SAOA 2022

POSTER ABSTRACTS
13:30 – 13:45
EXHIBITION HALL 10
E-POSTER
PRESENTATIONS

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E1. Traumatic Inferior Shoulder Dislocation (Luxatio Erecta Humeri): Case Reports and review of literature

Category: Shoulder and Elbow

Presentation: E-poster

Pududu Archie Rachuene (Dr George Mukhari Academic Hospital, Sefako Makgatho Health Sciences University) , Nkosiphendule Mzayiya (Dr George Mukhari Academic Hospital, Sefako Makgatho Health Sciences University) , Happy Masipa (Dr George Mukhari Academic Hospital, Sefako Makgatho Health Sciences University)

Background

The luxatio erecta humeri (LEH) is a rare kind of shoulder dislocation that accounts for fewer than 5% of all shoulder dislocations. It usually occurs after a fall with the arms lifted. After observing three cases at our hospital, we decided to perform a literature analysis to assess the associated and concomitant injuries that occur with LEH, as well as the clinical outcomes.

Case report

We present case studies of traumatic LEH in male patients. Cases 1 and 2 both had concomitant lower limb injuries, whereas Case 3 had a brachial plexus injury. In all cases, traction-countertraction was used to successfully execute emergent closed reduction. At 18 months of follow-up, Case 2 reported instability and persistent pain. Case 1 had a greater tuberosity fracture that was successfully treated non-surgically.

Discussion

Although inferior shoulder dislocations are rare, concomitant and associated injuries are not uncommon. Nerve and intrinsic shoulder injuries are frequently observed in inferior shoulder dislocations. Following a closed reduction and a brief period of immobility, the outcomes are generally favorable. Capsular repair is an effective treatment for instability and recurrence.

Conclusion

In patients presenting with inferior shoulder dislocation, clinicians should be aware of clinical characteristics, reduction maneuvers, and concomitant intrinsic shoulder injuries.

E2. The academic hospital fire: Our orthopedic surgery disaster management and lessons learnt

Category: General

Presentation: E-poster

Lunga Mbuqe (Chris Hani Baragwanath Academic Hospital) , Mmampapatla Ramokgopa (Chris Hani Baragwanath Academic Hospital) , Maxwell Jingo (Chris Hani Baragwanath Academic Hospital) , Collen Nkosi (Chris Hani Baragwanath Academic Hospital)

Title

The academic hospital fire: Our orthopaedic surgery disaster management and lessons learnt Introduction

Mass casualty occurrences are extremely unusual, and many hospitals and huge trauma centres have never seen one. On April 16, 2021, a terrible fire forced the evacuation of over 800 patients from Johannesburg's urban academic hospital. This report aims to review the orthopaedic doctor's experiences and to provide insights for the formulation of response measures for similar incidents in the future.

Methods

A retrospective review study of orthopaedic patients who were admitted at Chris Hani Baragwanath academic hospital (CHBAH) from the 01 April to 30 April 2021, the month of the fire incident. Data were obtained from the hospital casualty register, inpatient registers, and outpatient registers. Data were compared before and after the fire incident.

Results

Transfer was provided to 51 patients to CHBAH orthopaedic emergency unit. Forty-three (84.3%) were adult patients and eight (15.7%) were paediatric patients. There were fewer daily admissions to orthopaedic emergency unit in the last 15 days of the month of the disaster compared to the first 15 days, when the 51 cases from Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) were excluded (mean: 12.89 versus 13.26). The orthopaedic outpatient department doctor to patient ratio improved after the fire incident.

Conclusion

Disaster preparedness, as well as the commitment of orthopaedic staff members and hospitals, resulted in optimal care for the patients involved.

E3. Giant cell tumours of the foot : A case report and literature review

Category: Poster

Presentation: E-poster

Aftab Younus (Helen Joseph Hospital) , Mmathapelo Lewele (Helen Joseph Hospital) , Mohammad Aftab (Helen Joseph Hospital) , Kerry Bodenstein (Helen Joseph Hospital)

Introduction:

Only 3-5% of giant cell tumours occur in the foot, and even here they tend to occur in the forefoot, with hindfoot giant cell tumours being a rarity. While relatively common overall, their exact nature, as to whether they are truly neoplastic or simply inflammatory, is a subject of significant controversy.
They are benign slow growing lesions, best treated with gross total excision under magnification. Despite their subcutaneous nature, they can become markedly infiltrative, and unless completely excised exhibit recurrence rates of between 14% and 44%.

Case presentation:

We present a 54-year female presented with a large mass (14cm x 11cm) on the dorsum and medial aspect of her left foot of an alarming size. While the lesion was largely symptomatic, she has difficulty in wearing shoes and denies difficulty or pain on walking. She was HIV negative. Investigations included blood test, X-ray and MRI scan of the left foot.

Result:
She was offered surgery for functional reasons. An 8 cm longitudinal incision was made over the dorsum of the left foot with lazy S skin incisions. Using magnification, the tumour was dissected free from the extensor tendon mass, with special attention to tumour edges to ensure a gross total resection had been achieved. We were able to achieve a gross total excision of the tumour. The histology result showed Giant cell tumour of the foot.

Discussion:
Giant cell tumours of the extensor tendon mass, is found in the subcutaneous tissue plane arising from the tendon sheath, with extensions that infiltrate over and under the surrounding structures. The neurovascular bundle is often found displaced by the tumour mass, and hence the importance of magnification is proposed to make separation possible. According to our review of the PubMed literature, this is the largest giant cell tumour described in this location.

E4. Traumatic pseudoaneurysm of the superficial palmar arch

Category: Hands

Presentation: E-poster

Charles Theron (Chris Hani Baragwanath Hospital/Wits)

Pseudoaneurysms in hands are rare entities with only a few reported cases in English literature. The majority of these lesions arise from penetrating trauma, previous surgery or arterial puncture.
Pseudoaneurysms are frequently missed and a high clinical suspicion is essential to make the correct diagnosis in a timely manner. We present a case of a traumatic pseudoaneurysm of the superficial palmar arch in a 17 year old CP child following a fall. The patient had a delayed presentation and was initially misdiagnosed as a palmar abscess. An ultrasound and CT- angiogram was done to confirm the diagnosis of a superficial palmar arch pseudoaneurysm. The patient was treated surgically and had uneventful wound healing. It is important to include pseudoaneurysms in the differential diagnosis for patients presenting with palmar masses.

E6. Expression of tumour necrosis factor-a in TB spine granulomas: a search for host directed therapies

Category: Spine

Presentation: E-poster

Mthunzi Ngcelwane (Univ Of Pretoria) , meshack bida (nhls and univ of pretoria) , hlumani ndlovu (univ of cape town)

EXPRESSION OF TUMOUR NECROSIS FACTOR-α IN TB SPINE GRANULOMAS: A SEARCH FOR HOST DIRECTED THERAPIES.
download

Multidrug resistant TB is reported at 4% in spine TB. Mortality in MDRTB is reported to be equivalent to that of TB in the pre-antibiotic era. Causes of drug resistance include inadequate doses, erratic drug ingestion. inadequate duration of treatment. All these are related to poor socioeconomic status where patients stay far from source of treatment. For this reason, research in TB treatment is looking at reducing the duration of drug treatment by directing the therapy to the host. Host directed therapies are targeted at the host's immune system. This study is aimed at assessing the expression of the cytokine TNF-α in spine TB granulomas of different immune competency. TNFα could then be used as host directed therapy in those granulomas with deficient TNF-α.
Method: Tissue from TB spine patients undergoing decompression surgery for TB spine was taken for histology and histochemistry to assay TNF-α expression. The TB granulomas were graded according to the appearance of the immune cells. The paraffin-embedded tissue was stained with anti-TNF antibodies and examined under a confocal microscope. Mean Fluorescence Intensity was used to measure the expression of TNF-α.
Results: There were 18 granulomas in group 1&2 and 25 in group 3&4. The TNF expression using MFI was as follows:
Grd1&2 granulomas. Mean 39.79±3.37[32.67-46.91]
Grd 3&4 granulomas. Mean 43.89±2.06[39.15- 47.63], p=0.37
Although there is no statistically significant difference, the scatter graph shows that for the grade 1&2 granulomas, the MFI is on the lower end of the scale, suggesting that these granulomas have less amount of TNF-α.
Conclusion: Although not conclusive, the results suggest that TNF-α can be used in the patients whom at biopsy we find to have more of the immune-incompetent granulomas.

E7. Immune factors in the distribution of the disease in HIV negative and positive patients with TB spine

Category: Poster

Presentation: E-poster

Mthunzi Ngcelwane (Univ Of Pretoria) , meshack bida (nhls and univ of pretoria) , hlumani ndlovu (univ of cape town)

Background: The hallmark of TB infection is necrotizing granulomatous inflammation, composed of epithelioid histiocytes surrounding a central necrotic zone. The major function of epithelioid histiocytes is to contain the infection to a localized area. and to concentrate the immune response to a limited area. HIV co-infection decreases the body's ability to contain the mycobacteria, by inhibiting the epithelioid cells and cytokine responses. There are reported differences in the expression of the disease in terms of skip lesions, extent of bone destruction and pus formation. The immune system is reported as the cause of the differences between HIV- and HIV+ patients. The study was undertaken to assess the granulomas and cytokines in HIV- and + patients.

Method: Tissue for histology and histochemistry was taken from patients undergoing surgery for TB spine. The granulomas were graded from 1 to 4 according to the arrangement of the immune cells. TNF-α was measured using Mean Fluoresce Intensity under a confocal microscope.

Results: 25 specimens had Grd1&2 granulomas, with 9 HIV- and 16 HIV+. 30 had grd3&4 granulomas, 8 HIV- and 22 HIV+. There was no statistically significant difference in the distribution of the two groups of granulomas between HIV- and HIV+ patients.(p=0.64).

TNF-α in HIV- :42.74±4.9 [31.9-53.5] and in HIV+: 42.54±2.16 [38.1- 46.9] , p=0.97

Conclusion: In this cohort we found no difference in the arrangement of the immune cells in the granuloma and in the expression of TNF-α between the HIV- and HIV+ patients. We think the reason for this is the fact that the HIV+ patients had effective antiretroviral treatment with 70% of them having a viral load of zero.

E8. Wide Awake Local Anaesthesia No Tourniquet in SA: How to start WALANT Practice in South Africa

Category: Hands

Presentation: E-poster

Odette Koch (Dr O Koch Ortopediese Chirurg Ingelyf)

The concept of performing surgery in the outpatient department is a paradigm shift. WALANT surgery is advancing worldwide. The inception of WALANT procedures at an institution in South Africa had a fruitful and financially beneficial result.

Results of the successful implementation of WALANT:

- Positive patient experience
- Reduced waiting time for elective surgery
- ASA IV and geriatric patients received care
- Cost-effectiveness
- Outreach
- Paradigm shift
- Covid-19 Pandemic
- Prospects: Private practice and outreach

Implementing a new technique requires a successful, reproducible system to allow procedures to run smoothly and minimise complications.WALANT's possibilities are increasing, maintaining patients' best interests at heart and generating capacity to improve the surgeon's horizons in the field. The satisfaction of a pain-free patient, able to contribute to the procedure and experience the gratefulness of a finger that suddenly works makes wide-awake a game-changer. [video island style] In a country that buckles under economic pressure and patients disheartened by the long waiting lists and the excuse of the COVID-pandemic, wide awake surgery is the magic hat of hope for minor hand procedures.

E10. Cost effective use of 3D technology in Orthopaedic Surgery: is it possible?

Category: Hands

Presentation: E-poster

Johan Bosch (Frere Hospital) , Niel Bruwer (Frere Hospital) , Koshy Daniel (Frere Hospital)

Background:
Three-dimensional (3D) technology give surgeons the opportunity to do virtual surgery, practice procedures and use patient specific instrumentation to improve accuracy. This technology, however, is mostly used in centres with access to engineering expertise and expensive equipment. The goal is to prove that 3D technology can be used in resourced constrained centres, utilising open-source software and affordable equipment.
Methods:
This is a case study proposing a surgical technique making use of 3D modelling and patient specific guides for deformity correction at minimal cost. A patient was identified with a symptomatic distal radius malunion. Open-source software was used to perform the following steps: 1) conversion of DICOM (Digital Imaging and Communications in Medicine) file to a STL (Stereolithography) 3D model, 2) modelling and computer assisted design and 3) slicing that converts digital 3D models into instructions for printing. The ramp guide technique was selected based on a literature review as the most practical and accurate method. This entails digital reverse engineering of the malunited radius based on a mirror model of the contralateral radius. Surgery was performed using patient specific 3D printed guides to replicate the digital osteotomy, plate placement and deformity correction. A cost analysis was performed.
Results:
One case of a complex multiplanar distal radius malunion was successfully treated using 3D technology. 3D prototyping was done by clinical staff with no formal engineering or IT (Information Technology) training. The use of available resources kept cost to a minimum.
Conclusion:
3D technology in Orthopaedic Surgery is well established. Surgeons and training centres in the developing world will have to adapt to be part of this advancement. In this case study we developed a reproducible technique to implement cost effective clinician driven 3D technology. Software based planning, practice before surgery and accurate use of patient specific instrumentation proved valuable.

E.11 The impact of a decentralised orthopaedic service on tertiary referrals in Cape Town, South Africa

Category: General

Presentation: E-poster

Craig Brown (Khayelitsha District Hospital) , Tamlyn MacQuene (Centre for Global Surgery, Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University) , Daniel Hugo (Khayelitsha District Hospital) , Jacques Du Toit (Division of Orthopaedic Surgery, Department of Surgical Sciences, Faculty of Medicine and Health Sciences, Stellenbosch) , Mathew Alexander (Khayelitsha District Hospital) , Kathryn Chu (Centre for Global Surgery, Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University)

Background: In South Africa (SA), district hospitals (DHs) have limited capacity to manage the high burden of traumatic injuries. Scaling-up decentralised orthopaedic care could strengthen trauma systems and improve timely access to essential and emergency surgical care. Khayelitsha informal settlement in Cape Town, SA has the highest trauma burden of the Cape Metro East health district. The primary objectives of this study were to describe the impact of the Khayelitsha District Hospital (KDH) on acute orthopaedic services for the health district with a focus on the volume and type of orthopaedic services provided without tertiary referral.

Methods: This retrospective analysis described acute orthopaedic cases and their management from Khayelitsha informal settlement between 1 January 2018 to 31 December 2019. Operative and case management at KDH were described including the proportion managed without tertiary referral.

Results: In 2018-2019, 2402 acute orthopaedic cases presented to community health clinics in Khayelitsha informal settlement of which 2229 (92.8%) were referred to KDH and 173 (7.2%) directly to the tertiary hospital. Trauma (86.1%) was the most common mechanism for acute orthopaedic referrals. KDH performed 2040 orthopaedic operations over the 2 years, of which 91.3% were urgent or emergency cases.

Conclusions:
This study has shown that decentralised orthopaedic surgical services and scale-up of orthopaedic capacity at a DH, increased the accessibility of EESC and alleviated the high burden of referrals to its tertiary hospital. Further research on the barriers to scaling-up orthopaedic DH capacity in LMICs is needed to improve equitable access to surgical care.

E15. Carpal tunnel release using the WALANT technique vs general anaesthesia with tourniquet at a tertiary level hospital in the Free State, South Africa

Category: Hands

Presentation: E-poster

Lethokuhle Makhanya (University of the Free State) , Gideon Van Staden (University of the Free State) , Steven Matshidza (University of the Free State)

Introduction: WALANT is a well-recognized technique in upper limb surgery. Multiple different hand and wrist procedures have been successfully performed using WALANT with great outcomes and patient satisfaction. Most available studies however come from international publications, with very limited local data. We aim to reproduce the results of this available international literature by performing carpal tunnel releases under WALANT in a tertiary health institution in South Africa.

Methods: An interventional study with 18 participants aged between 39-83 years. 14 were females and 4 were males. They were randomised into 2 groups – a WALANT group and a general anaesthetic with tourniquet group. The operations were performed by a single surgeon using the standard open volar approach over a 6-month period at 2 local hospitals. The WALANT group was injected with 20cc of WALANT solution into the volar aspect of the wrist. The tourniquet group received a standard general anaesthetic (Propofol induction with LMA ventilation). A mid-arm pneumatic tourniquet was used and was inflated to 100mmHG above the systolic BP. Blood loss was estimated by counting the swabs used. Pain was graded using the Visual Analog Score.

Results: Median preoperative VAS was 8/10 for both groups. Median immediate postoperative VAS was 0 for the WALANT group, and 9/10 for the tourniquet group (p=0.0001158). Mean surgery time was 23 minutes for the WALANT group, and 16 minutes in the tourniquet group (p=0.0003199).
Blood loss was minimal in both groups, with no statistical difference in the total blood loss between the 2 groups.

Conclusion: WALANT is a safe, quick and cost-effective way of performing carpal tunnel releases. Blood loss is comparable to the use of a tourniquet, with superior immediate post operative pain scores, however the surgery time was slightly increased compared to the tourniquet group.

Keywords: WALANT; Carpal Tunnel Syndrome; tourniquet; Lignocaine