TOTAL HIP REPLACEMENT OR HIP HEMIARTHROPLASTY - WHAT IS THE CORRECT CHOICE IN ALCOHOLICS AGED 40-65?

D. M. Gunia, D. Pethers, N. Mackenzie, A. Stark, B. Jones
Glasgow Royal Infirmary, Glasgow G4 0SF, UK
Email: dariusz.gunia@nhs.scot

NICE Guidelines suggest patients should be offered a Total Hip Replacement (THR) rather than Hemiarthroplasty for a displaced intracapsular hip fracture. We investigated outcomes of patients aged 40-65 who received a THR or Hemiarthroplasty following a traumatic intracapsular hip fracture and had either high-risk (Group 1) or low-risk (Group 2) alcohol consumption (>14 or <14 units/week respectively).

This was a retrospective study (April 2008 - December 2018) evaluating patients who underwent THR or Hemiarthroplasty in Greater Glasgow and Clyde. Atraumatic injuries, acetabular fractures, patients with previous procedures on the affected side and those lost to follow up were excluded. Analysis of length of admission, dislocation risk, periprosthetic fractures, infection risk, and mortality was conducted between both cohorts.

Survival time post-operatively of Group 1 patients with a THR (61.9 months) and Hemiarthroplasty (42.3 months) were comparable to Group 2 patients with a THR (59 months) and Hemiarthroplasty(42.4 months). Group 1 patients with THR had increased risk of dislocation (12.9%; p=0.04) compared to those that received Hemiarthroplasty (2.5%). Group 1 Hemiarthroplasty patients had increased wound infection risk (11.6%) compared to Group 2 (3.7%).

In conclusion, we found that amongst our population the life expectancy of a post-operative patient was short irrespective of whether they had high or low-risk alcohol consumption. A hip fracture may represent increased frailty in our study population. The Group 1 THR cohort presented a higher risk of hip dislocation and periprosthetic fracture. With this in mind, Hemiarthroplasty is a more cost-effective and shorter operation which produces similar results.

MEDIUM-TERM OUTCOMES FOLLOWING STEMLESS ANATOMIC TOTAL SHOULDER REPLACEMENT; CLINICAL AND RADIOLOGICAL FINDINGS (MINIMUM 5 YEAR FOLLOW-UP)

J. E. Dixon, I.A. Rankin, N. Sciberras, L.A.K. Khan, S.L. Barker, D.A. Cairns, K. Kumar
Author Affiliation/Contact Address: Woodend General Hospital, Eday Rd, Aberdeen, AB15 6XS, Scotland
Contact Email Address: james.dixon@nhs.scot

In recent years, use of anatomic stemless total shoulder arthroplasty (AsTSA) has increased. Despite evidence to suggest good mid-term results at 2-year follow-up there is a paucity of evidence for longer term follow-up. This study aimed to investigate outcomes at a minimum of 5 years post-operatively following primary AsTSA.

This study is a retrospective case series of all patients who underwent a Mathys Affinis AsTSA from July 2010 (first case) to August 2018 (to allow minimum 5-year follow-up). Clinical outcomes included revision rate, range of motion and patient reported outcomes (Oxford Shoulder Score and Numerical Satisfaction Score). Radiological outcome was assessment of radiolucent lines for Lazarus grading.

A total of 105 stemless TSAs were implanted. Five patients underwent revision (4.8%). Seventy-five AsTSA's were included in the final study for analysis of 5-year outcomes. Median follow-up time was 6.1 years. Median age was 69 years old and 81% were female. Oxford shoulder score showed a range of 18 to 48, with a median score of 47. Satisfied or very Satisfied was selected in 94.37%. Median range of motion assessments showed forward elevation 160°, abduction 150°, external rotation 40°, and mode internal rotation was to the lumbar spine. No glenoid lucency was present in 79.7%. There were 9.5% with Lazarus Grade 1 lucency, 5.4% with Lazarus Grade 2, and 5.4% Lazarus Grade 3. No humeral lucency was observed.

This cohort study demonstrates promising clinical and radiological outcomes for the Mathys Affinis Stemless TSA at minimum 5 years post-operatively.

REMOVAL OF SOFT CAST AT HOME AFTER PAEDIATRIC TRAUMA IS SAFE AND CONVENIENT FOR CAREGIVERS

J. Aithie[1], K. Hughes[1], J. Wang[2], N. Wickramasinghe[1], E. Baird[1]
[1]Department of Paediatric Orthopaedic Surgery, RHCYP, Edinburgh, Scotland
[2]University of Edinburgh, Edinburgh, Scotland
Email: joanna.aithie@nhs.scot

At-home softcast removal with no routine clinical follow-up has shown to be safe and effective following paediatric orthopaedic trauma. It minimises clinician contact time and reduces cost. However, there is limited data on the caregiver experience.

Retrospective analysis of paediatric fractures requiring application of circumferential softcast that was later removed at home. Two time points were included: (1)July–September 2022, (2)February–April 2023. Demographics data included age, fracture classification, angulation, manipulation requirement, complications or unplanned re-attendance. Caregivers were given an information leaflet on cast removal. Caregivers completed a telephone Likert questionnaire reviewing time taken to remove cast, qualitative descriptors of cast removal and overall satisfaction.

77 families were contacted at mean 93 days post injury. Mean age was 7.5 years. 41(53%) were distal radius and 20(26%) both-bone forearm fractures. The remaining were hand, elbow or tibia injuries. 40(52%) injuries required manipulation under procedural sedation with mean sagittal angulation 24 degrees. 13(17%) patients re-attended with cast problems. Caregivers estimated a mean 13 minutes to remove cast. 83% found it ‘extremely’ or ‘somewhat’ easy. 75% were ‘extremely’ or ‘somewhat’ satisfied. 71% were ‘extremely’ or ‘somewhat’ likely to recommend at-home cast removal. Qualitative descriptors ranged from from 'traumatising' to ‘fun’ and ‘straightforward’.

The experience at our tertiary centre confirms at-home softcast removal with no further orthopaedic follow-up is safe and feasible, even in those requiring manipulation under sedation. The majority of families reported a positive experience; this however is not universal. Adequate patient information resources are integral to a positive caregiver’s experiences.

A PROSPECTIVE RANDOMISED TRIAL OF OPERATIVE *VERSUS* NON-OPERATIVE MANAGEMENT OF FRACTURES OF THE HUMERAL DIAPHYSIS: THE HUMERAL SHAFT FRACTURE FIXATION (HU-FIX) STUDY

W.M. Oliver, K.R. Bell, T.H. Carter, T.O. White, N.D. Clement, A.D. Duckworth, S.G. Molyneux
Edinburgh Orthopaedics, Royal Infirmary of Edinburgh, Midlothian, EH16 4SA, UK
Email: william.m.oliver@doctors.org.uk

This single-centre prospective randomised trial aimed to assess the superiority of operative fixation compared with non-operative management for adults with an isolated, closed humeral shaft fracture.

70 patients were randomly allocated to either open reduction and internal fixation (51%, n=36/70) or functional bracing (49%, n=34/70). 7 patients did not receive their assigned treatment (operative n=5/32, non-operative n=2/32); results were analysed based upon intention-to-treat. The primary outcome measure was the DASH score at 3 months. Secondary outcomes included treatment complications, union/nonunion, shoulder/elbow range of motion, pain and health-related quality of life (HRQoL).

At 3 months, 66 patients (94%) were available for follow-up; the median DASH favoured surgery (operative 20.0, non-operative 39.2; p=0.013) and the difference (19.2 points) exceeded the MCID. Surgery was also associated with a superior DASH at 6wks (operative 38.4, non-operative 53.1; p=0.005) but not at 6 months or 1yr. Brace-related dermatitis affected 7 patients (operative 3%, non-operative 18%; OR 7.8, p=0.049) but there were no differences in other complications. 8 patients (11%) developed a nonunion (operative 6%, non-operative 18%; OR 3.8, p=0.140). Surgery was associated with superior early shoulder/elbow range of motion, and pain, EuroQol and SF-12 Mental Component Summary scores. There were no other differences in outcomes between groups.

Surgery confers early advantages over bracing, in terms of upper limb function, shoulder/elbow range of motion, pain and HRQoL. However, these benefits should be considered in the context of potential operative risks and the absence of any difference in patient-reported outcomes at 1yr.

CEPHALOMEDULLARY NAILING FOR SUBTROCHANTERIC FEMORAL SHAFT FRACTURES: A COMPARISON OF SINGLE LAG SCREW WITH A DUAL LAG SCREW DEVICE

A.D. Ablett[1], C. McCann[1], T. Feng[1],V Macaskill[2], W.M. Oliver[1], J.F. Keating[1,2]
1. Edinburgh Orthopaedics, Royal Infirmary of Edinburgh, UK; 2. University of Edinburgh Medical School, Edinburgh, UK
Email: Andrew.ablett3@nhs.scot

This study compares outcomes of fixation of subtrochanteric femoral fractures using a single lag screw (Gamma3 nail, GN) with a dual lag screw device (InterTAN nail, IN). The primary outcome was mechanical failure, defined as lag screw cut-out, back-out, nail breakage or peri-implant fracture. Technical factors associated with mechanical failure were also identified.

All adult patients (>18yrs) with a subtrochanteric femoral fracture treated in a single centre were retrospectively identified using electronic records. Included patients underwent surgical fixation using either a long GN (2010-2017) or IN (2017-2022). Cox regression analysis was used to determine the risk of mechanical failure and technical predictors of failure.

The study included 587 patients, 336 in the GN group (median age 82yrs, 73% female) and 251 in the IN group (median age 82yrs, 71% female). The IN group exhibited a higher prevalence of osteoporosis (*p=0.002*) and CKD≥3 (*p=0.007*). There were no other baseline differences between groups. The risk of any mechanical failure was increased two-fold in the GN group (aHR 2.55, *p=0.018*). Mechanical failure comprising screw cut-out (*p=0.040*), back-out (*p=0.040*) and nail breakage (*p=0.51*) was only observed in the GN group. The risk of peri-implant fracture was similar between the groups (aHR 1.12, *p=0.79*). Technical predictors of mechanical included varus >5° for cut-out (HR 15.61, *p=0.016*), TAD>25mm for back-out (HR 9.41, *p=0.020*) and shortening >1cm for peri-implant fracture (HR 6.50, *p=<0.001*).

Dual lag screw designs may reduce the risk of mechanical complications for older patients with subtrochanteric femoral fractures.

ROBOTIC-ASSISTED VS. MANUAL TOTAL HIP ARTHROPLASTY – PATIENT REPORTED OUTCOME MEASURES AT 12 MONTHS

M Ammori, S Hancock, P Talukdar, C Munro, A Johnston
Woodend Hospital, Eday Road, Aberdeen, AB15 6XS
Email: Mohannad.ammori@icloud.com

The objectives of our study were to compare patient reported outcome measures between manual and robotic-assisted total hip arthroplasty.

Between 1st May 2021 and 31st August 2022, 539 consecutive patients who underwent 564 primary total hip arthroplasties were identified from the local registry database. Data were prospectively collected, and included patient demographics, American Society of Anaesthesiologists (ASA) grade, surgical approach, robotic-assistance, Oxford Hip Score (OHS), EQ-5D-3L and EQ-VAS pre-operatively and at twelve months.

Robotic-assistance, compared against manual total hip arthroplasty, was associated with an enhanced median (interquartile range) OHS (46 [42 – 48] vs 43 [36 – 47], *p*-value < 0.001), EQ-5D-3L (5 [5 – 7] vs 6 [5 – 8], *p*-value 0.002), and EQVAS (90 [75 – 95] vs 80 [70 – 90], *p*-value 0.003) at twelve months after surgery. Robotic-assistance was confirmed to be an independent predictor of a greater OHS at twelve months on a multivariate linear regression analysis (*p*-value 0.001).

Robotic assistance was superior to manual total hip arthroplasty in enhancing patient reported outcomes at twelve months after surgery.

WEIGHT BEAR THEN DISCHARGE: A SAFE MANAGEMENT STRATEGY FOR ISOLATED WEBER B LATERAL MALLEOLUS FRACTURES – OUTCOMES OF 658 PATIENTS

D. H. Martin, N. Ng, B. Armstong, J. Brennan, T. Feng, K. Lekuse, T. O. White, S. P. Mackenzie
Edinburgh Orthopaedics, Royal Infirmary of Edinburgh, 51 Little France Crescent EH16 4SA
damien.h.martin@gmail.com

Myriad protocols exist for isolated Weber B lateral malleolus fractures with a congruent tibiotalar joint on initial radiographs. Stress and weight-bearing radiographs, all at various timepoints, may be employed to identify those injuries that develop significant talar shift but consensus is elusive. This study outlines a safe and reproducible protocol for such injuries, utilising a removable orthosis, immediate weight bearing and standard supine radiographs.

A retrospective analysis of a prospective trauma database was analysed to identify patients with an isolated Weber B ankle fracture with adequate presentation radiographs demonstrating a congruent mortise. Patient records and radiographs were evaluated a minimum of 5 years after initial presentation to determine ankle stability, complications, and the burden on outpatient services.

Between 2014 and 2016, 657 patients were referred to the specialist trauma clinic from the emergency department. Of the 657, 52 patients had inadequate ED radiographs to determine ankle congruity. At the two-week assessment, 11 of the 52 demonstrated talar shift and required intervention. Therefore 646 patients demonstrated ankle congruity at two weeks after weight bearing. No patient demonstrated talar shift at the six-week assessment. Average number of follow up appointments was 2.4 with 3.5 radiographs. Our new treatment protocol advocates discharge after a single orthopaedic assessment after two weeks of weight bearing.

This study supports immediate weight-bearing of Weber B ankle fractures with a congruent mortise in an orthosis. Follow up beyond two weeks is unnecessary and our protocol offers a safe means of significantly reducing the outpatient burden.

A COMPARATIVE ANALYSIS OF MEMORY STAPLES AND COMPRESSION PLATE WITH CROSS SCREW FOR FIRST METATARSOPHALANGEAL (MTP) JOINT ARTHRODESIS: A QUANTIFICATION OF FUNCTIONAL OUTCOMES UTILISING THE MANCHESTER–OXFORD FOOT QUESTIONNAIRE (MOXFQ)

H. Zaffar, B. Benjamin, T. Syed, E. Drampalos
Forth Valley Royal Hospital, Scotland
Email : haroon.zaffar@elht.nhs.uk

Arthrodesis of the first metatarsophalangeal joint (MTPJ) is the most reliable surgical option, for hallux rigidus from end-stage osteoarthritis. The aim of the study was to compare the functional outcomes of memory nickel-titanium staples versus a compression plate with a cross screw construct for first MTPJ arthrodesis using the Manchester–Oxford Foot Questionnaire (MOXFQ).

Patients who underwent MTPJ arthrodesis using either memory nickel-titanium staples or a compression plate with a cross screw construct were identified from the surgical lists of two orthopaedic consultants. Pre and post-operative MOXFQ questionnaire, a validated patient-reported outcome measure, was administered, and responses were analysed to derive the MOXFQ summary index.

The study included 38 patients (staple group N=12 and plate and cross screw group N=26). 23 patients were female and 15 were male. Mean age was 64.8 years (SD 9.02; 40 to 82). Initial analysis showed no significant difference in preoperative MOXFQ scores between the groups ($p = 0.04$). Postoperatively, the staple group exhibited a mean improvement of 36.17, surpassing the plate group's mean improvement of 23. Paired t-test analysis revealed a statistically significant difference (t-score= 2.5, $p = 0.008$), favouring the use of staples.

The findings indicate that the use of staples in MTPJ arthrodesis resulted in a significantly greater improvement in MOXFQ scores compared to plates. Further research is needed to explore the underlying factors contributing to this difference and to evaluate long-term effects on patient outcomes.

A NATIONWIDE MULTICENTRE STUDY EVALUATING THE PREVALENCE, CASEMIX AND MANAGEMENT OF PERIPROSTHETIC FEMUR FRACTURES: THE SCOTTISH NATIONAL AUDIT OF PERIPROSTHETIC FEMUR FRACTURES (SNAP FEMUR) INTIAL REPORT

A.J. Hall, N.D. Clement, L. Farrow, J.W. Kennedy, T. Harding, A.D. Duckworth, A.M.J. Maclullich, P. Walmsley, on behalf of SCOTNET SNAP FEMUR GROUP
School of Medicine, University of St Andrews, St Andrews, KY16 9TF, UK
Email: ajh52@st-andrews.ac.uk

Periprosthetic femur fracture (PPF) are heterogeneous, complex, and thought to be increasingly prevalent. The aims were to evaluate PPF prevalence, casemix, management, and outcomes.

This nationwide study included all PPF patients aged >50 years from 16 Scottish hospitals in 2019. Variables included: demographics; implant and fracture factors; management factors, and outcomes.

There were 332 patients, mean age 79.5 years, and 220/332 (66.3%) were female. One-third (37.3%) were ASA1-2 and two-thirds (62.3%) were ASA3+, 91.0% were from home/sheltered housing, and median Clinical Frailty Score was 4.0 (IQR 3.0). Acute medical issues featured in 87/332 (26.2%) and 19/332 (5.7%) had associated injuries. There were 251/332 (75.6%) associated with a proximal femoral implant, of which 232/251 (92.4%) were arthroplasty devices (194/251 [77.3%] total hip, 35/251 [13.9%] hemiarthroplasty, 3/251 [1.2%] resurfacing). There were 81/332 (24.4%) associated with a distal femoral implant (76/81 [93.8%] were total knee arthroplasties). In 38/332 (11.4%) there were implants proximally and distally. Most patients (268/332; 80.7%) were treated surgically, with 174/268 (64.9%) requiring fixation only and 104/268 (38.8%) requiring an arthroplasty or combined solution. Median time to theatre was longer for arthroplasty versus fixation procedures (120 vs 46 hours), and those requiring inter-hospital transfer waited longer (94 vs 48 hours).

Barriers to investigating PPF include varied classification, coding challenges, and limitations of existing registries. This is the first study to examine a national PPF cohort and presents important data to guide service design and research. Additional findings relating to fracture patterns, implant types, surgeon skill-mix, and outcomes are reported herein.

SHORT AND TRANSVERSE VANCOUVER B1 FRACTURES AROUND A CEMENTED POLISHED TAPERED STEM, BEWARE!

Matilda FR Powell-Bowns[1], Damien Martin[1], Abbey Bowley[2], Matthew Moran, Nick D Clement[1-2], Chloe EH Scott[1, 2].
[1] Royal Infirmary of Edinburgh, Edinburgh
[2] University of Edinburgh, Edinburgh
Royal Infirmary of Edinburgh, Little France Cres, Edinburgh EH164SA.
Email: tillspb@hotmail.co.uk

Aim of this study was to identify reoperation rates in patients with short oblique and transverse fractures around a well fixed cemented polished taper slip stem and to determine any associations with treatment failure.

Retrospective cohort study of 31 patients with AO transverse or short oblique Vancouver B1 PFFs around THA (total hip arthroplasty) cemented taper slip stems: 12 male (39%); mean age 74±11.9 (range 44-91); mean BMI 28.5±1.4 (range 16-48); and median ASA 3. Patient journeys were assessed, re-interventions reviewed. The primary outcome measure was reoperation.

Time from primary THA to fracture was 11.3±7.8yrs (0.5-26yrs). Primary surgical management was fixation in 27/31 and rTHA (revision total hip arthroplasty) in 4/31. 10 of 31 (32%) patients required reoperation, 9 within 2 years of fracture: 1 following rTHA and 8 following ORIF. The commonest mode of failure was non-union (n=6). No significant associations with reoperation requirement were identified. Kaplan-Meier free from reoperation was 67.4% (49.8-85.0 95% CI) at 2 years and this was unaffected by initial management with ORIF or rTHA (Log rank 0.898). Of those reoperated, 6/10 required multiple reoperations to obtain either bony union or a stable revision construct and 13% ultimately required proximal femoral endoprostheses. The relative risk of 1 year mortality was 1.6 (0.25 to 10.1 95%CI) among patients who required reoperation compared to those who did not.

These are difficult fractures to manage, should not be underestimated and patients should be counselled that there is a 30% risk of reoperation and 20% of requiring multiple reoperations.

INVESTIGATING THE EFFICACY OF SURGICAL AND NON-SURGICAL TREATMENT OPTIONS FOR MORTON'S NEUROMA BASED ON THEIR SIZE

D. Macleod, S. S. Anand, E. Drampalos, T. Syed.
Forth Valley Royal Hospital, Stirling Rd, Larbert, FK5 5WR, UK
Email: douglasmacleod17@googlemail.com

Data was collected for patients referred to the orthopaedic department at Forth Valley Royal Hospital with metatarsalgia who subsequently received an ultrasound. Patients found to have a Morton's neuroma were divided into groups based on its size.

A total of 90 patients received an ultrasound scan and neuroma was confirmed in 58 with an alternative diagnosis found in 32 patients and a total of 42 were included in the final analysis.

All 14 patients with neuroma < 6mm reported resolution of symptoms. 4 (28.5%) underwent surgical excision as first line, 1 (7%) received a single corticosteroid injection and 9 (64%) were treated with metatarsal bars.

There were 27 patients with neuroma > 6mm; 8 (29.6%) underwent surgical excision as first line treatment, 5 (18.5%) received metatarsal bars and 14 (51.9%) received injections. 7 (25.9%) patients reported resolution of symptoms after 1 injection, 1 (3.7%) patient required 2 injections and 1 (3.7%) patient required 3 injections to achieve resolution. 5 (18.5%) patients required surgical excision following ongoing symptoms despite non-surgical treatment. 9 (33.3%) reported resolution of symptoms following injection. 5 (18.5%) reported resolution of symptoms following use of metatarsal bars.

A total of 71% of patients with a neuroma measuring < 6mm reported full resolution of symptoms with non-surgical treatment. For patients with neuroma >6mm, 64.3% had resolution of symptoms with injections alone and 18.5% required surgical excision despite injection.

In conclusion, there is a benefit to offering non-surgical treatment as first line in patients with a neuroma regardless of size.