Shoulder Dislocations

James W. Larson III, MD
The Hughston Clinic
Athletic Training Fellows Conference
Columbus, Georgia
Epidemiology

- Shoulder dislocations are most common major joint dislocation.
- Function requires large range of motion.
- Stability is from soft tissues and not from bony encasement.
Epidemiology

- Two Peaks in incidence: in 16-30 and 60-80 years of age
- Injuries in young people usually due to sport.
- Injuries in older group due to falls around the house.
- Incidence of about 20 per 100,000.
Mechanism

- In sports, often occurs when a posterior force is directed onto an abducted arm, or with a fall onto an outstretched arm.
Inferior dislocation

- An inferior directed force on an arm in throwing position can cause a rare inferior shoulder dislocation
Luxatio Erecta
Recognition
Reduction
Reduction

- Make sure the weight is off the floor.
Reduction

- Luxatio Erecta
Post reduction treatment

- Sling, immobilization with ROM as tolerated
- Progressive return to sports as pain allows
- Prophylactic bracing
Factors Related to Redislocation

- Age
- Activity
- Anatomic factors
Recurrence of Dislocation in Relation to Age
Anterior dislocation of the shoulder in teenagers and young adults

- 55% 2 or more <22
- 37% 2 or more 23-29
- 12% 2 or more >29

Hovelius

_J bone Joint Surg_ 1987
Over half had recurrent dislocations
Half of recurrences had surgical treatment

Quoted in Rockwood/Matsen, 2nd Edition
Only half of the recurrences treated nonoperatively were stable at 10 years.

Immobilization did not effect the rate of recurrences.
Prognosis in Anterior Shoulder Dislocation

- 116 Shoulder Dislocations
  - 33% recurrence
  - 66% <20
  - 40% 20-40
  - 80% Athletes <20
  - 30% nonathletes <20

William T. Simonet, M.D.
Robert H. Cofield, M.D.

AJSM, Vol. 12, No. 1, 1984
Does Immobilization Help?
Natural History of Glenohumeral Dislocation-Revisited

- 121 Athletes
- 62 Immobilized (90% redislocate)
- 59 Not immobilized (85% redislocate)

Jack H. Henry, M.D.
John A. Genung, M.D.
AJSM, Vol. 10, No. 3, 1982
Treatment in External Rotation?

- Short term followup of dislocations treated in ER sling showed decreased redislocation rate but poor compliance, and poor usage by emergency room staff.
The Pathology and Treatment of Recurrent Dislocation of the Shoulder Joint.

Bankart

Br J Surg 1938
“Ordinary dislocation of the shoulder is the commonest of all dislocations of the joints. It is caused by a fall on the abducted arm. In extreme abduction the neck of the humerus impacts against the acromion process, and then by leverage, the head is forced through the lowest and weakest part of the capsule between the subscapularis and triceps muscle...
“I have now exposed the typical lesion of recurrent dislocation - namely, detachment of the glenoid ligament from the anterior margin of the glenoid cavity - at operation in 27 consecutive cases...
Essential Lesion

A Bankart lesion occurs in the lower part of the labrum.
Arthroscopic evaluation of acute initial anterior shoulder dislocations

CHAMP L. BAKER,†† MD, JOHN W. URIBE.§ MD, AND COURTENAY WHITMAN,|| MD

From the † Hughston Orthopaedic Clinic, PC, Columbus, Georgia, § Doctors Hospital, Coral Gables, Florida, and || Womack Army Hospital, Fort Bragg, North Carolina

ABSTRACT

Arthroscopic evaluation of patients with an acute anterior shoulder dislocation was done to identify and classify the intraarticular lesions that might predict recurrent dislocations. Forty-five shoulders fit the following criteria for inclusion in our study: initial dislocation with no prior history of shoulder problems; confirmation of the dislocation radiographically or reduction by a physician; and arthroscopy within 10 days. The 42 men and 3 women had an average age of 21.2 years (range, 14 to 28 years). Mechanism of injury was a twisting of the arm into forced abduction and external rotation, a fall on the outstretched arm, or a direct blow to the shoulder.

Based on this preliminary study of 45 shoulders, we present a classification of the lesions found in the acute shoulder dislocation. Group 1 (six shoulders) had capsular tears with no labral lesions; these shoulders were stable under anesthesia and had no or minimal hemorrhage. Group 2 (11 shoulders) had capsular tears and partial labral detachments; these shoulders were mildly unstable and had mild to moderate hemorrhage. Group 3 (28 shoulders) had capsular tears with labral detach-
Acute dislocations
< 24 hrs, x-ray confirmed

- Selected:
  - Initial dislocation
  - Traumatically induced
  - No prior instability or pain

- All Patients examined arthroscopically
45 Patients, <21 yrs, first dislocation
- 18 Hill-sachs
- 5 Rotator cuff tears
- 3 Loose bodies
- 2 Glenoid avulsion Fx
Hill-Sachs
Baker Type I
6 of 45

- Capsular tear without labrum pathology
- Stable under anesthesia
- Hemorrhage between MGHL & IGHL
- Minimal hemarthrosis
- Partial labral tear
- Anterior subluxation under anesthesia
- Varied instability
- Moderate hemarthrosis
- Complete disruption anterior labrum
- Frank dislocation under anesthesia
- Large hemarthrosis
- Hill-Sachs lesion (18/28)
Intra-articular Pathology in Acute First Time Dislocators

- 24 Patients
  - 24 labrums (MGHL/IGHL)
  - Hill-Sachs (6/24)
  - Pathology could not predict recurrence

Rolf Norlin, M.D.
*Arthroscopy, Vol. 9, No. 5, 1993*
Arthroscopic Findings After Shoulder Dislocation

- 212 Patients
  - 87% - Anterior labrum
  - 79% - Capsular insufficiency
  - 68% - Hill-Sachs fracture

Beat Hinterman, M.D.
Andre Gachter M.D.
AJSM Vol. 23 No. 5 1995
Why Scope Acute Dislocations?

- Diagnosis – MRI under-calls injuries
- Plan treatment
- Definitive treatment
- Philosophy of early intervention in athletes with initial dislocation more important than method
<table>
<thead>
<tr>
<th>Lesion</th>
<th>MRI</th>
<th>Arthroscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bankart lesions</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Labral tears</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Hill-Sachs lesions</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Complete RCT</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Partial RCT</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Partial biceps lesion</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Osseous Bankart lesion</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
Arthroscopic findings in acute vs. chronic traumatic anterior shoulder dislocation

-Habarmeyer/Gleyze
## Number of Lifetime Dislocations

(92 patients)

<table>
<thead>
<tr>
<th>Group I</th>
<th>1</th>
<th>(10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group II</td>
<td>1-2</td>
<td>(12)</td>
</tr>
<tr>
<td>Group III</td>
<td>3-5</td>
<td>(23)</td>
</tr>
<tr>
<td>Group IV</td>
<td>&gt;5</td>
<td>(32)</td>
</tr>
<tr>
<td>Group V</td>
<td>sublux</td>
<td>(15)</td>
</tr>
</tbody>
</table>
Prospective Study
(92 patients)

<table>
<thead>
<tr>
<th>Group</th>
<th>Range</th>
<th>Count</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>(10)</td>
<td>Glenoid rim</td>
</tr>
<tr>
<td>II</td>
<td>1-2</td>
<td>(12)</td>
<td>Detached labrum</td>
</tr>
<tr>
<td>III</td>
<td>3-5</td>
<td>(23)</td>
<td>IGHL</td>
</tr>
<tr>
<td>IV</td>
<td>&gt;5</td>
<td>(32)</td>
<td>ALPSA</td>
</tr>
<tr>
<td>V</td>
<td>sublux</td>
<td>(15)</td>
<td>Volume increased/time</td>
</tr>
</tbody>
</table>
Conclusion

- Continuity of pathological deformation by the increasing number of recurrences **DEMANDS** early repair of posttraumatic anterior instability.
Surical repair

Bankart Lesion

Repair
Surgical Repair
Summary: Our purpose was to compare the effectiveness of traditional treatment with immediate arthroscopic stabilization in young patients who have sustained a first traumatic anterior dislocation of the shoulder. Forty skeletally mature patients younger than 30 years of age were randomly allocated to immobilization for 3 weeks followed by rehabilitation (group T) or arthroscopic stabilization (within 4 weeks of injury) followed by an identical immobilization and rehabilitation protocol (group S). A blinded research assistant performed all follow-up evaluations. The dominant arm was involved in 35% of subjects. The injury occurred in a sporting event in 70% of subjects. At 24 months, there was a statistically significant difference in the rate of redislocation (T = 47%, S = 15.9%, P = .03). An intention-to-treat analysis comparing disease-specific quality of life using the validated Western Ontario Shoulder Instability (WOSI) index showed statistically significantly better results in the surgically treated group at the 33 months (T = 633.93 ± S = 287.1, P = .03) and no significant difference in range of motion. At an average 32 months follow-up, a significant reduction in redislocation and improvement in disease-specific quality of life is afforded by early arthroscopic stabilization in patients less than 30 year of age with a first, traumatic, anterior dislocation of the shoulder. Key Words: Arthroscopic stabilization—Primary anterior dislocation—Shoulder.
● Immobilization
  – 20 patients
  – 47% recurrence
  – WOSI lower

● Surgical (transglenoid)
  – 20 patients
  – 15% recurrence
  – WOSI higher
“The most important finding of the study relates to the data on disease-specific quality of life. Patients treated traditionally who have never redislocated do not have ‘normal’ shoulder function.”

-Kirkley, et.al.
Arthroscopic Repair of Acute Traumatic Anterior Shoulder Dislocation in Young Athletes

Mario V. Larrain, M.D., Guillermo J. Botto, M.D., Hugo J. Montenegro, M.D., and David M. Mauas, M.D.

Purpose: To compare the results of arthroscopic repair in acute anterior shoulder traumatic dislocation with those of nonoperative treatment. Type of Study: A prospective, nonrandomized study was performed. Methods: Between August 1989 and April 1997, 46 patients were seen after a first episode of traumatic anterior shoulder dislocation. The average age was 21 years (range, 17 to 27 years). Most dislocations were in rugby players (36 patients). There were 18 patients treated by nonoperative methods and 28 patients treated by arthroscopic repair; 22 patients using transglenoid suture and 6 patients with bone anchor suture fixation. Results: Of the patients treated nonoperatively, 94.5% suffered a redislocation between 4 and 18 months (average, 6 months). In the operative group, 96.6% of the patients (27) obtained excellent results according to the Rowe scale. Only 1 patient suffered a redislocation 1 year after surgery. Three different types of lesions were found during surgery: group I, capsular tear with no labrum lesion (4%); group II, capsular tear with partial labrum detachment (27%); and group III, capsular tear and full anterior labrum detachment (69%). The average follow-up was 67.4 months (range, 28 to 120). There were no surgical complications. Conclusions: The operative group obtained 96% excellent results, but the nonoperative group only obtained 5.5% excellent results, according to the Rowe scale. The nonoperative group showed a high incidence of redislocation (94.5%) compared with the operative group (9%). Based on the findings of this study, we recommend using an arthroscopic evaluation and repair after an initial anterior traumatic shoulder dislocation in young athletes. Key Words: Arthroscopy—Acute anterior shoulder dislocation—Transglenoid suture—Suture anchor—Traumatic dislocation—Athletes.
Larrain et. al.

- Prospective nonrandomized study
- Nonop – 94.5% redislocated (6 mo ave)
  Operative – 96% excellent (67 mo fu)
Prospective Evaluation of Arthroscopic Stabilization of Acute, Initial Anterior Shoulder Dislocations in Young Athletes: Two- to Five-Year Follow-up

DeBerardino, Arciero, Taylor & Uhorchak

AJSM Vol 29, No 5 2001
DeBerardino, et.al.

- 2-5 year follow-up
- Operative 43/49 stable (88%)
  Nonop 4/6 unstable (67%)
- Factors associated with failure
  - Bilateral shoulder instability
  - 2+ sulcus sign
  - Poor capsulolabral tissue
Early Arthroscopic Repair

- Lowers redislocation rate
- Improves quality of life
- Not technique sensitive
- Not needed every patient
- Young athlete, high risk (17-23)