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Classification and Analysis of Attritional Glenoid Bone Loss in Recurrent Anterior Shoulder Instability

SS-01

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MATTHEW PROVENCHER, M.D., PRESENTING AUTHOR

JOHN McNEIL II, B.A.

BRENDIN BEAULIEU-JONES, B.A.

GEORGE SANCHEZ, B.S.

ANDREW BERNHARDSON, M.D.

LANCE LeCLERE, M.D.

CHRISTOPHER DEWING, M.D.

JOSEPH LYNCH, M.D.

PETAR GOLJANIN, B.S.

ANTHONY SANCHEZ, B.S.



cognizant that the remaining bone fragment is unable to reconstitute glenoid bone stock. In addition, there was more attritional bone loss in patients with a longer duration of instability symptoms, indicating need for incorporating symptom duration in determining proper management.

Arthroscopic Treatment for Shoulder Instability with Glenoid Bone Loss Using Distal Tibia Allograft Augmentation

SS-02

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IVAN WONG, M.D., F.R.C.S.C., PRESENTING AUTHOR

EYAL AMAR, M.D.

CATHY COADY, M.D., F.R.C.S.(C)

DARYL DILLMAN, MEDICAL

BENJAMIN SMITH, MEDICAL

MARK GLAZEBROOK, M.D., PH.D., F.R.C.S.(C)

GEORGE KONSTANTINIDIS, M.D.



Introduction: Proper recognition and treatment of glenoid bone loss (GBL) is important for successful management of anterior shoulder instability. Although GBL has been thoroughly described in the literature, there is also a fragment of bone that is usually displaced and often undergoes attrition that has been little described. Thus, the purposes of this study include (1) to evaluate ABL of the glenoid fragment in recurrent anterior shoulder instability and (2) correlate ABL with clinical history, fragment size and radiographic findings.

Methods: GBL was evaluated on 3-dimensional (3D) computed topography (CT) en face view, and measured as percent loss. The bone fragment size was measured and attrition of the fragment was determined by evaluating the amount remaining relative to the initial defect; patients were stratified into minimal (<34%), moderate (34-67%) and severe (>67%) attritional loss groups. Clinical history and demographics were correlated to ABL, and comparison of GBL and ABL was performed.

Results: The overall median percent GBL was 15.3% (IQR, 9.9% - 20.0%) with a mean (SD) percent GBL of 16.5% (9.0%). Study participants had a corresponding median percent ABL of 75.8% (IQR, 53.8% - 95.7%) and a mean (SD) percent ABL of 72.0% (24.4%). A total of 61.2% of patients (n=85) exhibited severe ABL, while 30% had moderate ABL and 8.6% had minimal ABL. The total time of instability was significantly associated with percent attritional bone loss ($p<0.05$).

Conclusion: This study highlights that GBL, in most patients with recurrent anterior instability, presents with extensive attrition of the bone fragment independent of initial glenoid bone loss; therefore, surgeons should be

Introduction: The purpose of this study was to retrospectively analyze prospectively collected data to present the clinical and radiological short term outcomes of patients who underwent anatomic glenoid reconstruction using distal tibia allograft to treat shoulder instability with glenoid bone loss.

Methods: Over four years, 44 patients (31 patients were male and 13 female with mean age of 29.73 years) underwent arthroscopic stabilization with capsular-labral bankart repair and allograft bony augmentation of the glenoid for recurrent shoulder instability with significant bone loss by the same surgeon. 14 patients were revision cases of previous surgery. Preoperative and postoperative functional assessment was performed with the Western Ontario Shoulder Instability Index (WOSI) questionnaire, and radiological assessment was performed with radiographs and CT scans. Average followup time was 2 years.

Results: 97% (43/44) patients had no dislocations or subluxations at the most recent followup. The mean pre and postoperative WOSI scores were 40.54 and 72.65 respectively ($p<0.001$). No patients developed nerve injury. One patient presented with hardware failure at 3 years postop. Two other patients had complete graft absorption and 6 patients had partial graft resorption but none symptoms of instability. The mean postoperative active shoulder range of motion was forward flexion 170.1o, abduction 168.9o, internal rotation 69.5o and

external rotation 57.5°. Grafts positioning was flush with the glenoid in 93% of cases, vertical positioning was excellent in 89% (3-5 o'clock).

Conclusion: Arthroscopic stabilization of the shoulder with distal tibia allograft augmentation is a good safety profile technique with good results at average of two years follow up.

Distal Clavicular Osteochondral Autograft Augmentation for Glenoid Bone Loss: A Comparison of Radius of Restoration Versus Latarjet Graft

SS-03

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ADAM KWAPISZ, M.D., PRESENTING AUTHOR

KELLY FITZPATRICK, D.O.

JAY COOK, M.D.

JOHN TOKISH, M.D.



Introduction: The purpose of this paper is to evaluate a distal clavicular autograft for suitability for augmentation of glenoid bone loss in the setting of glenohumeral instability. Specifically, we sought to compare the radius of reconstruction of this graft with that of an ipsilateral coracoid graft as prepared for a Latarjet procedure. Further, we sought to compare the articular cartilage thickness of the distal clavicle graft with that of the native glenoid.

Methods: Twenty-seven fresh frozen cadaver specimens were dissected and an open distal clavicle excision was performed. In addition, the coracoid process in each specimen was prepared as is described for a Latarjet coracoid transfer. In each specimen, the distal clavicle graft was compared to the coracoid graft for size and potential of glenoid articular radius of restoration. The distal clavicle graft was also compared to the native glenoid for cartilage thickness.

Results: In all specimens, the distal clavicle grafts provided a greater radius of glenoid restoration than the coracoid grafts, $p = 0.00000008$. On average the clavicular graft restored 44% of glenoid diameter, compared to 33% in the case of the coracoid graft $p = 0.00000009$. Glenoid cartilage averaged 1.44 mm thicker in the native glenoid compared to the distal clavicular autograft, $p = 0.000008$. When specimens with OA were excluded this difference decreased to 0.97 when compared to the clavicular cartilage ($p = 0.0026$).

Conclusion: The distal clavicle autograft can restore a glenoid bone deficit of a greater radius than a coracoid as prepared for a Latarjet procedure, and provides a source of articular cartilage to the reconstruction. The articular cartilage thickness is within 1.5 mm of that of the native glenoid.

Complications Following Anterior Shoulder Instability Treatment: Bankart Repair Versus Latarjet

SS-04

May 18, 2017, 8:35 AM

RACHEL FRANK, M.D., PRESENTING AUTHOR



BRYCE BASQUES, M.D.

TIMOTHY LEROUX, M.D.

JUSTIN GRIFFIN, M.D.

ROBERT THORSNESS, M.D.

NIKHIL VERMA, M.D.

MATTHEW PROVENCHER, M.D.

ANTHONY ROMEO, M.D.

Introduction: The purpose of this study was to utilize a large population cohort to compare complication and reoperation rates following the Latarjet procedure to those following arthroscopic Bankart repair.

Methods: Using current procedural terminology codes, a population database was used to generate a cohort of patients who underwent Latarjet and Bankart repair between 2007-2014 in the United States. Complications following surgery were identified using ICD9 codes, including deep vein thrombosis/pulmonary embolus (DVT/PE), nerve injury, surgical site infection (SSI), hematoma, capsulitis, and dislocation, while CPT codes were used to determine overall and procedure specific reoperations, including irrigation and debridement (I&D), open reduction, and lysis of adhesions/manipulation under anesthesia.

Results: 5331 patients who underwent shoulder stabilization procedures between 2007 and 2014 were included. 4764 patients underwent arthroscopic Bankart repair (71.6% male), 428 patients underwent open Bankart repair (68.7% male), and 139 patients underwent Latarjet (75.5% male). There were significant increases in the annual rates of both arthroscopic Bankart repair (2007: 9.4% vs. 2014: 15.8%, $P < 0.001$) and Latarjet (2007: <7.91% to 20.9%, $P = 0.016$), while the number of open Bankart repairs decreased (2007: 16.8% vs 2014: 11.4%, $P = 0.002$). The odds of reoperation at 90-days, 6-months, and 1-year following the Latarjet procedure were 350%, 210%, and 250% greater than arthroscopic Bankart repair, respectively ($p < 0.001$ for all). The odds of a DVT/PE diagnosis (OR 8.2, $p = 0.02$) were significantly greater following Latarjet versus arthroscopic Bankart repair. The odds of a postoperative SSI, nerve injury, adhesive capsulitis, or I&D were not significantly different between patients undergoing Latarjet and arthroscopic Bankart repair.

Conclusion: The rate of utilization of Latarjet and arthroscopic Bankart repair has increased in the past seven years, while the rate of open stabilization has decreased. The odds of requiring a reoperation or developing any complication were greater following Latarjet versus arthroscopic Bankart repair.

The "Safe Zone" Technique Improves Suture Placement and Accuracy During Arthroscopic Remplissage: A Cadaveric Validation of A Novel Technique

SS-05

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CYNTHIA KAHLBERG, M.D., PRESENTING AUTHOR

GRANT GARCIA, M.D.

RYAN DEGEN, M.D., M.Sc., F.R.C.S.C.

