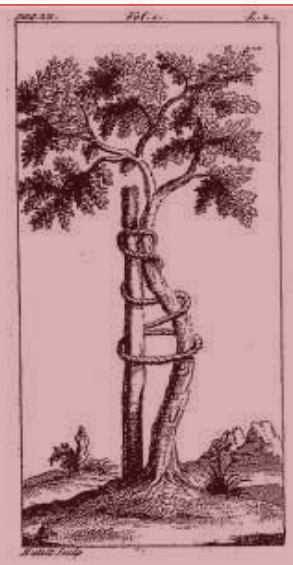
The president of the Cambridge Orthopaedic Club 2017 would like the pleasure of your company at the 35th annual meeting and dinner



Cambridge Orthopaedic Club

35th Annual Meeting

1st April 2017

0830 Academic meeting at the Keynes lecture theatre,
King's College
Kings Parade, Cambridge

1900 Evening Drinks Reception prior to Dinner in the Great Hall,
King's College,
King's Parade, Cambridge
Dress Code: Black Tie

President:
Mr. John Crawford

Agenda

830 -915	Registration and Trade stands
9.15	Welcome from Mr. John Crawford, CO Club President
0930	The training programme Mr. Phil Johnston, Training Programme Director
1000	**Registrar presentations session 1**

- ***New drug, new problem – do hip fracture patients taking NOACs experience delayed surgery, longer hospital stay, or poorer outcomes?***
  George Hourston, **Michael Barrett (ST6),** Wasim Khan, Madhavi Vindlacheruvu, Stephen McDonnell
  Addenbrookes

- ***'Fix and Replace', A novel advance in the treatment of elderly acetabular fractures***
  D'jon Lopez (ST8), Majid Chowdhry, Joseph Queally, Peter Hull, Andrew Carrothers
  Addenbrookes

- ***Intracapsular femoral neck fractures in young adults: a twelve-hour window for treatment?***
  Sibbel J (ST3), Phaily A, Chetty N, Kalairajah Y
  Luton & Dunstable university hospital

- ***Open lower limb fractures in Major Trauma Centers- a loss leader?***
  Arman Memarzadeh (ST6), Elizabeth Tissingh, Joseph Queally, Peter Hull
  Addenbrookes

1030	Tea and trade stands
1100	Mr. W. Shenk, Mr. R. Coomber: International training
1130	**Registrar presentation session 2**

- ***Developmental Dysplasia of the hip presenting between 12 and 18 months; medial open reduction or delayed anterior approach plus innominate osteotomy***
  Christopher Bache; Mohammad Shahid; Feiran Wu; **Rosamond Tansey (ST3)** Birmingham Children's Hospital, Birmingham, United Kingdom

- ***Diagnostic indicators of a hip effusion on plain film radiography in children: worth another look?***
  M. Dunne (ST4), D. Gill, M. Latimer
  Peterborough

- ***The First Worldwide Survey on Surgeon Preferences in the Management of Stiffness following Total Knee Arthroplasty***

K H Sunil Kumar (ST4), Georgios Mamarelis, Vikas Khanduja
Addenbrooke's

- *Long-term Follow-up of Patients Undergoing Tibialis Posterior Transfer: Is Acquired Pes Planus a Complication?*
  M. Pecheva (ST3), A. Devany, B. Nourallah, C. Pasapula
  Queen Elizabeth Hopital, King's Lynn

1230 Lunch at the trade stands and electronic posters
1330 **Nigel Coleman** (retiring trainer QEH, King's Lynn)
1350 **Registrar presentation session 3**

- **Post-code lottery? Is there variation in the allocation of *funding for lower limb arthroplasty between clinical commissioning groups in England?***
  Rachel Fischer ST3
  West Suffolk Hospital

- ***Swallowing Following C-spine Surgery (EAT -10)***
  Tom Marjoram (ST6), Tim Woodacre
  Ipswich Hospital Spine Unit.

- ***Long Term Outcomes Of Bladder, Bowel And Sexual Function In Post Operative Cauda Equina Syndrome Patients.***
  Devany Adam (ST6), Steele Nick, Marya Shivan, Gill Damien, Crawford Robert, Webb Ralph, Rai Amarjit, Lutchman Lennel
  Norfolk and Norwich University Hospital

- ***Smartphone surgical simulation for Transforaminal Lumbar Interbody Fusion (TLIF) procedure amongst orthopaedic registrars***
  Coomber R, Bahsoun A, Nehme J, Chow A and Bowditch M.
  Ipswich Hospital

- ***THR v Hemi for trauma***
  Aparna **Viswanath (ST7);** Anum Malik; Warwick Chan; Neil Walton
  Norfolk and Norwich

1505 Break – trade stands
1545 **Daniel Perry (Liverpool): *The Bernard Meggit invitational lecture***
1615 Prizes and acknowledgements,
Year group best poster and presentations
Cambridge Orthopaedic Club best presentation

1700 **Closing Remarks**

Podium Presentations

Registrar session 1

New drug, new problem – do hip fracture patients taking NOACs experience delayed surgery, longer hospital stay, or poorer outcomes?

George Hourston, Michael Barrett (ST6), Wasim Khan, Madhavi Vindlacheruvu, Stephen McDonnell

Background
Neck of femur fractures are common in the comorbid, often anticoagulated, elderly. Although underreported, novel and irreversible non-vitamin K antagonist oral anticoagulants (NOACs) may affect patient outcomes. We aimed to evaluate whether patients admitted with hip fractures on warfarin or NOAC therapy were at risk of operative delay, prolonged length of stay, or increased mortality.
Methods
We collected data for 845 patients admitted to our centre between October 2014 and December 2016. Multivariable linear regression analysis was performed to test the association between warfarin and NOAC therapy on time to surgery and length of stay. Variables included in the regression model were age, sex, admission Abbreviated Mental Test Score (AMTS), pre-fracture mobility, American Society of Anesthesiologists (ASA) score, fracture type, and operation type. Fisher's Exact Test was used to evaluate whether warfarin or NOAC therapy delayed surgery beyond 36 or 48 hours, or decreased 30-day, 6-month, or 12-month survival.
Results
Time to surgery was delayed in anticoagulated patients (p=0.028). NOAC therapy was independently associated with increased time to surgery beyond 36 hours (p=0.001), although not beyond 48 hours (p=0.355), whereas warfarin therapy was not associated with either. Anticoagulation did not increase length of stay (p=0.331). Warfarin therapy significantly reduced 30-day survival (p=0.007), but NOAC therapy did not (p=0.244). Neither warfarin nor NOAC therapy affected further survival.
Conclusion
NOAC therapy delays time to surgery beyond the NHS England 'Best Practice Tariff' in hip fracture patients. We aim to prospectively monitor these patients to investigate long-term outcomes.
Implication
Without a fast-acting NOAC antidote, policy must change to ensure delayed, safe surgery for patients on NOACs. Preoperative involvement of the haematology team is essential.

'Fix and Replace', A novel advance in the treatment of elderly acetabular fractures

Mr. D'jon Lopez (ST8)
Mr. Majid Chowdhry
Mr. Joseph Queally
Mr. Peter Hull
Mr. Andrew Carrothers

Addenbrooke's Hospital, Hills Road Cambridge. CB1 0QQ

Background:
Acetabular fractures occur in a similar patient cohort to that of hip fractures. The current NICE guidelines for the management of hip fractures suggest interventions that aim to facilitate early mobilization, and optimize clinical outcomes. However, treatment principles for acetabular fractures in the elderly differ vastly. There is currently no guidance in place for these injuries and minimal evidence to inform practice.
Our aim in this study is to offer a treatment regime that allows immediate weight-bearing and optimizes the outcome for these patients.
Methods:
Consecutive patients with acetabular fractures were offered 'Fix and Replace' surgery from September 2013.
The surgical technique involved simultaneous fixation of the acetabular fracture, followed by Total Hip Arthroplasty performed at the same sitting.
Pre-operative patient scores were obtained in the form of the Oxford Hip Score (OHS) and EQ-5D. These were then repeated at regular post-operative intervals
Results:
Thirty-two (32) consecutive patients were selected between 2013 and 2017. These included 27 patients with native acetabular fractures, as well as 5 peri-prosthetic acetabular fractures. The average patient age was 76.69 years-old. The youngest patient was 59 years-old, the oldest was 94 years-old. 20 Males were included, and 12 Females. Mean follow up time was 10.31 months. The longest period of post-operative follow up was 41 months. The average pre-operative OHS was 44.26, and 30.36 post-operatively. The average pre-operative EQ-5D 75 and 65 post-operatively. There were no related deaths, and no infections. There were 2 post-operative dislocations.
Conclusion(s):
By pursuing the goal of early mobilization with 'Fix and Replace' we were able to get these patients back to a good level of function.
Implications:
Like Hip fractures, acetabular fractures in the elderly should be treated in line with best practice recommendations. This study provides evidence for the use of the 'Fix and replace' in this regard.

Intracapsular femoral neck fractures in young adults: a twelve hour window for treatment?

Sibbel J (ST3), Phaily A, Chetty N, Kalairajah Y
Department of trauma and orthopaedics, Luton & Dunstable university hospital

Background
Intracapsular femoral neck fractures in young adults are high-energy injuries with potentially serious complications. It is recognised that operating quickly is preferable; however there is no consensus on what constitutes the optimum timeframe or fixation method. We evaluated the outcomes of these patients at our DGH over an eight-year period.
Methods
A large retrospective study looking at all patients between the age of 18 and 60 who sustained intracapsular femoral neck fractures and received surgical fixation between march 2006 and December 2014 at our hospital. Using patient notes and radiographs we recorded time to theatre, garden classification, fixation method, and failure (defined as avascular necrosis or non-union requiring re-operation). Patients with less than 1-year follow up were excluded.
Results
61 patients were included (m: 29, f:32). 27 patients received surgery in less than 12 hours; 34 in more than 12 hours. 19 patients' fractures were classified as either garden i/ii; 42 as garden iii/iv. Fixation involved either Targon plate (n=10), dynamic hip screw (n=27) or three cannulated screws (n=24). Complications occurred in 17 patients (27.8%) – 16 avascular necrosis, 1 non-union. 41% of all patients receiving surgery after 12 hours had complications compared to 11% when surgery occurred within 12 hours. Complication rate in early versus

late surgery respectively, subdivided by fixation: dhs – 14% vs 31%; Targon plate – 33% vs 86%; cannulated screws – 0% vs 40%.

Conclusions

Failure rates were much higher across all three methods of fixation when surgery was performed after more than 12 hours. Specifically in patients with garden iii/iv fractures, 13% of those who received earlier surgery (3/22) had complications versus 65% of those fixed later (13/20).

Implications

The latest meta-analysis (papakostidis, 2015) showed an association between non-union and timing of surgery more than 24 hours after admission, but no association between timing and avascular necrosis. Our study shows a delay of more than 12 hours is associated with avascular necrosis for all fixation methods, and especially for more severe fracture patterns. We must therefore re-explore the 24 hour window in the management of these injuries.

Open lower limb fractures in Major Trauma Centers- a loss leader?

Arman Memarzadeh (ST6), Elizabeth Tissingh, Joseph Queally, Peter Hull
Addenbrookes

Introduction:

Open lower limb fractures are resource intensive injuries. Regardless of the financing model, the cost of treatment is an important consideration for any healthcare provider.

Methods:

Open lower limb fractures treated at our centre were identified over a six-month period. Isolated open femur or tibia fractures were included as well as cases with multiple fractures. Direct inpatient care costs were calculated and income was reviewed for each case according to 'Healthcare Resource Group' (HRG) cost codes.

Results:

A total of 41 open lower limb fractures (32 patients) were identified. There were isolated open fractures in twenty-five and multiple lower limb open fractures in seven patients. Twenty-three patients (72%) were male and nine were female (28%) with an average age of 40 years (range 10–89 years). The fractures were classified according to Gustilo and Anderson (GA) and divided into two main groups; there were 13 mild and 28 severe open fractures. The median direct cost of inpatient treatment for open lower limb fractures was £19,189 per patient. There was a net gain of £6,288 per fracture in the mild group and a loss of £7,582 in the severe group. The total deficit was £149,545 over the six-month period for this cohort of 41 fractures.

Conclusion:

Open lower limb fractures are expensive to treat at a cost of approximately £19,200 per patient and associated with a significant loss of income in our MTC. Cost codes should reflect the complex and more expensive treatment of these patients to avoid the inadvertent financial 'penalties' of treating such patients. This study is the first to calculate the direct inpatient treatment costs of open lower limb fractures in a major trauma centre. It highlights the need for cost saving strategies and for appropriate remuneration in MTCs.

Registrar session 2

Developmental Dysplasia of the hip presenting between 12 and 18 months; medial open reduction or delayed anterior approach plus innominate osteotomy

Christopher Bache; Mohammad Shahid; Feiran Wu; **Rosamond Tansey (ST3)** MBChB
Birmingham Children's Hospital, Birmingham, United Kingdom

Purpose:

Several different surgical strategies exist for management of developmental dysplasia of the hip (DDH) presenting between 12 and 18 months of age. We aim to compare the radiological results of immediate medial approach open reduction (MAOR) with delayed surgery to 18-22

months such that concomitant anterior open reduction plus innominate (Salter) osteotmy can be performed (AORI).

Methods:

We retrospectively identified 20 patients presenting between 12 -18 months who underwent immediate MAOR by a single surgeon (average age 15.5 months). Modified Ludloff approach was used with ligamentum teres tenodesis. Hip spica applied for 12 weeks. We also identified 24 patients who presented later and underwent AORI between age 18 and 22 months (average age 20 months). Hip spica applied for 10 weeks. Patient radiographs were assessed by 3 reviewers to determine evidence of avascular necrosis AVN (Kalamchi and MacEwen), acetabular index, severin grade (for patients age 6 year and above). Need for secondary surgery was recorded. All surgeries performed by senior author.

Results:

Minimum follow up 4 years. MAOR group average FU 8.5yrs. AORI group 6.5yrs. Grade of dislocation at presentation comparable between groups. No cases of redislocation. At latest follow up, no statistically significant difference in terms of AVN or Severin grade although trend towards better results in MAOR group. Overall 98% Severin gd 1/2. Two cases of severe AVN (gd3/4) in AORI group. Single case of gd 2 AVN in MAOR group plus 2 cases of long leg dysplasia.

IN MAOR group 75% of patients required innominate osteotomy as secondary procedure for persistent dysplasia (AI > 30 degrees at 2 yrs).

Conclusion:

Both approaches lead to satisfactory radiological outcome with rate of severe AVN (gd2-4) less than 10%. Prolonged follow up will be necessary to assess final outcome. The majority of patients having MAOR after age 12 months will require innominate osteotomy at later stage. For this reason we would recommend MAOR only for patients presenting with acetabular index less than 35 degrees and before 15 months. Older patients and cases where AI >35 degrees should have surgery delayed until the operating surgeon feels that the boney pelvis is large enough to perform concomitant open reduction and innominate osteotomy.

Significance:

To the best of our knowledge this is the first study to specifically compare medial approach open reduction with anterior open reduction plus innominate osteotomy in this particular age range.

Diagnostic indicators of a hip effusion on plain film radiography in children: worth another look?

M. Dunne (ST4), D. Gill, M. Latimer
Peterborough

Plain film radiography is not the gold standard imaging technique for identifying a hip effusion. However, it´s almost certainly the most readily available imaging technique for the assessment of a child presenting with a painful hip in the hospital setting. Most hospitals provide a 24 hour radiography service whereas access to out of hours ultrasonography (US) and magnetic resonance imaging (MRI) is limited. Additionally, children under the age of 5 or 6 years old commonly require a general anaesthetic to acquire an accurate scan. Various studies in the past have referred to radiographic signs of a hip effusion. These studies pre-date modern digital radiology and it´s now very easy to make accurate measurements on plain film radiographs using the standard software packages provided.

Our aim was to see if the advent of digital radiology made these reported indicators a reliable way of detecting hip effusions in a paediatric population.

We performed a retrospective review of 92 patients presenting to our institution over an 8 year period with a suspected diagnosis of septic arthritis of the hip. 49 patients met our inclusion criteria and 4 measurements were carried out on AP radiographs by 2 reviewers blinded to the both the suspected laterality and the final result of subsequent MRI or US imaging. The difference between the two sides for each measurement was then calculated as a ratio and sensitivities and specificities over a range of increments calculated to determine a significant cut off.

We found that a Metaphyseal Tear Drop Distance (MTD) difference ratio greater than or equal to 0.10 (Sensitivity 0.81, Specificity 0.74, p value 0.0001) proved the measurement with the most potential.
We do not propose replacing MRI or US as the gold standard but feel this simple measurement may potential be useful when these modalities are not available.

The First Worldwide Survey on Surgeon Preferences in the Management of Stiffness following Total Knee Arthroplasty

K H Sunil Kumar (ST4), Georgios Mamarelis, Vikas Khanduja
Addenbrooke's - Cambridge University Hospitals NHS Foundation Trust,
Cambridge, UK.

Background:
Stiffness following total knee arthroplasty (TKA) is a devastating complication. To date there are no clear guidelines for the appropriate management of this problem. This survey was undertaken to understand the attitudes and preferences, amongst surgeons across the world, for the management of stiffness following TKA.
Methods:
A validated online questionnaire, looking into various aspects of management of stiffness following TKA, was sent to members of the International Society of Orthopaedic Surgery & Traumatology (SICOT), following approval of the SICOT Research Academy. A total of 311 respondents, from 25 countries in 6 continents, completed the online survey.
Results:
The definition of stiffness following TKA varied among the different surgeons. A majority of the respondents (54%) elected to perform manipulation under anaesthesia (MUA) between 6 and 12 weeks following the index TKA. The average improvement in range of motion (ROM) following MUA was perceived to be 10-20 degrees by 33% and 21-30 degrees by 42% of respondents. 72% of surgeons used a continuous passive motion (CPM) devise following MUA. A total of 95% of surgeons offered formal physiotherapy following MUA: 61% for 6 weeks, 28% for 3 months and 6% for 6 months The rate of complication following MUA was reported to be <1% by 70% and 1-3% by 19% of respondents.
Conclusion:
Even though there is a variation in the management of stiffness following TKA, MUA and physiotherapy are still the first line of treatment along with CPM. Majority of the surgeons prefer to perform an MUA between 6 and 12 weeks. Identification of the problems at the first post-operative follow up appointment is crucial to ensure good long-term outcome.

Long-term Follow-up of Patients Undergoing Tibialis Posterior Transfer: Is Acquired Pes Planus a Complication?

M. Pecheva (ST3), A. Devany, B. Nourallah, C. Pasapula

Introduction and Hypothesis
Tibialis posterior transfer is a well-established and reliable surgical procedure in the treatment of foot drop to enable the patient to dorsiflex the foot and ankle to improve function of gait.
Our hypothesis is that if tibialis posterior dysfunction primarily leads to pes planus, then it would be reasonable to suggest that patients undergoing transfer of tibialis posterior may develop an acquired flat foot.
Patients and Methods
We undertook long-term clinical follow-up of 10 consecutive patients who underwent a tibialis posterior transfer for foot drop with an average age of 53.4 years (31 to 71 years, 5 male) and a mean follow up of 44.7 months (78 to 3 months).
All participants underwent initial clinical assessment with AP and lateral radiographs conducted by the same radiographer.
Calcaneal pitch, Meary's angle, the talo-calcaneal angle and talo-navicular coverage on anteroposterior radiographs were measured using the IMPAX digital goniometer by 3 authors and for each patient pre and post-operatively.
In addition, all participants underwent clinical assessment using the recently described 'medial heel lateral push test' to assess for spring ligament integrity, with degree of lateral

displacement and end point quality recorded for each patient by following 3 trials by two separate assessors.

Results

After reviewing 10 patients who underwent TP transfer for foot drop, none of them developed a pes planus deformity.

The average pre- and post-operative calcaneal pitch difference was +2.47 to -3.47 degrees for the ten patients as recorded by 3 observers (±1.82 SD). The average pre-and post-operative Meary's angle difference was +3.57 to -4.90 degrees for the 10 patients as recorded by the 3 observers (±2.44 SD). The average pre-and post-operative talo-calcaneal angle difference was +9.63 to -5.73 degrees for the 10 patients as recorded by the 3 observers (±4.83 SD). The average pre-and post-operative talo-navicular coverage difference was +4.73 to -9.8 degrees for the 10 patients as recorded by the 3 observers (±5.73 SD).

Medial heel lateral push test scores for the ten patients showed an average displacement of 129 mm (Observer 1, 67 – 300 mm) and 123 mm (Observer 2, 67 – 347 mm) following 3 trials for each patient with an average inter-observer difference for absolute values of 24 mm (0 – 47 mm). This demonstrates an intact spring ligament as there is little displacement using the medial heel lateral push test score. None of these patients developed an acquired pes planus, despite tibialis posterior transfer. The spring ligament may, therefore, be considered to be a key structure preventing the development of pes planus.

This would suggest that as supported by recent literature (Pasapula et al, 2015), the concept of tibialis posterior dysfunction as described by Johnson and Strom in 1989 is flawed and that it is entirely possible that spring ligament dysfunction may be the primary cause of acquired pes planus.

Conclusion

We conclude that acquired pes planus deformity is not caused by tibialis posterior dysfunction based upon its absence in patients undergoing de-functioning of tibialis posterior following its use as a donor for transfer in the treatment of foot drop.

These findings, in addition to a recently published cadaveric study assessing the role of the spring ligament in flat foot, challenge the current understanding of the role of TP in acquired pes planus, as popularised by Johnson and Strom.

We suggest that the spring ligament is the primary structure in preventing pes planus and that tibialis posterior dysfunction occurs secondarily to spring ligament dysfunction.

Registrar session 3

Post-code lottery? Is there variation in the allocation of funding for lower limb arthroplasty between clinical commissioning groups in England?

Rachel Fischer ST3 West Suffolk Hospital

Background:

The NHS is currently in a time of great financial stress and constraint. Perceived 'rationing' is being reported and felt by the British public- evident in the allocation of funding for arthroplasty surgery via clinical commissioning groups (CCGs).

Methods:

209 GGCs were approached via email, using the freedom of information act, and asked to provide information of patient criteria for hip and knee arthroplasty.

Results:

91 CCGs (44%) responded with information regarding hip arthroplasty funding allocation and 68 (33%) with regard to knee arthroplasty.

Hip arthroplasty: 36 (40%) CCGs required a patient to have been placed on a pathway prior to referral; 17 of which required physiotherapy assessment, 5 had a minimum time frame of 3-6 months. An upper BMI limit was required by 30 CCGs; this varied from 30 (6 CCGs), 35 (16 CCGs) and 40 (8 CCGs). Smoking was a restriction to funding in 4 CCGs. A functional scoring assessment criteria was in place in 22.

All CCGs reported having a bypass mechanism for patients who do not fulfil the funding criteria based on clinical assessment.

Knee arthroplasty: 28 (41%) CCGs required assessment on a pathway, 16 of which required input from physiotherapy. A BMI limit was required by 20 CCGs- again varying from 30- 40 between respondent. Smoking was a restriction to funding in 3 CCGs and a further 2 required referral to smoking cessation. A functional scoring assessment criteria was in place in 15 CCGs.

Implications:

The idea of a postcode lottery for health allocation has long been in existence, despite poor response from CCGs for information it is apparent that large variations in funding criteria exist. In a time when questions are being asked with regard to the allocation of resources it may be time to set a standard for the whole country.

Swallowing Following C-spine Surgery (EAT -10)

Tom Marjoram (ST6)
Tim Woodacre (Senior Spine Fellow),
Ipswich Hospital Spine Unit.

"At risk" structures during cervical spine surgery include the glossopharyngeal and hypoglossal nerves and the superior and recurrent laryngeal nerves. In addition the oesophagus is vulnerable in anterior surgery. Consequently post-operative dysphasia is a risk; with reported rates of 71%(1) following anterior and 13% following posterior surgery(2), with 53-36% persisting after 8 weeks.

Aim: To establish the extent and variation of dysphagia post cervical spine surgery in the Ipswich Hospital Spinal unit comparative to established literature.

Cohort: All patients undergoing cervical spine surgery over 3 months at Ipswich hospital.

Method: All patients undergoing anterior or posterior cervical spine surgery completed an EAT-10 questionnaire pre-operation, day 1 post-operation and 8 weeks following surgery. Results were correlated with approach, duration of surgery, presence of anterior plate and number of operated levels. A score higher than or a change greater than 3 is known to indicate a swallowing abnormality.

Results: The overall rate of dysphagia after anterior surgery was 73% in the initial post op period and 33% at 6 weeks. Posterior cervical surgery numbers were smaller in our unit but our initial dysphagia rate was 0 rising to 20% at 6 weeks following one episode of re-operation. Multilevel surgery had higher dysphagia rates of 50% at 6 weeks. Revision surgery and corpectomy also had higher rates of dysphagia as expected. Ipswich Spinal Unit is within acceptable limits in comparison to the published data.

Long Term Outcomes Of Bladder, Bowel And Sexual Function In Post Operative Cauda Equina Syndrome Patients.

Devany Adam (ST6), Steele Nick, Marya Shivan, Gill Damien, Crawford Robert, Webb Ralph, Rai Amarjit, Lutchman Lennel
Norfolk and Norwich University Hospital

Background

The short-term outcome after decompression for cauda equina syndrome (CES) has been studied in relation to the timing of surgery, but longer-term outcomes has received comparatively little attention.

Purpose

A detailed assessment of long-term outcomes after decompressive surgery for CES in 23 patients.

Patient Sample

23 patients with CES due to disc protrusion between 2004-2014.

Outcome Measures

Post-operative bladder, bowel and sexual function.

MethodsRetrospective cohort study of CES patients. Used validated IPSS & ICIQ-UI urological, bowel and sexual function patient questionnaires.

Results

23 of 29 patients (10M, 13F, mean age 50yrs) with CES responded with a mean time to follow up of 7 years. Eight presented as complete CES versus 15 with incomplete. Mean time-to-

surgery from onset of symptoms was 21 hours. Fourteen reported ongoing urinary problems of which 9 still use a urinary catheter. Mean voiding dysfunction (IPSS) and incontinence (ICIQ-SF) scores were 10 (range 0-26) and 9 (range 2-19) respectively, indicating moderate severity. Four of the 10 male and 12 of the 13 females report sexual dysfunction. 12 of 23 also report bowel dysfunction including 3 with faecal incontinent. 17 of 23 have a Karnofsky performance score of 80% or more

Conclusions

Our study suggests long-term sphincter and sexual morbidity is associated with CES. The 4 patients who fully recovered at 6-18 months had a shorter mean time-to-surgery of 11hrs. This study also highlights the importance of managing patients' expectations with further treatment and support.

Smartphone surgical simulation for Transforaminal Lumbar Interbody Fusion (TLIF) procedure amongst orthopaedic registrars

Coomber R, Bahsoun A, Nehme J, Chow A and Bowditch M.

Background:

In order to improve patient safety and as a consequence of reduced training hours, surgical simulation is growing. Simulation provides a safe environment for trainees to prepare for both assisting and performing surgical procedures. Our aim was to assess whether a smartphone surgical simulator app (Touch Surgery) improved trainees knowledge of a complex procedure and whether trainees felt this form of simulation was beneficial for training.

Methods:

All orthopaedic registrars within the LETB were invited to participate. TLIF was the chosen procedure as few registrars had previous experience of it. Registrars completed a pre-intervention questionnaire specific to TLIF followed by two modules of the TLIF simulation application on Touch Surgery and finally completed a post-module questionnaire.

Results:

47 of 48 registrars (ST3-ST7) completed the initial analysis and 22 completed the entire study. In the pre-module questionnaire the technical questions were answered inaccurately and over 90% thought their ability of performing a TLIF would be poor or dangerous. The median scores on the simulator app modules were 97% and 90%. There was a significant improvement in the technical answers after completing the modules as well as the perceived ability of the trainee to either assist or perform part of a TLIF. Over 90% of trainees found the simulation useful and thought it should be part of surgical training.

Conclusion:

Barriers to simulation training can be bridged by app-based simulation. Most trainees found this form of training useful. As Touch Surgery is a cognitive trainer, this should be used to supplement training, not replace hands-on surgical experience. Whether simulation improves surgical skill acquisition or patient safety needs to be validated through a high fidelity RCT to assess the transferability of learned skills to the operating room.

Implications:

Smartphone based simulation could be integrated into higher surgical training and assessment.

THR v Hemi for trauma

Aparna Viswanath (ST7); Anum Malik; Warwick Chan; Neil Walton
Norfolk and Norwich

There has been increasing debate about the use of total hip replacement (THR) in the setting of an acute displaced intracapsular neck of femur fracture. Despite few good quality studies on the subject, NICE have issued guidance suggesting that we offer a THR to those patients who are not cognitively impaired, are able to walk independently with a maximum of 1 stick outdoors, and who are medically fit for the procedure.

We performed a retrospective review of 10 years of intracapsular neck of femur fractures treated with either a cemented hemiarthroplasty or a THR at one hospital. A total of 2721 patients were reviewed along with all subsequent clinic letters and radiographs. The primary outcomes analysed were return to hospital with a problem and revision surgery. We also secondarily looked at mortality rates.

We found no difference in the overall revision rate or rate of infection; however the rate of patient return with a problem was significantly higher in the THR group ($p< 0.0001$). The dislocation rate, pain and rate of trochanteric bursitis was also significantly higher in the THR group ($p=0.0045$, $p< 0.0001$, and $p=0.007$ respectively). The mortality rate was significantly higher as expected in the hemiarthroplasty group.
From this we suggest that further prospective, good quality randomised studies are performed before we expand our reasons to use THR in the setting of fracture.