Posterior Shoulder Instability

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Classification of Posterior Instability

- Dislocation
  - acute
  - chronic - fixed or locked

- Subluxation (component of MDI)
  - involuntary
  - voluntary - “parlor or party trick”

- Traumatic, recurrent
Traumatic Posterior Subluxation

- Fall on FE/ADD arm
- Axial blow with arm in FE/ADD
- Collision/contact athletes
- Reproducible click and pain with posterior stress or loading
- + Kim sign (JBJS 2004)
Painful Jerk Test (Kim, AJSM 04,05)

- Pain or click: posterior labral lesion
- Predictor of success with nonoperative treatment
▪ Recurrent posterior shoulder instability with initial “traumatic etiology”
▪ Posterior pain with click, crepitus, or ‘jerk’ sign
▪ Failed rehabilitation
▪ No MDI
▪ Outcomes:
▪ Rowe score, SST, SANE
▪ WOSI
Results:
Traumatic Posterior Instability

Pathology
- ‘reverse Bankart’- 91%
- capsular laxity
Arthroscopic Posterior Labral Repair Technique:

- Lateral decubitus
- Distal/overhead traction

**Tools:**
- 7.0 & 8.25 cannulas
- Crescent hooks for suture shuttling
- Anchor: loop eyelet
Arthroscopic Posterior Repair

Suture anchors (17)
- Started scope posterior
- Switch scope to ASP
- Twin posterior portals
- Twin anterior portals
- ‘O’ PDS shuttle nonabs. Suture
- Combination plication, labral repair
Arthroscopic vs. Open Stabilization for Traumatic Posterior Instability

- June 1996 – Dec 2002
  34 shoulders
  33 patients
- 24 arthroscopic; 10 open
- Avg.age: 23 (15-39)
- 31 M, 3 F
- Follow-up: 27 mo. (15-63)

Bottoni, Arciero AJSM 2005
# Shoulder Outcomes

<table>
<thead>
<tr>
<th></th>
<th>SANE</th>
<th>Rowe</th>
<th>SST</th>
<th>WOSI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>average</strong></td>
<td>84</td>
<td>80</td>
<td>10.8</td>
<td>495</td>
</tr>
<tr>
<td><strong>arthroscopic</strong></td>
<td>87</td>
<td>92*</td>
<td>11.2</td>
<td>189*</td>
</tr>
<tr>
<td><strong>Open</strong></td>
<td>80</td>
<td>80</td>
<td>10.3</td>
<td>594</td>
</tr>
</tbody>
</table>

*P<.05
Current technique: Set-up
Primary Anterior Portal- March 05

- Start with anterior superior viewing portal
- b/n anterolateral edge of acromion and coracoid
- Permits accurate posterior portal
- Only one posterior portal needed
Scope started anterior
Posterior portal

18 g needle
Improving exposure

“bump trick”
3 portals established

Note how ‘lateral’ posterior portal
Prepare posterior labrum and scapula from anterior
‘O’ PDS placed with capsular tuck using Spectrum
1st posterior anchor placed @ 7 o’clock
One limb of Fiberwire taken to AIP
Fiberwire tied to ‘O’ PDS and shuttled
1st post-inf anchor tied
3rd posterior anchor
Satisfactory Results in 28/34

Pathoanatomic repair
# Arthroscopic Posterior Capsulolabral Reconstruction

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Patients</th>
<th>Assessment Metrics</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Kim et al.</td>
<td>JBJS 03</td>
<td>27 pts</td>
<td>UCLA, ASES</td>
<td>&gt; 90% Exc/good</td>
</tr>
<tr>
<td>Bottoni et al.</td>
<td>AJSM 05</td>
<td>31 pts</td>
<td>WOSI, SST, SANE, Rowe</td>
<td>29/31 Exc/good</td>
</tr>
<tr>
<td>Provencher et al.</td>
<td>AJSM 05</td>
<td>33 pts</td>
<td>WOSI, SANE</td>
<td>26/33 Exc/good</td>
</tr>
<tr>
<td>Bradley et al.</td>
<td>AJSM 2006</td>
<td>91 pts</td>
<td>ASES</td>
<td>89% Exc/good</td>
</tr>
</tbody>
</table>
Posterior Subluxation (Involuntary)

- Repetitive microtrauma
- PAIN primary symptom
- Involuntary subluxation
  - FF/ADD to ABD/EXT
- No Bankart
- Not voluntary!!!
- Component MDI
- Swimmers, overhead athletes
Indications for Surgery

- Failed rehabilitation of 4-6 mos.
  - Cuff muscles
  - Scapular stabilizers
- ADL’s and activity compromised
Pathoanatomy

- Capsular laxity
- “loss of chondrolabral containment” (Kim JBJS 2005)
- “osseous, chondrolabral retroversion” (Bradley et al, AJSM 2006)
Arthroscopic Posterior Capsulorrhaphy

- Start with scope posterior
  
or

- Start with scope anterior:
  optimum posterior portal
  for instrumentation
Posterior Capsulorrhaphy

- Posterior-inferior plication
- “Mattress-plication stitch”
  - capsular redundancy
  - builds up labrum
- Anterior inferior plication
  - balances IGHL
- Rotator interval closure
Posteroinferior Multidirectional Instability: “Kim lesion”

- Incomplete, concealed avulsion of the posteroinferior labrum in posterior MDI

Kim et al, Arthroscopy 2004
# Arthroscopic Posterior Capsular Plication/Capsulolabroplasty for Posterior MDI

<table>
<thead>
<tr>
<th>Study Authors</th>
<th>Number of Patients</th>
<th>Follow-up</th>
<th>Findings</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wolf, Eakin Arthro 1998</td>
<td>14 pts.</td>
<td>2 year f.u</td>
<td>12 had &quot;some&quot; labral path.</td>
<td>12 exc. 2 fair</td>
</tr>
<tr>
<td>Antoniou et al JBJS 2000</td>
<td>41 pts</td>
<td>f/u: 27 m</td>
<td>83% with chondrolabral lesions</td>
<td>35/41 with Exc/good results</td>
</tr>
<tr>
<td>Kim et al AJSM 2004</td>
<td>31 pts.</td>
<td>f/u: 51 m</td>
<td>Labral lesions in all</td>
<td>30/31 Exc/good</td>
</tr>
</tbody>
</table>
Posterior instability with bone loss: Humeral Head Defects “Reverse Hill-Sachs”

- Allograft
- Transfer of lesser tuberosity
- ‘Cap’ hemiarthroplasty
- Disimpaction technique
Posterior glenoid bone loss

- Retroversion
- Bone loss

Options:
- Glenoid osteotomy
- Iliac crest
- Acromial bone block

Posterior labral tear with bone loss
Posterior glenoid bone loss

Options:
- Glenoid osteotomy
- Iliac crest
  ** post-op OA
- Acromial bone block
  (extra-capsular)
Other options:
Posterior bone block: from scapular spine

- Scapular spine marked 2.5cm x 15mm
- Posterior part of middle deltoid reflected
- Capsule exposed
21 yo traumatic posterior instability

- + jerk test
- + Kim test
- CT scan:

Too much bone loss??
Arthroscopic posterior labral repair/capsulorrhaphy
Failed at one year
EVALUATION & TREATMENT OF THE INJURED ATHLETE

ADVANCED TOPICS IN SURGERY AND REHABILITATION
21 yo college female with 5 prior shoulder stabilizations:
3 anterior; 2 posterior
Thank you