SELECTED ABSTRACTS

Rotator cuff lesions in patients with stiff shoulders. A prospective analysis of 379 shoulders

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Background

Idiopathic adhesive capsulitis is defined as a frozen shoulder with severe and global range-of-motion loss of unknown etiology. The purpose of our study was to clarify the prevalence of rotator cuff lesions according to patterns and severity of range-of-motion loss in a large cohort of patients with stiff shoulders.

Methods

Rotator cuff pathology was prospectively investigated with use of magnetic resonance imaging (MRI) or ultrasonography in a series of 379 stiff shoulders; patients with traumatic etiology, diabetes, or radiographic abnormalities were excluded. Eighty-nine shoulders demonstrated severe and global loss of passive motion (≤100° of forward flexion, ≤10° of external rotation with the arm at the side, and internal rotation not more cephalad than the L5 level) and were classified as having severe and global loss of motion (Group 1). The remaining 290 shoulders were divided into two groups: those with severe but not global loss (Group 2; 111 shoulders) and mild to moderate limitation (Group 3; 179 shoulders).

Results

Among all shoulders, imaging demonstrated an intact rotator cuff in 51%, a full-thickness tear in 35%, and a partial-thickness tear in 15%. In Group 1, 91% had an intact rotator cuff and 9% had a partial-thickness rotator cuff tear. No patient in this group demonstrated a full-thickness tear. In Group 2 and Group 3, respectively, 44% and 35% of the shoulders were intact, 17% and 16% had a partial-thickness tear, and 39% and 50% had a full-thickness tear.

Conclusions

Shoulder stiffness with severe and global loss of passive range of motion is not associated with full-thickness rotator cuff tears, although some patients may have a partial-thickness tear. Shoulders with severe and global loss of range of motion at a first visit are likely to be cases of idiopathic adhesive capsulitis and may not require further imaging studies.

Commentary

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This paper analyses over 379 frozen shoulders prospectively. The main aim of the study is to see the prevalence of rotator cuff lesion in patients with adhesive capsulitis (frozen shoulders)

The range of motion in the 379 were grouped in to three depending loss of mobility from severe (group 1) to Mild (group 3)

Rotator cuff pathology has been studied using MRI imaging and ultrasonography

Results suggest that in severe loss of motion (Group 1) 91% had intact rotator cuffs while 9% had partial thickness while none had full thickness tears. Similarly in Group 2 and Group 3, respectively, 44% and 35% of the shoulders were intact, 17% and 16% had a partial-thickness tear, and 39% and 50% had a full-thickness tear.

Results suggest that rotator cuff lesions mainly full thickness tears are unlikely to cause adhesive capsulitis mainly the advance type that limits shoulder motions in all directions.

Authors conclude that adhesive capsulitis is mostly idiopathic in origin and does not warrant routine imaging such as MRI scanning

Clinical diagnosis suffices to initiate treatment.

In a country such as Sri Lanka with a low resource setting on one hand and rapid movement towards investigation oriented practice on the other this is a highly important point to note.

Still in our practice some surgeon still prefer not to even take a plain X- ray for a frozen shoulder in the first visit and quite rightly so as treatment based on clinical judgment appear to be the right thing to do in treating frozen shoulders.

Tubeless Percutaneous Nephrolithotomy Using Antegrade Tether: A Randomized Study
Agrawal MS et al. Journal of Endourology 2014; 28(6): 644-648.doi:10.1089/end.2013.0693.

Background

Tubeless percutaneous nephrolithotoomy (PCNL), although an accepted technique by now, continues to suffer from two major limitations: The need for postoperative cystoscopy for ureteral stent removal and inability to perform a "second-look" procedure for any residual fragments. We share our experience with a modification of the standard tubeless PCNL technique that allows us to overcome these shortcomings.

Methods

A total of 166 patients selected to have PCNL were randomized into two groups of 83 each. In group A (control group), the patients underwent standard PCNL with the insertion of a nephrostomy tube at completion; in group B (intervention group), modified tubeless PCNL was performed with a Double-J (DJ) stent inserted with a tether attached to its proximal end, taken out through the percutaneous tract. The nephrostomy tube in group A was removed postoperatively on the second or third day, whereas those in group B had the stent removed directly by pulling the attached tether within the office setting 10 to 14 days postoperatively.

Results

The need for postoperative analgesia was significantly higher in group A compared with group B (mean dose of tramadol needed, 128 mg vs 81.3 mg) (P<0.001). Four patients in group A had postoperative urinary leakage from the nephrostomy site, whereas there were no leaks in patients in group B. Group B patients spent significantly shorter average time in hospital (21.6 hours) compared with group A (54 hours) (P<0.001). Two of the patients in group B needed a second-look procedure, performed by the insertion of a guidewire down the stent, which was pulled out partially by its tether. Presence of the tether in the flank or the process of subsequent removal did not cause any discomfort to any patient.

Conclusion

The present study demonstrates that tubeless PCNL with a tethered DJ stent overcomes its main drawback, namely, the need for cystoscopy for stent removal, and also allows access to the pelvicaliceal system for second-look nephroscopy.

Commentary

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The concept of a "tubeless" PCNL has been the subject of great interest over the last decade. A number of studies (including randomized controlled trials) have detailed improved postoperative pain outcomes for patients undergoing a tubeless procedure compared with those undergoing conventional PCNL with a post-operative indwelling nephrostomy tube.

In this study, the researchers randomized 160 patients to receive tubeless PCNL with double-J stent with an antegrade tether (stent placed "upside down" so that the tether exits the patient's flank) versus traditional PCNL with a nephrostomy tube. The tubeless group had decreased analgesic requirements, shorter hospital stay, and less postoperative urinary leakage. Importantly, the antegrade tether allowed second-look access (wire placed through pulled stent) and obviated a second procedure (a cystoscopy for stent removal).

Although the authors describe good success with this approach, a persistent concern is breakage of the tether during removal, potentially leading to a "lost" double-J stent in the patient's flank (this did not occur in this study).

The concept of a "totally tubeless" PCNL has been proposed, and indeed is commonly performed in some centres, and is advantageous in patients with a solitary kidney, multiple tracts for renal access, punctures made

supracostally, impaired renal function, and even in patients undergoing simultaneous bilateral PCNL. Some urologists still prefer securing antegrade drainage of urine (with a ureteral stent or a catheter) when performing tubeless PCNL.

As shown in this study and many other studies "tubeless" PCNL is superior to conventional PCNL. However a post-operative indwelling nephrostomy tube becomes selectively necessary if there is any significant bleeding, injury to the collecting system or residual stone burden found at completion. Therefore the decision to leave an indwelling nephrostomy tube should be taken intra-operatively rather than pre-operatively.

Magnetic resonance imaging of acute appendicitis in pregnancy: a 5-year multi-institutional study.

Burke LM et al. Am J Obstet Gynecol. 2015 Jul 24. pii: S0002-9378(15)00776-0. doi: 10.1016/j.ajog.2015.07.026. [Epub ahead of print]

Objective

To determine the diagnostic performance of magnetic resonance imaging (MRI) in the diagnosis of acute appendicitis during pregnancy in a multi-institutional study.

Methods

In this multicenter retrospective study, pregnant females who underwent MRI evaluation of abdominal or pelvic pain and had clinical suspicion of acute appendicitis between June 1, 2009 and July 31, 2014 were reviewed. All MRI examinations with positive findings for acute appendicitis were confirmed with surgical pathology. Sensitivity, specificity, negative predictive values and positive predictive values were calculated. Receiver operating characteristic curves were generated and area under the curve analysis was performed for each participating institution.

Results

9.3% (66/709) had MRI findings of acute appendicitis. Sensitivity, specificity, accuracy, positive predictive value, and negative predictive values were 96.8%, 99.2%, 99.0%, 92.4%, and 99.7%, respectively. There was no statistically significant difference between centers included in the study (pair-wise p values ranged between 0.12-0.99).

Conclusions

MRI imaging is useful and reproducible in the diagnosis of suspected acute appendicitis during pregnancy

Commentary

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Diagnosis of acute appendicitis is particularly difficult during pregnancy, because of higher prevalence of abdominal complaints, anatomical changes and physiological leukocytosis that occurs during this period. The incidence of acute appendicitis in pregnancy is low (9,3%) out of 709 suspected cases in this study. Although US scan is the most frequently performed imaging modality, MRI remains the most sensitive and specific investigation to date. In addition, availability of MRI in a timely fashion is a global issue. I note that 5 false positive cases of appendicitis were reported in my institution. They were all operated and histopathologically reported as deciduosis of the appendix, which is a condition not widely reported in the literature.

Does osteoporosis have a negative effect on the functional outcome of an osteoporotic distal radial fracture treated with a volar locking plate?

Choi, W.S et al. Bone & Joint Journal 2015; 97-B: 229–34

Introduction

The popularity of internal fixation of unstable osteoporotic distal radial fractures using a volar plate has increased recently with the development of locking plates, and is often undertaken because of its technical simplicity, favourable outcomes and reliable stability. Although there seems to be a consensus that the outcome of patients with unstable distal radial fractures treated with a volar locking plate is favourable, the effect of osteoporosis on the functional outcome

remains controversial The purpose of this study was to determine the effect of osteoporosis on the functional outcome of osteoporotic distal radial fractures treated with a volar locking plate.

Methods

This was a retrospective study of a consecutive series of 212 patients who were treated Between 2009 and 2012 a total of 90 postmenopausal women with an unstable fracture of the distal radius treated with a volar locking plate were studied.

Results

Changes in the radiological parameters of 51 patients with osteoporosis (group 1, mean age 66.9, mean T-score –3.16 (SD 0.56)) were not significantly different from those in 39 patients without osteoporosis (group 2, mean age 61.1, mean T-score –1.72 (SD 0.57)). The mean Disabilities of the Arm, Shoulder and Hand (DASH) score at final follow-up was 11.5 (SD 12.2) in group 1 and 10.5 (SD 13.25) in group 2. The mean modified Mayo wrist score at final follow-up was 79.0 (SD 14.04) in group 1 and 82.6 (SD 13.1) in group 2. However, this difference was not statistically significant ($p = 0.35$ for DASH score, $p = 0.2$ for modified Mayo wrist score). Univariable and multivariable logistic regression analysis showed that only the step-off of the radiocarpal joint was related to both a poor DASH and modified Mayo wrist score. Pearson's correlation coefficient showed a weak negative relationship only between the T-score and the change in volar tilt (intra-class coefficient –0.26, $p = 0.02$).

Conclusion

We found that osteoporosis does not have a negative effect on the functional outcome and additional analysis did not show a correlation between T-score and outcome.

Commentary

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Distal radius fractures are extremely common among elderly population following a trivial trauma. Most of them are in elderly females due to their extremely poor quality of bone secondary to osteoporosis. Therefore the method of fracture fixation should be able to tolerate low quality of bone due to osteoporosis, preventing a future fixation failure and a poor functional outcome. As one of the most recognized inventions in orthopedic surgery, the locking plate is an implant which is independent of the quality of the bone, since the stability depends on the locking mechanism of the screw head to the plate, where as in a dynamic compression plate the stability maintained by the screw – bone contact. Therefore the locking plates are more favorable in osteoporotic bones than other conventional plate types (DCP-Dynamic compression plates, LCDCP-Low contact Dynamic compression plates). Thus it is unlikely that volar locking plate is a bad option for osteoporotic unstable distal radius fractures and the study confirms this contention. But even after a century from the explanation of Colles fracture by Abraham Colles, the best treatment mode to manage unstable distal radius fractures in any age group is yet to be revealed. American Academy of Orthopedic Surgeons 2009 clinical practice guidelines has published 29 recommendations on managing distal radius fractures but none received a grade of 'strong recommendation' including mode of fixation. The results from this study perhaps help lead to development of more definitive treatment strategies for this very common fracture.