Welsh Orthopaedic Society Annual Meeting 2023

Best Western Heronston Hotel, Ewenny Road, Bridgend, CF35 5AW

Thursday 25th-Friday 26th May 2023

Abstract Booklet

Session 1 – Presentation 1

Use Of Monofilament Sutures And A Triclosan Coating To Protect Against Surgical Site Infections: A Lab Based Study

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Abstract

PURPOSE: We investigated bacterial propagation through multifilament, monofilament sutures, and whether sutures coated with triclosan would exhibit a different phenomenon.

METHODS: 1cm wide trenches were cut in the middle of Columbia blood Agar plates. We tested a 6cm length of two Triclosan coated (PDS plus®, Vicryl plus®) and two uncoated (PDS®, Vicryl®) sutures. Each suture was inoculated with a bacterial suspension containing methicillin-sensitive Staphylococcus aureus (MSSA), Escherichia coli (E.coli), Staphylococcus epidermidis (S.epidermidis), methicillin-resistant Staphylococcus aureus (MRSA) at one end of each suture. The plates were incubated at 36°C for 48 hours, followed by room temperature for 5 days, in a lab in King's Lynn, UK. We established bacterial propagation by observing for bacterial growth on the Agar on the opposite side of the trench.

RESULTS: Bacterial propagation was observed on the opposite side of the trench with both sutures, monofilament PDS and multifilament Vicryl, when tested with the motile bacterium (E.coli). Propagation was not observed on the other side of the trench with the monofilament PDS suture following incubation with MSSA and S.epidermidis, and in 66% of MRSA. With multifilament suture Vicryl, propagation was observed on the other side of the trench in 90% (MSSA), 80% (S.epidermidis), and 100% (MRSA) of plates tested. No bacterial propagation was observed in any of the triclosan coated sutures (monofilament or multifilament).

CONCLUSIONS: Monofilament sutures are associated in-vitro with less bacterial propagation along their course when compared to multifilament sutures. Inhibition in both sutures can be further enhanced with a triclosan coating.

Session 1 – Presentation 2

Pelvic binders in trauma patients – Are we doing it right at the only MTC in Wales?

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Abstract

Pelvic fractures are associated with high-energy trauma and immediate reduction and stabilisation may improve mortality. Pelvic binders are simple, potentially life-saving adjuncts to the care of major trauma patients. BOAST guidelines state that pelvic binders applied correctly at the level of the greater trochanters, appropriately reduce and stabilise unstable pelvic fractures. The main objective of this study was to identify the accuracy of pelvic binder placement in patients presenting to the Major Trauma Centre at the University Hospital of Wales.

A retrospective study was carried out, from September 2021 to March 2023, to assess the placement of the pelvic binders in relation to the greater trochanters, classified as high, trochanteric (correct), or low. Data including patient demographics, mechanism of injury, injury pattern, and outcome were also collected.

138 patients were identified as having a pelvic binder in situ on their initial trauma CT scan. The mean age of patients was 43 years (range 17-90), with 32 females and 106 males (ratio 1:3.3). In 54% of patients, the pelvic binders were positioned incorrectly, with both 27% being too low and 27% being too high, reducing their efficacy. In addition, as per BOAST guidelines, 88% of patients had a post-binder x-ray performed.

Inaccurately positioned pelvic binders provide suboptimal reduction and stabilisation of pelvic fractures. Further awareness and education for healthcare professionals involved in the application of pelvic binders is required. This study also highlights the need for regular audit of current practices as per BOAST guidelines.

Session 1 – Presentation 3

Comparative evaluation of native joint infections during COVID and pre-COVID period at a tertiary centre

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Abstract

Introduction: The short and long-term effects of covid infection are still being explored. Following a series of joint infections noted in patients presenting to a tertiary care hospital during the COVID-19 pandemic, we explored if there was any difference in the incidence of these joint infections when compared to pre-COVID era.

Aim: The aim of this study was to determine the incidence of native joint infections during COVID and pre-COVID period and compare the two groups for any differences.

Methodology: Patients diagnosed with septic arthritis over the 15th months of lockdown were studied and were compared with the same period prior to Covid-19 infection. The patient characteristics, the rate of septic arthritis, the presence of recent Covid-19 infection, delay in diagnosis and the difference in the microbiology between the two groups was studied.

Results: There were 36 joint infections during the COVID period in comparison to 46 joint infections during pre-COVID period. Both groups had similar mean age. Knee was the most common joint involved in both groups. About 50% (n = 18) of the joint infections during the COVID period did not grow any micro-organisms even after extended culture, which was higher in comparison to the pre-COVID group (35%, n = 16).

Conclusion: The culture negative group have significantly reduced markers of infection. The was no increase in the rate of septic arthritis however there was an increase in culture negative arthritis denoting a possible outbreak of reactive arthritis in the Covid-19 period.

Session 1 – Presentation 4

Is there a clinical and functional difference between using a Quadriceps tendon or quadrupled hamstring graft in ACL reconstruction?

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[1]Princess of Wales Hospital, Bridgend, Bridgend, United Kingdom. [2]Prince Charles Hospital, Merthyr, United Kingdom

Abstract

Introduction: Anterior cruciate ligament (ACL) injuries represent a significant burden of disease to the orthopaedic surgeon and often necessitate surgical reconstruction in the presence of instability. The hamstring graft has traditionally been used to reconstruct the ACL but the quadriceps tendon (QT) graft has gained popularity due to its relatively low donor site morbidity.

Methods: This is a single centre comparative retrospective analysis of prospectively collected data of patients who had an ACL reconstruction (either with single tendon quadrupled hamstring graft or soft tissue quadriceps tendon graft). All surgeries were performed by a single surgeon using the All-inside technique. For this study, there were 20 patients in each group. All patients received the same post-operative rehabilitation protocol and were added to the National Ligament Registry to monitor their patient related outcome scores (PROM).

Results: The average age of patients in the QT group was 29 years (16 males, 4 females) and in the hamstring group was 28 years (18 males, 2 females). The most common mechanism of injury in both groups was a contact twisting injury. There were no statistical differences between the two patient groups in regards to PROMS and need for further revision surgery as analysed on the National Ligament Registry.

Conclusions: The all soft tissue QT graft seems to be equivocal to quadrupled hamstring graft in terms of patient function and recovery graft characteristics. Further research may be needed to elucidate the long-term results of the all soft tissue QT graft given its recent increase in use.

Session 1 – Presentation 5

Virtual Joint School prior to Hip and Knee Arthroplasty: Patient Feedback and Carbon Footprint Savings

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Abstract

Patient education programmes prior to hip and knee arthroplasty reduce anxiety and create realistic expectations. While traditionally delivered in-person, the Covid-19 pandemic has necessitated change to remote delivery. We describe a 'Virtual Joint School' (VJS) model introduced at Ysbyty Gwynedd, and present patient feedback to it.

Eligible patients first viewed online educational videos created by our Multi-Disciplinary Team (MDT); and then attended an interactive virtual session where knowledge was reinforced. Each session was attended by 8-10 patients along with a relative/friend; and was hosted by the MDT consisting of nurses, physiotherapists, occupational therapists, and a former patient who provided personal insight. Feedback on the VJS was obtained prospectively using an electronic questionnaire.

From July 2022 to February 2023, 267 patients attended the VJS; of which 117 (44%) responded to the questionnaire. Among them, 87% found the pre-learning videos helpful and comprehensible, 92% felt their concerns were adequately addressed, 96% felt they had sufficient opportunity to ask questions and 96% were happy with the level of confidentiality involved. While 83% felt they received sufficient support from the health board to access the virtual session, 63% also took support from family/friends to attend it. Only 15% felt that they would have preferred a face-to-face format. Finally, by having 'virtual' sessions, each patient saved, on average, 38 miles and 62 minutes travel (10,070 miles and 274 hours saved for 267 patients).

Based on the overwhelmingly positive feedback, we recommend implementation of such 'Virtual Joint Schools' at other arthroplasty centres as well.

Session 1 – Presentation 6

Unnecessary Pretransfusion Blood Sampling In Trauma And Orthopaedics In Wales: A Sustainability Issue And Financial Burden

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Abstract

BACKGROUND

Theatre-listed trauma patients routinely require two 'group and save' blood-bank samples, in case they need perioperative transfusion. The Welsh Blood Transfusion Service (WBTS) need patients to have one recorded sample from any time in the last 10 years. A second sample, to permit cross-matching and blood issuing, must be within 7 days of transfusion (or within 48 hours if the patient is pregnant, or has been transfused within the last 3 months). The approximate cost of processing a sample is £15.00.

AIM

To investigate whether routine pretransfusion blood sampling for trauma admissions exceeds requirements.

METHODS

Electronic records were used to collect pretransfusion sampling data for all adult non-elective trauma patients listed for theatre under a trauma and orthopaedics consultant between 1/1/2023-31/1/2023. Data were collected on unnecessary samples, rejected samples and total excess samples.

RESULTS

113 patients (mean age[±SD] 64.09[±19.96]) underwent 132 procedures. On average, unnecessary sampling occurred at a rate of 0.48 samples per operation, equating to a cost of £945.00/month. Samples were rejected by the laboratory at a rate of 0.25 samples per operation. Common rejection reasons were 'patient date of birth discrepancy' (between sample and request form), 'patient address discrepancy' and 'signature discrepancy'. Overall, total excessive sampling occurred at a rate of 0.60 samples per operation.

CONCLUSION

Nearly half of trauma patients undergo unnecessary blood testing in anticipation of potential perioperative transfusion. This has implications for sustainability, financial cost and patient welfare. This signals poor understanding of WBTS requirements and is an area requiring improvement.

Session 2 – Presentation 1

Role Of Smartphone App System In Improving Patient Experience And Outcomes In Knee Arthroplasty

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Abstract

Introduction:

With advances in mobile application, digital health is being increasingly used for remote and personalized care. Patient education, self-management and tele communication is a crucial factor in optimizing outcomes.

Aims:

We explore the use of a smartphone app based orthopaedic care management system to deliver personalized surgical experience, monitor patient engagement and functional outcomes of patients undergoing knee arthroplasty.

Results:

Over a 12 month period, 124 patients listed for knee arthroplasty were offered access to the app. Average patient age was 65.4 years (range 49 to 86). 13(10.4%) patients were over 80 years. Compliance with app usage was 86.4%. Compliance with post-operative exercises increased following a message through the app. The mean Oxford knee score improved from a pre-op value of 17 to 35 at a mean follow-up of 6 months. Mean numeric rating scale pain score reduced from 7 pre-operatively to 3 at the latest follow-up. 58 patients (46.7%) used the communication feature on the app (text messages, photos, video consultations), reducing telephone calls and patient foot fall in the hospital. Patient satisfaction with the app was very high.

Conclusion:

We found the virtual care system to be effective in providing patient education, prehabilitation and post-operative rehabilitation along with being an effective channel of communication between patients and the hospital team. Patient satisfaction and compliance was very high.

Session 2 – Presentation 2

Outcome of treatment following primary arthroscopic repair of bucket handle meniscus tears in adults

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Abstract

Aims: We studied the outcomes following arthroscopic primary repair of bucket handle meniscus tears to determine the incidence of re-tears and the functional outcomes of these patients.

Methodology: Prospective cohort study. Over a 4-year period (2016 to 2020), 35 adult patients presented with a bucket handle tear of the meniscus. Arthroscopic meniscal repair was performed using either the all inside technique or a combination of all-inside and inside-out techniques. 15 patients also underwent simultaneous arthroscopic anterior cruciate ligament reconstruction. Functional knee scores were assessed using IKDC and Lysholm scores.

Results: Mean patient age at surgery was 27 years (range, 17 to 53years). Medial meniscus was torn in 20 and lateral in 15 cases. Zone of tear was white on white in 19, red on white in 9 and red on red in 7 cases. Average delay from injury to surgery was 4 months. At a mean follow-up of 4.5 years, the meniscus repair failed in 3 patients (8.5 %). Outcome following re-tear was meniscus excision. Average IKDC scores in patients with intact repair were 74.04 against 56.67 in patients with a failed repair ($p< 0.0001$). Similarly, Lyshlom scores were 88.96 and 67.333, respectively ($p<0.0001$).

Conclusion: The survivorship of primary repair of bucket handle meniscus tears in our series was 91.5% at medium term follow-up. Functional outcomes were significantly poor in patients with a failed repair compared to those with an intact repair

Session 2 – Presentation 3

Survivorship And Functional Outcomes Of FPV Patellofemoral Joint Replacements

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Abstract

Introduction

Isolated patellofemoral joint osteoarthritis affects approximately 10% of patients aged over 40 years and treatment remains controversial. The Femoro Patella Vialli (FPV) patellofemoral joint replacement, despite its widespread use, there are no studies evaluating long-term results with PROMs.

Aim

Evaluate long term functional and radiological outcomes following PFA

Methodology

A retrospective review of prospectively collected PROMS in patients undergoing Patellofemoral arthroplasty. Single centre trial between 2004 and 2008, 101 FPV patellofemoral arthroplasties were performed in 80 patients with isolated patellofemoral joint osteoarthritis. Data was collected as a part of routine follow-up for up to 6 years and additional long-term data was collected at 16 years.

Results

At 6 year follow-up the mean OKS was 29 and by 16 year follow up it was 26 which was not a statistically significant drop. 22 patients (29 knees) had died, 32 (32%) had been revised, 25 to total knee replacement using primary arthroplasty components. Mean OKS in the revised group was 27 which was not a statistically significant difference when compared to the unrevised group. Mean time to revision was 4 years. The cumulative survival analysis of the FPV implant was 76% at 5 years, 64% at 10 years.

Conclusion

Our findings suggest the FPV patellofemoral prosthesis provides good pain relief and clinical outcomes however, the survivorship for this particular implant maybe lower as compared to the available literature. Patient reported outcomes are maintained over the implant life and are no worse once revised implying a staged approach to arthroplasty is reasonable.

Session 2 – Presentation 4

A novel 3D-Printed Dual Mobility Implant – Results up to 7 years in clinical practice.

Stephen Jones, Sunil Raj, Ahmed Magan

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Abstract

INTRODUCTION:

Dual mobility (DM) is an enhanced stability bearing option in Total Hip Arthroplasty (THA). We report the early results of a CoCrMo alloy mono-block implant manufactured by additive technologywith a highly porous ingrowth surface to enhance primary fixation and osseointegration.

METHODS:

Prospective follow-up of the Duplex TM implant first inserted in March 2016 enrolled into Beyond Compliance(BC). Primary outcome measure was all-cause revision and secondary outcomes dislocation, peri-prosthetic fracture (PPF) and Oxford Hip Score (OHS). Patients were risk stratified and all considered to be high risk for instability. Complications were identified via hospital records, clinical coding linkage using national database and via BC website.

RESULTS:

159 implants in 154 patients with a mean age 74.0 years and a maximum F/U of 7 years. Survivorship for all-cause revision 99.4%. One femoral only revision. Mean gain in OHS 27.4. Dislocation rate 0.6% with a single event. Patients with a cemented Polished taper stem (PTS) had a Type B PPF rate of 2.1% requiring revision/fixation. Compared to conventional THA this cohort was significantly older , more co-morbidity and more non-OA indications.

DISCUSSION

This novel design has provided excellent early results in a challenging cohort where individuals are very different to the 'average' THA patient. NJR data on DM has reported an increase in revision for PPF. A "perfect storm" maybe created using DM in high-risk falls risk population. This re-enforces the need to consider all patient and implant factors when deciding bearing selection.

Session 2 – Presentation 5

Comparison Of Pain And Extent Of Anesthesia In Digital Blocks For Isolated Finger Lacerations: A Randomized Controlled Trial

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Abstract

Background

Digital injuries are among the most common presentations to the emergency department. In order to sufficiently examine and manage these injuries, adequate and predictable anaesthesia is essential. In this trial, we aim to compare the degree of pain and anaesthesia onset time between the two-injection dorsal block technique (TD) and the single-injection volar subcutaneous block technique (SV). Further, we describe the temporal and anatomical effects of both techniques for an accurate delineation of the anaesthetized regions.

Methods

A single-centre prospective randomized controlled trial involving patients presenting with isolated wounds to the fingers requiring primary repair under local anaesthesia. Patients were randomized to either the SV or TD blocks. The primary outcome was procedure-related pain. Further, we assessed the extent of anaesthesia along with the anaesthesia onset time.

Results

A total of 100 patients were included in the final analysis, 50 on each arm of the study. The median pain score was higher in patients who received TD block than in patients who received SV block (median [interquartile range] = 4 [2.25, 5] vs. 3 [2, 4], respectively, P = 0.006). However, anaesthesia onset time was not statistically different among the groups (P = 0.39). The extent of anaesthesia was more predictable in the dorsal block compared to the volar block.

Conclusion

The single-injection volar subcutaneous blocks are less painful with a similar anaesthesia onset time. Injuries presenting in the proximal dorsal region may benefit from the two-injection dorsal blocks, given the anatomical differences and timely anaesthesia of the region.

Session 2 – Presentation 6

Treatment Of Knee Osteoarthritis With Platelet Rich Plasma Injection – Does It Work?

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Abstract

Osteoarthritis (OA) was long thought to be due to degenerative changes brought on by 'wear and tear' however more recent studies suggest there are changes at a biologic and metabolic level that account for the disease process. Use of leucocyte poor - platelet rich plasma (LP PRP) has demonstrated effectiveness in slowing down the progression of symptoms. Our study investigates its application in our patient population to see if benefits are consistent and reproducible.

Patients were recruited using our inclusion criteria: aged 18-80, ability to provide consent, have hip or knee arthritis with grade 1-3 radiographic OA changes on X-ray and a BMI of under 35. Patients with instability, systemic disorders, infection or who are on regular anticoagulants were excluded. Patients received injections at 0,2 and 4 weeks. Oxford knee score, EQ VAS, EQ-5D and Pain VAS scores were collected at baseline, 2, 4, 12 and 26 weeks and analysed using statistical software.

Final number of patients for data comparison at 26 weeks was 28. Oxford knee scores at 26 weeks showed significant improvement compared to baseline 25.29 vs 16.36 ($P<0.001$) and exceeded the Minimal Clinically Important Difference (MCID). There was also improvement in pain VAS scores 64.07 vs 39.18 ($P<0.001$) and EQ VAS scores 66.43 vs 49.00 ($P<0.030$). EQ-5D values were trending towards improvement but did not reach statistical significance ($P=0.143$).

Improvements shown from our preliminary data mirror that of the current literature and offers a potentially cost-effective solution to delay the progression of osteoarthritis in our patient population.

Session 3 – Presentation 1

The Efficacy Of Distal Tibial Growth Modulation In The Treatment Of Paediatric Foot And Ankle Disorders: A Retrospective Study Of Cases From 2003-2022

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Abstract

Distal tibial growth modulation has emerged as an alternative treatment for paediatric foot and ankle disorders, such as CTEV. We analysed 205 cases, including only those where a plate or screw was fixed on the anterior surface of the distal tibia. By examining clinical and radiological records, we aimed to measure post-operative changes in dorsiflexion, the distal tibial angle, and the tibiocalcaneal angle.

We identified nine cases (nine feet) meeting the full inclusion criteria, comprising CTEV (7), arthrogryposis (1) and cavovarus foot (1). The cohort consisted of five males and four females, with a mean age of 10 years and 9 months at the time of surgery. A mean change in the distal tibial angle of 4.33 degrees was noted. Changes in dorsiflexion were documented in only one case: a change of 13 degrees. Our average distal tibial angle was significantly lower than reported in the literature, at 4.33 degrees. Most cases demonstrated an improved tibiocalcaneal angle. We assessed satisfactory patient outcomes using patient notes. Of the 6 procured notes, one patient has been discharged, and the rest are under 6-month or yearly follow-up; many are awaiting further procedures. The most common presentations at review are plantaris deformity and ongoing pain.

In conclusion, our study suggests that distal tibial growth modulation can be a safe and effective treatment option for selected paediatric foot and ankle disorders. Most of the reported cases in the literature involve small cohort studies; further research is needed to investigate the long-term outcomes of this procedure.

Session 3 – Presentation 2

Anterior Cruciate Ligament Injury Prevention Programs In Welsh Netball: Survey Of Knowledge, Implementation And Barriers Amongst Players And Coaches

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Abstract

Introduction: Perception of ACL injury prevention programs amongst professional netball players and coaches has not been studied. We investigated (1) level of awareness and experience of ACL injury prevention programs; (2) use of ACL injury prevention programs; and (3) barriers to implementing ACL injury prevention program in netball.

Methodology: Female netball players representing Welsh senior and under-21 teams and elite and amateur coaches were invited electronically to this web-based study between 1st May–31st July 2021. Information on ACL injury susceptibility and seriousness, knowledge, experience, and implementation of ACL injury prevention programs were ascertained.

Results: Twenty-eight players (77.8%) and 29 coaches (13.2%) completed the questionnaire. Seventeen (60.7%) players and 15 (51.7%) coaches reported female athletes were at greater risk for sustaining ACL injuries. Over 90% of respondents identified netball as high-risk, whilst 89% of players and 76% of coaches reported these injuries to be preventable. Two (7.1%) players and 6 (20.7%) coaches utilised ACL injury prevention programs with lack of time and engagement from coaches and players identified. Majority of respondents indicated that their club has neither promoted, advocated nor demonstrated exercises for ACL injury prevention. Over 90% of respondents would utilise such programs if it minimised players risk with appropriate training and information.

Conclusion: Study highlights limited knowledge of female athletes' increased susceptibility of ACL injuries with lack of communication and education of ACL injury prevention programs between sporting associations, coaches and players. Results demonstrate willingness of players and coaches to implement ACL injury prevention programs in Welsh netball.

Session 3 – Presentation 3

Do We Need Laminar Flow in Trauma?

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Abstract

Introduction: Laminar flow in theatres have become standard of care in orthopaedic implant surgery. Most of the evidence for laminar flow use is based on arthroplasty surgery with early studies showing significant reduction in infections. We conducted a retrospective comparative study to assess Surgical Site Infection (SSI) rates in consecutive patients undergoing surgery for trauma in laminar and non-laminar flow theatres.

Methods: Due to COVID restrictions our trauma care provision was restructured. This resulted in trauma surgery being performed in non laminar flow theatres. We identified consecutive patients who had trauma surgery pre and post pandemic from February 2019 to June 2021 to avoid selection bias. There were 1010 in laminar theatre group and 1000 in non-laminar theatre group. SSI rates within the first 90 days. The two groups were statistically similar in terms of age and gender of the patients.

Results: 28 patients developed surgical site infections in non-laminar flow theatres and 29 patients in laminar flow theatres. There was no significant difference between the SSI rate in laminar flow theatres (2.87%) , as compared to non-laminar flow theatres (2.80%) (p=0.92034). . There was no link between infections and duration of surgery. 2 patients in the laminar flow group were MRSA positive and were excluded.

Discussion: In our study, laminar flow theatres did not show a statistically significant reduction in surgical site infections. We conclude in the practical environment of trauma theatres, the theoretical advantage of laminar flow does not translate to an observable reduction of infections.

Session 3 – Presentation 4

Five-Year Mortality Following Traumatic Central Cord Syndrome in Wales

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Abstract

Aims

Traumatic central cord syndrome (TCCS) typically follows a hyperextension injury and results in a motor impairment disproportionately affecting the upper limbs. The primary aim of this study is to assess the five-year mortality of TCCS, and determine any difference in mortality between management groups or age.

Methods

Patients >18 years with TCCS between January 2012 and December 2017 in Wales were identified. Patient demographics and injury, management and outcome data was collected and statistically analysed.

Results

65 patients were identified (66.2% male, mean age 63.9 years), with average data collection at 6.3 years (SD:1.3) post-injury. At five-years follow-up, 32.3% (n=21) of TCCS patients were deceased. 6 (9.2%) patients had died within 31 days of their injury, however these patients were not significantly older than those that survived (p=.077, independent samples t-test). 69.2% (n=45) of patients were managed conservatively. Kaplan-Meier analysis revealed no significant difference in mortality between management types (log rank test, p=.819). However, there was a significant difference (p=.001) in mortality between the different age groups (<50years vs 50-70years vs >70years). At five-years follow up, 55.6% of patients >70 years at time of injury were deceased. Respiratory failure was the most common cause of death (n=9, 42.9%).

Conclusion

32.3% of patients with TCCS in Wales were deceased at five years post-injury. Management type did not significantly affect mortality, however age at injury did. Further work assessing the long-term functional outcomes of surviving patients is needed, to allow more reliable prognostic information and functional recovery predictions to be given.

Session 3 – Presentation 5

Tibial Plateau Fractures During Covid-19 In A Trauma Unit. Impact of Lockdown and The Pressures on the Healthcare Provider.

Authors:

Ali Amjad, Ram Mohan Raghavendra, Rhodr .Gwynn, Parag .Panwalkar, Karun.Veravalli, Mehdi. Tofighi, Rhys. Clement, Ali Mofidi.

Abstract:

The aim of this study was to access the impact of Covid-19 and lockdown on the incidence, injury pattern and treatment of tibial plateau fractures in a combined rural and urban population in wales.

Methods:

Retrospective study was performed to identify tibial plateau fractures in 15-month period of Covid-19 lockdown 15-month period immediately before lockdown. Patient demographics, injury mechanism, injury severity (based on Schatzker classification) and associated injuries, treatment methods and outcome of fractures in the Covid-19 period was studied.

Results:

The incidence of tibial plateau fracture was 9 per 100000 during Covid-19 and 8.5 per 100000 and both were similar to previous studies. The average age was 52 and female to male ratio was 1:1 in both control and study groups.

High energy injury was seen in only 20% of the patients and 35% in the control groups (χ^2=12, p<0025). 14% of the covid-19 population sustained other injuries as opposed 16% in the control group (χ^2=0.09, p>0.95).

Lower severity isolated lateral condyle fractures injury (Schatzker 1-3) were seen in 40% of fractures this was 60% in the control populations. Higher bicondylar and shaft fractures (Schatzker 5-6) were seen in 60% of the Covid-19 group and 35% in the control groups (χ^2=7.8, p<0.02). Treatment mode was not impacted by Covid-19. The complication rate was low in spite of higher number of complex fractures and impact of covid-19 pandemic.

Conclusion:

The associated injuries were similar in spite of significantly lower mechanism of injury. There were unexpectedly worst tibial plateau fracture based Schatzker classification in the Covid-19 period as compared to the control groups. This was especially relevant for medial condyle and shaft fractures. This was postulated to be caused by reduction in bone density caused by lack of vitamin D and reduction in activity. The treatment mode and outcome was not impacted by impact of Covid-19 on care for tibial plateau fractures.

Session 3 – Presentation 6

Return to Sport Following Closed Achilles Tendon Rupture: A Systematic Review and Meta-Analysis of Eligible Studies Evaluating Management Strategies, Patient Factors, and Level of Athletic Activity

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[1]Foundation year 1 Morriston Hospital, Swansea, United Kingdom. [2]Roberts Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust, Oswestry, United Kingdom

Abstract

Introduction

Achilles Tendon Rupture (ATR) is a prevalent injury in Western society. Recent research has focused on measuring surgical methods and strength regained, rather than practical measures such as Return to Sport (RTS). A systematic review was published in 2016 setting a benchmark RTS as 80%. The aim of this systematic review was to provide an up-to-date RTS following ATR.

Methods:

PubMed and SPORTdiscuss databases were used to search for eligible studies published since 2017 that focused on closed Achilles tendon ruptures with clear definitions of return to sport and a minimum length of follow-up. The Newcastle-Ottawa grading tool was used to assess risk of bias in all included studies.

Results:

Of 15 articles identified, 9 were 'good' and 6 were 'fair' after bias assessment. Return-to-sport (RTS) rate following Achilles tendon rupture was 76.76% (95% CI 74.19, 79.34 P= <0.001). Non-professional athletes had a higher RTS rate (78.29%; 95% CI 74.89, 81.68 P= <0.001) than professional athletes (74.91%; 95% CI 70.98, 78.85 P= <0.001). Surgical intervention resulted in a lower RTS rate (74.17%; 95% CI 70.74, 77.60 P= <0.001) than conservative management (70.00%; 95% CI 60.48, 79.52 P= <0.001).

Conclusion:

These findings highlight the need to identify factors affecting RTS rates, including the type of management, level of sport, and patient-specific factors. Clinicians can use these findings to guide informed shared decision-making with patients regarding the long-term implications of ATR and to develop more targeted rehabilitation strategies for this injury.