Shoulder Instability: Where Are We in 2014?

California Orthopaedic Association
June 1, 2014

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Shoulder Instability: Where Are We in 2014?

• Disclosures: Research support from Arthrex and Tornier
Shoulder Instability: Where Are We in 2014?

• Arthroscopic versus Open?
• When Should We Operate?
• Update in Treatment of Bony Deficit
Shoulder Instability Update

Conservative Treatment

- Immobilization techniques: Immobilization in neutral versus external rotation both effective.

Advantages

- ↑ pathology (SLAP)
- ↓ surgical morbidity (subscap)
- ↓ postop pain
- ↑ cosmesis
- ↑ rapid recovery

Disadvantages

- Learning curve
- Difficult suture techniques
- Complex knot tying
Open Repair Problems

- Rupture of Subscap after anterior open stabilization

  **11/165 (7%)**

Of those intact, a high incidence of muscle atrophy and fatty infiltration
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Arthroscopic vs. Open

- RPT comparing open and arthroscopic repair for recurrent ant shoulder instability show 2 groups have similar outcomes scores and rates of recurrence at 2 years follow-up

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Arthroscopic vs. Open

- Multiple studies reporting excellent results for open repair (Recurrence 5%)
- First generation arthroscopic repair techniques (staples or tacks) resulted in less reliable rates of success (recurrence 15-33%)
- Suture anchors resulted in better outcomes with 90-96% success rate
- 90% of surgeons now prefer arthroscopic repair as the initial procedure of choice

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Why Not Arthroscopic?

- Contact athletes
- Significant bone defects
  - “Engaging” Hill-Sachs
  - Glenoid wear or fx
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Contact Athletes

• No bony defect
  – 6/92 (6.5%)

• Bony Defect
  – 8/9 (89%)

Burkhart, et al., 2005
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Arthroscopic vs. Open

- In contact athletes, a recurrence rate of 89% noted in patients with a lesion to the anterior glenoid rim of 20 to 30% when treated arthroscopically

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Arthroscopic Long Term

• Longer term follow-up of acute arthroscopic repair following dislocation (mean f/u 11 years range 9-13)

• Recurrent dislocation rate of 14%

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Arthroscopic Long Term

• Prospective series examined patients treated with arthroscopic Bankart repair at 8 year follow up and found 35% recurrent dislocation rate.

• Pts treated with < or =2 suture anchors had a higher dislocation rate than pts treated with 3-4 anchors

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When should we operate?

- Acute traumatic anterior shoulder instability in the young active patient is controversial
- Recurrence rates as high as 92-95% reported with non-operative treatment
- Pts with large bony defects at the time of injury have a higher risk for recurrence

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When Should We Operate?

Pathologic lesions are more readily identified on MRI correlating with number of instability events

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When should we operate?

• Recent evidence supports offering young patients <22 years old with a first time dislocation surgical treatment due to the high recurrent instability rates

• Randomized prospective data suggests pts treated with arthroscopic Bankart repair after initial dislocation had an 82% risk reduction for recurrent instability

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When Should We Operate?

• Pts with acute glenoid bone lesions treated arthroscopically by incorporating them into the repair

• 93% success rate
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Long-term risk of osteoarthritis

- OA is known outcome of shoulder instability.
- A 5-20 year follow-up of shoulder patients treated with open Bankart repair noted early signs of OA preoperatively in 26% of patients
- Post-treatment, OA progressed in 32%
- Progression of OA correlated with the number of preoperative subluxations and total number of preoperative dislocations
- Male pts as well as patients with glenoid bone deficit were at increased risk of progression

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When should we operate?

Surgeon practices have been evolving over the past 10 years, with over 68% of surgeons offering surgery to first time dislocators who are young.
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Associated Injuries

- Risk of recurrent dislocation decreased with age
- Older than 40 increased risk of rotator cuff tears and neurologic injury
- Over 60 there is correlation with greater tuberosity fractures and rotator cuff tear and neurologic injury

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Bone Loss

Humeral and glenoid bone loss in patients with anterior instability can increase failure rates of standard arthroscopic instability.

Biomechanical cadaver studies show a significant decrease in anterior shoulder stability with bone loss of glenoid 21%.

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Glenoid Deficiency

- Defects of glenoid greater than 25-30 percent, a bony procedure is often necessary.
- Laterjet has low recurrence rate
- Bristow, bone grafting with iliac crest bone graft and allograft have been used
- Concerns about post-operative arthrosis and limitations in shoulder motion following non-anatomic coracoid reconstruction
- Coracoid bone resorption has been reported following Laterjet, clinical significance unknown
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Glenoid Bone Loss

Arthroscopic Glenoid Bone Grafting With Nonrigid Fixation for Anterior Shoulder Instability 52 Patients With 2- to 5-Year Follow-up

- Arthroscopic Glenoid Bone Grafting option for recurrent instability
- 2-5 year follow-up
- All grafts healed with no resorption based on CT
- Possible option for recurrent instability
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Humeral bone loss

- Humeral bone loss from a Hill-Sachs lesion can contribute to instability due to loss of radius of curvature of the humeral head.
- 25% humeral head defect results in significant differences in joint translation, capsular force and bony contact force.
- Isolated humeral defect after anatomic labral and capsular repair, not a risk factor for recurrent instability.

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Humeral Head Deficiency

• Humeral head defects larger than 25% may be considered for osteochondral allograft, remplissage or infra transfer into the defect
• Lesions over 40% should be highly considered for humeral arthroplasty or bone graft
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Take Home Points

• Arthroscopic Bankart Repair is now preferred as a first time surgery by most surgeons in the US

• Long-term recurrence rates following arthroscopic repair are concerning: use at least 3 anchors

• Young, first-time dislocators are operative candidates

• Patients with glenoid bone deficiencies are much more likely to have recurrent instability and might require a “non-anatomic” bony procedure
Thank You!