coated samples.
Ref. M.Fini; T. Lazzarotto;

10:55 - 10:56

2206 Office Arthroscopy: Enhanced By The Use Of Wireless Arthroscopy Device (WAD)

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Abstract
Introduction:
Office arthroscopy is a minimally invasive tool for real-time joint evaluation, reducing the need for hospital-based procedures. Wireless arthroscopy devices further enhance efficiency, ergonomics, and procedural flexibility. In our clinic, their integration has significantly improved patient outcomes and workflow. This study highlights our positive experience with wireless office arthroscopy.
Methods:
We retrospectively analyzed patients who underwent wireless office arthroscopy in our clinic. Key factors assessed included procedural efficiency, diagnostic accuracy, patient satisfaction, and workflow integration. Visualization quality, ease of setup, and surgeon mobility were also compared to traditional wired systems.
Results:
Wireless arthroscopy improved procedural efficiency by reducing setup time and enhancing surgeon maneuverability. The high-definition imaging system allowed for superior visualization and real-time patient education. Patients reported high satisfaction due to reduced discomfort and immediate diagnostic feedback. The absence of cables minimized infection risk and enabled flexible display positioning. Our workflow became more efficient, increasing patient throughput and optimizing resource use.
Conclusion:
Our experience with wireless office arthroscopy has been highly positive, demonstrating improvements in efficiency, visualization, and patient experience. The ability to perform high-quality diagnostic and therapeutic procedures in a clinic setting enhances orthopedic care while reducing costs. Future advancements, including AI and telemedicine integration, will likely expand its role in musculoskeletal diagnostics.

10:31 - 10:32

2730 Is Subvastus Approach Superior To Parapatellar Approach In Simaltaneous Bilateral TKR

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Abstract
Objectives: Medial para-patellar is common approach for TKA; Subvastus approach is technically demanding and
spares the quadriceps mechanism. Does the subvastus approach significantly improve outcomes compared to medial
para-patellar approach in simultaneous bilateral total knee arthroplasty (SBTKA)? Methods: The study conducted
on 100 patients between Jan 2018 to June 2019 matched in base demographics and clinical parameters divided
in two equal groups; medial para-patellar approach and subvastus approach. VAS and PROM assessed in early
post-operative period. Functional outcomes assessed using WOMAC scores and KSS postoperatively up to 01
year. Results: VAS at 3rd week was significantly higher in para-patellar group. At 3 weeks, 6 weeks and 3 months
follow-up WOMAC score was higher and KSS was lower in para-patellar group. At 06 months and 01 year both
WOMAC and KSS scores were similar. Measured functional outcomes were consistently better in subvastus group.
Conclusion: Subvastus approach had less post-operative pain, faster recovery and better functional outcomes
after surgery as compared to medial para-patellar approach in early post-operative period. There was no difference
in outcomes at 01 year. The complication rates, transfusion rate, hospital stay, requirement of physiotherapy
and rehabilitation was similar for both groups. We conclude the subvastus approach significantly improves early
outcomes in SBTKA cases.
Keywords: KSS, Medial para-patellar, Subvastus, TKA, PROM