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Reverse Shoulder Arthroplasty Provided Better Functional Outcomes than Hemiarthroplasty for Acute Proximal Humeral Fractures Blinded, Randomized, Controlled, Prospective Study

Sebasti'a-Forcada E, Cebri'an-G'omez R, Lizaur-Utrilla A, Gil-Guill'en V.

A. J Shoulder Elbow Surg. 2014 Oct; 23(10):1419-26.

QUESTION

In older patients with acute complex proximal humeral fractures, how does reverse shoulder arthroplasty (RSA) compare with hemiarthroplasty (HA) for functional outcomes?

DESIGN

Randomized (allocation concealed), blinded (outcome assessors), controlled trial with at least 2 years of follow-up.

Setting: A university hospital in Alicante, Spain. Patients: 62 patients who were ≥ 70 years of age with an acute proximal humeral fracture and who were candidates for shoulder arthroplasty because of complex fracture patterns not amenable to reduction and fixation. Exclusion criteria were contraindications to surgery, previous shoulder surgery, associated ipsilateral upper limb fracture, or neurologic disorder. 61 patients (98%) (mean age, 74 years; 85% women) completed follow-up.

INTERVENTION

Patients were randomly allocated to RSA (n = 31) or HA (n = 30). A modular shoulder

Replacement system that allowed either an HA or RSA to be performed with the same cementless humeral stem was used in both groups. The tuberosities were repaired in a similar fashion in both groups.

MAIN OUTCOME MEASURES

The primary outcome measure was shoulder functional status according to the Constant-Murley score (100 points, with higher scores indicating better function). Secondary measures included the University of California Los Angeles (UCLA) shoulder score (0 to 35 points, with higher scores indicating better function); the Disabilities of the Arm, Shoulder and Hand score (QuickDASH) (0 to 55 points, with higher scores indicating worse outcomes); pain; and range of motion.

MAIN RESULTS

Patients in the RSA group had better shoulder function as measured with the Constant, UCLA, and QuickDASH scores than patients in the HA group (Table). Range of motion was also superior in the RSA group; however, the groups did not differ in terms of internal rotation (Table). All patients in the RSA group had no or mild pain, whereas 10 patients in the HA group had moderate or severe pain (p = 0.002). One patient in the RSA group required a 2-stage revision to another RSA, and 6 patients in the HA group required revision to RSA.

CONCLUSION

In older patients with acute complex proximal humeral fractures, RSA provided better functional outcomes than HA.

Management of Anterior Cruciate Ligament Injuries

The journal of bone & joint surgery volume 97-A. 2015; 8:672-4.

ABSTRACT

The AAOS Evidence-Based Guideline on Management of Anterior Cruciate Ligament Injuries includes both diagnosis and treatment. This clinical practice guideline has been endorsed by the National Academy of Sports Medicine (NASM), the American Orthopaedic Society for Sports Medicine (AOSSM), the National Athletic Trainers' Association (NATA), and the American Academy of Physical Medicine and Rehabilitation (AAPM&R). This brief summary of the AAOS Clinical Practice Guideline contains a list of the recommendations and the rating of strength based on the quality of the supporting evidence. Discussion of how each recommendation was developed and the complete evidence report are contained in the full guideline at www.aaos.org/guidelines.

Acetabular Fractures in the Elderly, Evaluation and Management Current Concepts Review.

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J Bone Joint Surg Am. 2015;97:758-68

ABSTRACT

Investigation performed at the Division of Orthopedic Surgery, The Ottawa Hospital, University of Ottawa, Ottawa, Ontario, Canada. Acetabular fracture patterns in the elderly, with increased involvement of the anterior column, quadrilateral plate comminution, medialization of the femoral head, and marginal impaction, differ from those noted among a younger cohort.

Poor prognostic factors for open reduction and internal fixation (ORIF) are posterior wall comminution, marginal impaction of the acetabulum, a femoral head impaction fracture, a so-called gull sign, and hip dislocation.

The rate of conversion to total hip arthroplasty following formal ORIF has been reported to be 22% at a mean of twenty-nine months.

Total hip replacement after an acetabular fracture generally yields good clinical results; however, in the acute setting, it must be combined with proper stable fracture fixation.

Is early hip fracture surgery safe for patients on clopidogrel? Systematic review, meta-analysis and meta-regression.

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Injury, Int. J. Care Injured 46 (2015) 954–962

INTRODUCTION

Hip fracture is a common presentation in the elderly population, many of whom will be taking the antiplatelet clopidogrel, which has the potential to increase perioperative bleeding. The aim of this systematic review and meta-analysis was to answer the questions: (1) is early hip fracture surgery for patients on clopidogrel associated with worse postoperative outcomes compared to patients not on clopidogrel? (2) is early versus delayed surgery for these patients associated with worse postoperative outcomes?

METHODS

A systematic search was conducted of MEDLINE, EMBASE, Cinahl and AMED databases. Results from patients undergoing early surgery on clopidogrel were compared to a control group not taking



clopidogrel. In addition, patients taking clopidogrel undergoing early and delayed surgery were compared.

RESULTS

For patients taking clopidogrel undergoing early surgery, there was no associated increase in overall mortality (OR 0.89; 95% CI: 0.58–1.38) or 30-day mortality (OR 1.10 95% CI: 0.48–2.54). However, there was an associated increase in blood transfusion (OR 1.41 95% CI: 1.00–1.99). There was an associated decreased length of stay in the early surgery versus delayed surgery group (weighted mean difference -7.09 days (95% CI: -10.14 to -4.04).

DISCUSSION

Early surgery appears safe for patients with hip fracture though there may be a small increase in the rate of blood transfusion. However, larger prospective trials are required to confirm these findings.

Lateral versus posterior approach for insertion of hemiarthroplasties for hip fractures: A randomised trial of 216 patients

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Injury, Int. J. Care Injured 46 (2015) 1023–1027

ABSTRACT

Continued debate exists about the merits of the different surgical approaches for arthroplasty of the hip. For hemiarthroplasty to the hip the two most commonly used approaches are lateral and posterior. 216 patients with an intracapsular hip fracture being treated with a cemented hemiarthroplasty were randomised to surgery using either a lateral or posterior approach. Surviving patients were followed up for one year with pain and functional outcomes assessed by an assessor blinded to the treatment allocation. No statistically significant differences were observed for any of the outcome measures including mortality, degree of residual pain and regain of walking ability. A subjective assessment of the ease of surgery favoured the lateral approach. In conclusion both surgical approaches appear to produce comparable function outcomes.

Reoperation rates after anterior cervical discectomy and fusion versus posterior cervical foraminotomy: a propensity-matched analysis.

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The Spine Journal 15 (2015) 1277–1283

BACKGROUND CONTEXT

Anterior cervical discectomy and fusion (ACDF) and posterior cervical foraminotomy (PCF) are both used to surgically treat patients with cervical radiculopathy and have been shown to have similar outcomes. Nonetheless, ACDF has become increasingly more commonplace compared with PCF, in part because of a pervasive belief that PCF has a higher incidence of required reoperations.

PURPOSE

To determine the reoperation rate at the index level of ACDF versus PCF 2 years postoperatively.

STUDY DESIGN

A retrospective case-control.

PATIENT SAMPLE

All patients that underwent ACDF and PCF for radiculopathy (excluding myelopathy indications) between January 2005 and December 2011.

Outcome measures: Revision surgery within 2 years, at the index level, was recorded.

METHODS

Propensity score analysis between the ACDF and PCF groups was done, matching for age, gender, race, body mass index, tobacco use, median income and insurance status, primary surgeon, level of surgery, surgery duration, and length of hospital stay.

Results: Seven hundred ninety patients met the inclusion/exclusion criteria, including 627

ACDF and 163 PCF. Before propensity matching, the PCF group was found to be significantly older and more likely to be male. After matching, there were no significant differences between groups.

Outcomes of 807 Thompson hip hemiarthroplasty procedures and the effect of surgical approach on dislocation rates.

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Injury, Int. J. Care Injured 46 (2015) 1013–1017

ABSTRACT

The majority of displaced intracapsular fractures in our unit are managed with a Thompson hip hemiarthroplasty. Recent UK guidance from the National Institute for Health and Care Excellence has, however, advised against the continued use of the Thompson implant in patients with hip fracture. The aim of this study was to review the outcomes and complications after Thompson hip hemiarthroplasty, including the impact of modern surgical approaches and cementing, whilst controlling for confounding factors. We reviewed the outcomes following Thompson hip hemiarthroplasty from a series of 807 cases performed between April 2008 and November 2013. Of these, 721 (89.3%) were cemented and 86 (10.7%) uncemented. A total of 575 (71.3%) procedures were performed in female patients. The anterolateral approach was performed in 753 (93.3%) and the posterior approach with enhanced soft tissue repair in 54 (6.7%). Overall, there were 23 dislocations (2.9%). Dislocation following the posterior approach occurred in 13.0% (seven of 54) in comparison to 2.1% (16 of 753) with the anterolateral approach (odds ratio (OR) 8.5 (95% confidence interval (CI) 2.8–26.3), $p < 0.001$). Patients were discharged home in 459 cases (56.9%), to a care home or other hospital in 273 cases (33.8%). Of the total number of patients, 75 died during their admission (9.3%), and 51.8% (338 of 653) returned home within 30 days. The 30-day mortality was 7.1% (57 cases) and the 1-year mortality was 16.6% (116 of 699). We recommend against the continued use of the posterior approach in hip hemiarthroplasty, as enhanced soft tissue repair did not reduce the dislocation rates to an acceptable level in this series utilising the Thompson implant. Our findings, however, demonstrate satisfactory results for patients treated with the Thompson hip hemiarthroplasty performed through an anterolateral approach. We suggest that the continued use of this implant in a carefully selected patient cohort is justifiable.

Interobserver and Intraobserver Reliability of the Modified Waldenstrom Classification System for Staging of Legg-Calvé-Perthes Disease

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J Bone Joint Surg Am. 2015;97:643-50

ABSTRACT

Background: The absence of a reliable classification system for Legg-Calvé-Perthes disease has contributed to difficulty in establishing consistent management strategies and in interpreting outcome studies. The purpose of this study was to assess interobserver and intraobserver reliability of the modified Waldenstrom classification system among a large and diverse group of pediatric orthopaedic surgeons.

Methods: Twenty surgeons independently completed the first two rounds of staging: two assessments of forty deidentified radiographs of patients with Legg-Calvé-Perthes disease in various stages. Ten of the twenty surgeons completed another two rounds of staging after the addition of a second pair of radiographs in sequence. Kappa values were calculated within and between each of the rounds.



Results: Interobserver kappa values for the classification for surveys 1, 2, 3, and 4 were 0.81, 0.82, 0.76, and 0.80, respectively (with 0.61 to 0.80 considered substantial agreement and 0.81 to 1.0, nearly perfect agreement). Intraobserver agreement for the classification was an average of 0.88 (range, 0.77 to 0.96) between surveys 1 and 2 and an average of 0.87 (range, 0.81 to 0.94) between surveys 3 and 4. Conclusions: The modified Waldenstrom classification system for staging of Legg-Calvé-Perthes disease demonstrated substantial to almost perfect agreement between and within observers across multiple rounds of study. In doing so, the results of this study provide a foundation for future validation studies, in which the classification stage will be associated with clinical outcomes.

Tenotomy or tenodesis for pathology of the long head of the biceps brachii: a systematic review and meta-analysis.

Gurnani N¹, van Deurzen DF, Janmaat VT, van den Bekerom MP.

Knee Surg Sports Traumatol Arthrosc. 2015 May 15.

PURPOSE

The objective of this meta-analysis is to compare clinical outcomes of tenotomy and tenodesis in the surgical treatment of long head of the biceps brachii (LHB).

METHODS

A literature search was conducted in Embase and PubMed from 2000 to April 2014. All studies comparing the clinical outcomes between LHB tenotomy and tenodesis were included. The quality assessment was done by utilizing the Coleman score. We included nine studies comprising 650 patients undergoing LHB tenotomy or tenodesis, mostly with concomitant shoulder pathology.

RESULTS

No significant difference in post-operative Constant score (mean difference 1.77), elbow flexion strength (mean difference 0), and forearm supination strength (mean difference 0.01) in favour of tenodesis was observed. A Popeye deformity (odds ratio 0.17) and cramping pain (odds ratio 0.38) in the bicipital groove muscle were less frequently seen in patients treated with tenodesis. The Coleman score ranged between 45 and 100 in the included studies.

CONCLUSION

Based on this meta-analysis, no differences in post-operative functional outcome between tenotomy and tenodesis for the treatment of LHB lesions were observed. A Popeye deformity and cramping pain in the bicipital groove are more frequently observed in patients treated with tenotomy.

Intramedullary versus extramedullary fixation in the management of subtrochanteric femur fractures: a meta-analysis.

Liu P, Wu X, Shi H¹, et al.

Clin Interv Aging. 2015 Apr 28;10:803-11.

BACKGROUND

Intramedullary and extramedullary fixation methods are used in the management of subtrochanteric femur fractures. However, whether intramedullary or extramedullary fixation is the primary treatment for subtrochanteric femur fractures in adults remains debatable.

LEVEL OF EVIDENCE

Meta-analyses of prospective studies, level I.

MATERIALS AND METHODS

The Cochrane library, Embase, Google Scholar, and PubMed databases were searched separately for all relevant studies published before January 1, 2015. No language restriction was applied. Prospective randomized controlled trials that compared intramedullary or extramedullary internal fixation to repair subtrochanteric femur fractures in adults were included. We determined intraoperative data, postoperative complications, fracture fixation complications, wound infection, hospital stay days, and final outcome measures to assess the

relative effects of different internal fixation methods for the treatment of subtrochanteric femur fractures in adults.

RESULTS

Six studies were included in our meta-analysis. The relative risks (RRs) of revision rate was 83% lower (RR, 0.17, 95% confidence interval [CI], 0.05 to 0.60; P=0.006), fixation failure rate was 64% lower (RR, 0.36, 95% CI, 0.12 to 1.08; P=0.07), non-union rate was 77% lower (RR, 0.23, 95% CI, 0.07 to 0.81; P=0.02) in the intramedullary group compared with the extramedullary group. No significant differences were found between the intramedullary group and extramedullary group for intraoperative data, postoperative complications, wound infection, hospital stay days or final outcome measures.

CONCLUSION

In conclusion, our meta-analysis suggests that there was no significant difference in intraoperative data, postoperative complications, wound infection, hospital stay days or final outcome measures between intramedullary and extramedullary internal fixation. However, a significant decrease occurred in the rate of fracture fixation complications for patients treated with intramedullary internal fixation, especially in elderly patients. Some differences were not significant, but the treatment of elderly subtrochanteric femur fractures using intramedullary internal fixation is recommended.

