

ANTERIOR SHOULDER INSTABILITY which operation is best?

Dr Jerome Goldberg



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DISCLOSURE

- Arthrex fund POW Shoulder fellowship
- Co Director of POW Orthopaedic Research Laboratory
- MAC of Device Technologies
- Chairman AusBio
- Board member of International Board of Shoulder Surgery



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CALGARY INSTABILITY TRIAL

A Randomized Clinical Trial Comparing Open and Arthroscopic Stabilization for Recurrent Traumatic Anterior Shoulder Instability

Two-Year Follow-up with Disease-Specific Quality-of-Life Outcomes

Nicholas G.J. Mohrabi, MD, MSc, FRCS, Denise S. Chan, MPT, MSc, Robert M. Hollinshead, MD, FRCS, Richard S. Boettner, MD, MSc, FRCS, Laurie A. Hiemstra, MD, PhD, FRCS, Ian K.Y. Lo, MD, FRCS, Heather N. Hannaford, BKin, Jocelyn Fredline, BKin, CAT(C), Terry M. Szyniuk, MSc, and Elizabeth Oddone Paolacci, PhD

Investigator performed at the University of Calgary Sport Medicine Centre, Calgary, Alberta, Canada

Background: The literature comparing open and arthroscopic repair for glenohumeral instability is conflicting. We performed a prospective, expertise-based, randomized clinical trial to compare open shoulder stabilization with arthroscopic shoulder stabilization by measuring quality-of-life outcomes and recurrence rates at two years among patients treated for traumatic anterior shoulder instability.

Methods: Computer-generated, variable-block-size, concealed randomization allocated 196 patients to either the open-repair group (n = 98) or the arthroscopic-repair group (n = 98). An expertise-based randomization design was employed to avoid a differential bias in terms of physician experience. Outcomes were measured at baseline, at three and six months postoperatively, and at one and two years postoperatively with use of the Western Ontario Shoulder Instability Index (WOSI) and the American Shoulder and Elbow Surgeons (ASES) functional outcome scale. Recurrent instability was also analyzed.

Results: There were no significant differences in outcome scores at baseline. At two years, seventy-nine patients in the open group and eighty-three patients in the arthroscopic group were available for follow-up. There was no significant difference in mean WOSI scores between the groups; the mean WOSI score (and standard deviation) for the open group was 85.2 ± 20.4 (95% confidence interval [CI] = 80.5 to 89.8), and for the arthroscopic group, 81.9 ± 19.8 (95% CI = 77.4 to 86.4); $p = 0.31$. There was also no significant difference in mean ASES scores: 91.4 ± 12.7 (95% CI = 88.5 to 94.4) for the open group and 88.2 ± 15.9 (95% CI = 84.6 to 91.8) for the arthroscopic group; $p = 0.17$. Recurrence rates at two years were significantly different: 11% in the open group and 23% in the arthroscopic group ($p = 0.05$). Recurrent instability was more likely in patients with a preoperative Hill-Sachs lesion and in male patients who were twenty-five years old and younger. There was no significant difference in shoulder motion between the groups at two years.

LO JBJS 96A 353 2014



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METHODS

Database of all surgeries
commenced 1990

Access program

Reviewed all surgeries for
instability

- Except pure posterior
instability
- Included anterior and MDI



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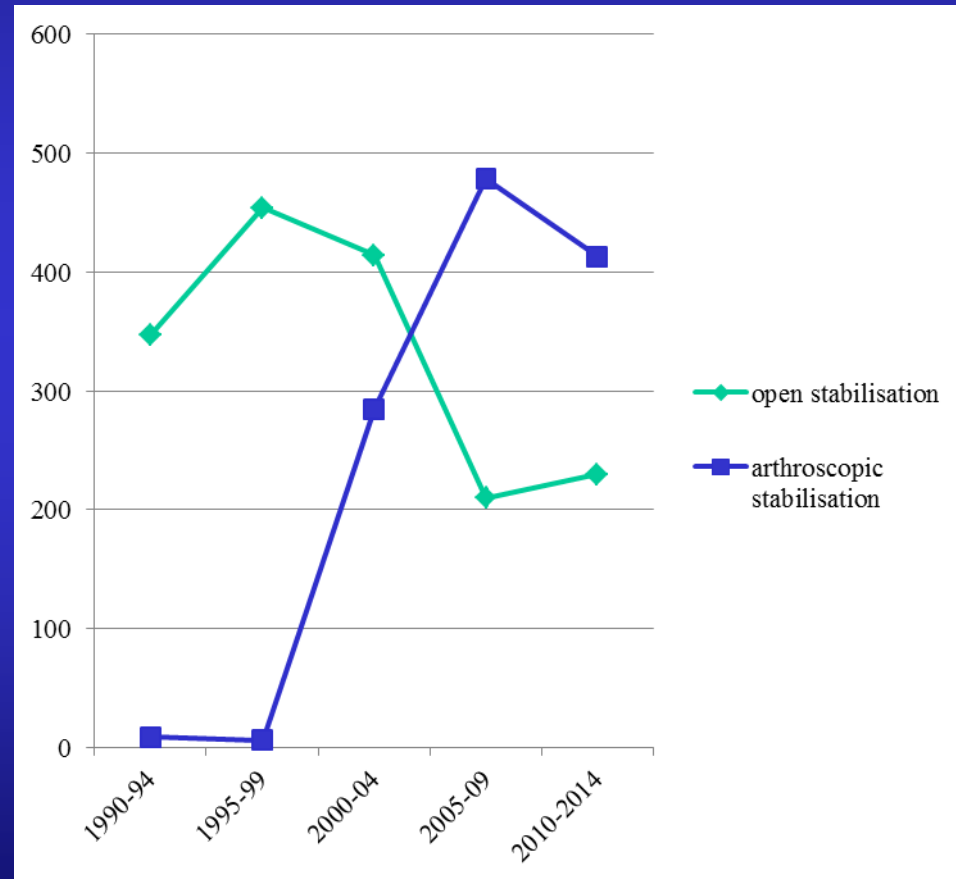
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NUMBERS BETWEEN 1990 - 2014

OPEN STAB 1655

ARTHROSCOPIC STAB 1652

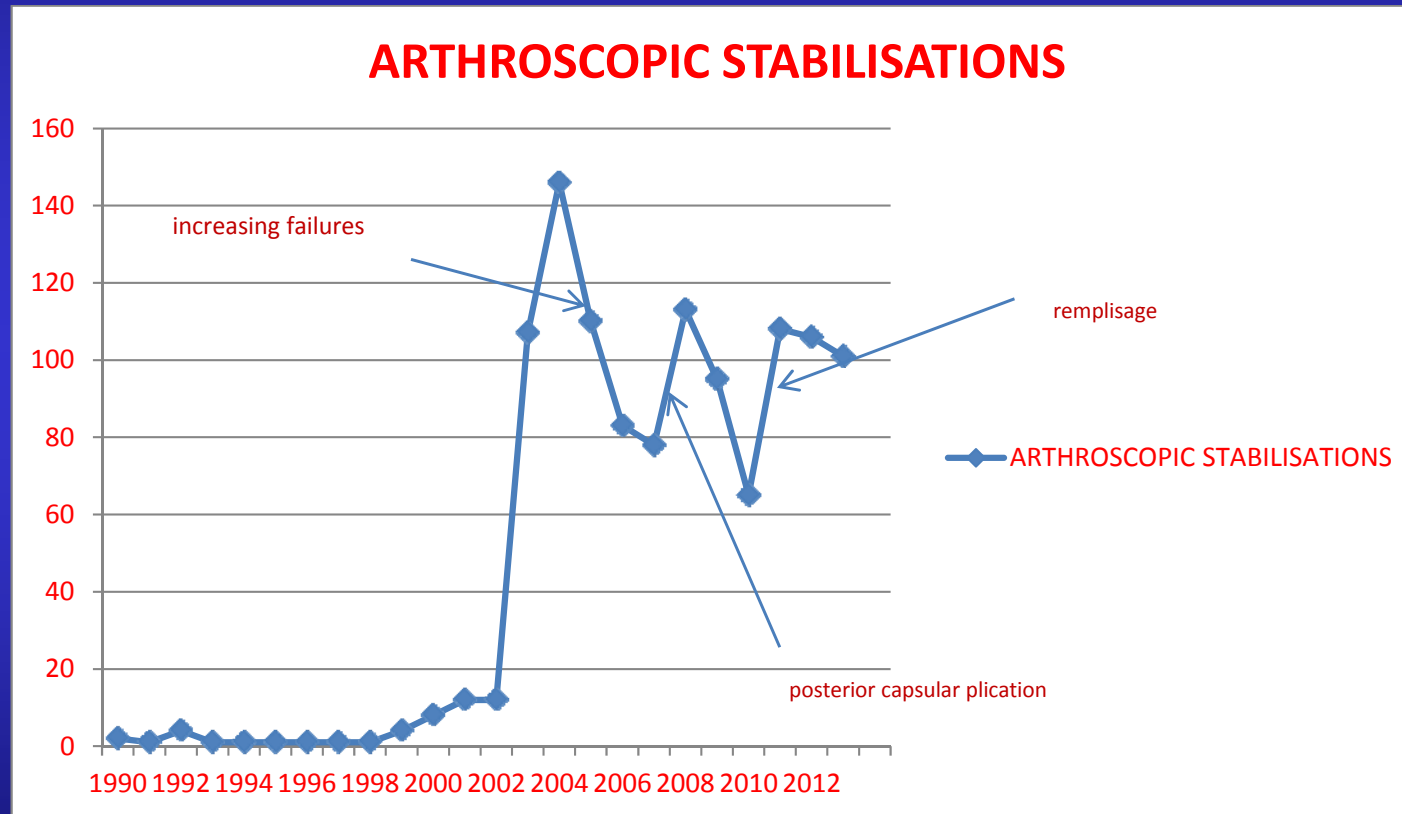


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ARTHROSCOPIC STABILISATION



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REASON FOR SURGERY

High recurrence rate

- 16 yrs – 100%
- 20 yrs – 90%
- 25 yrs – 80%

Joint damage

- Each dislocation does more articular cartilage & bone damage
- 20% risk OA after 1 dislocation
- Likely much higher with recurrent dislocations



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ASSESSMENT

History

- Dislocation
- Subluxation
- Subtle instability

Clinical examination

- ROM
- Apprehension
- hypermobility



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HOW TO DECIDE WHICH OPERATION IS NEEDED

- Labral pathology
- Capsular pathology – plastic deformation of capsule
- Bone pathology – glenoid & humeral head



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PLAIN XRAYS

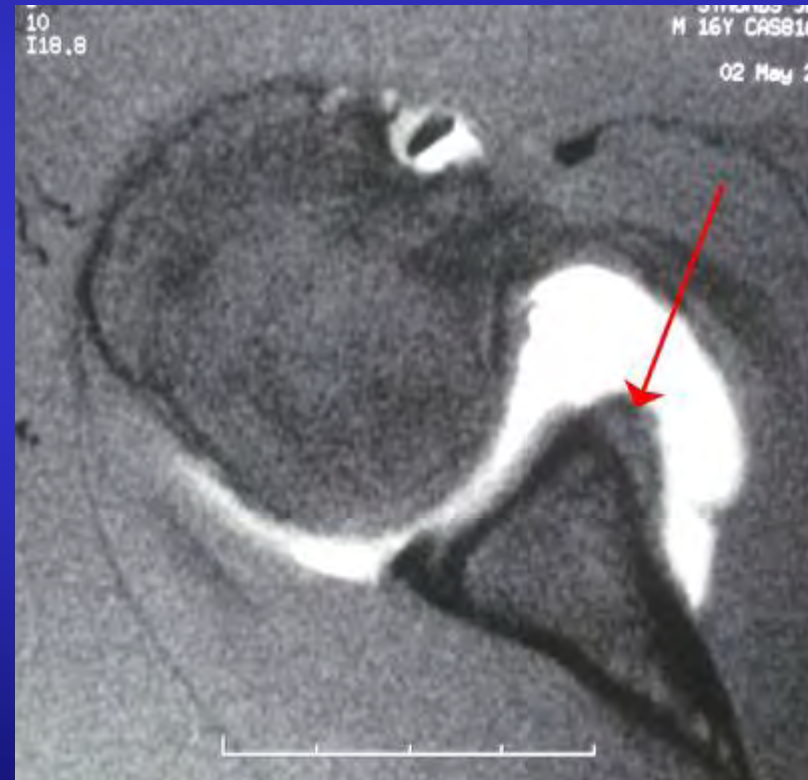
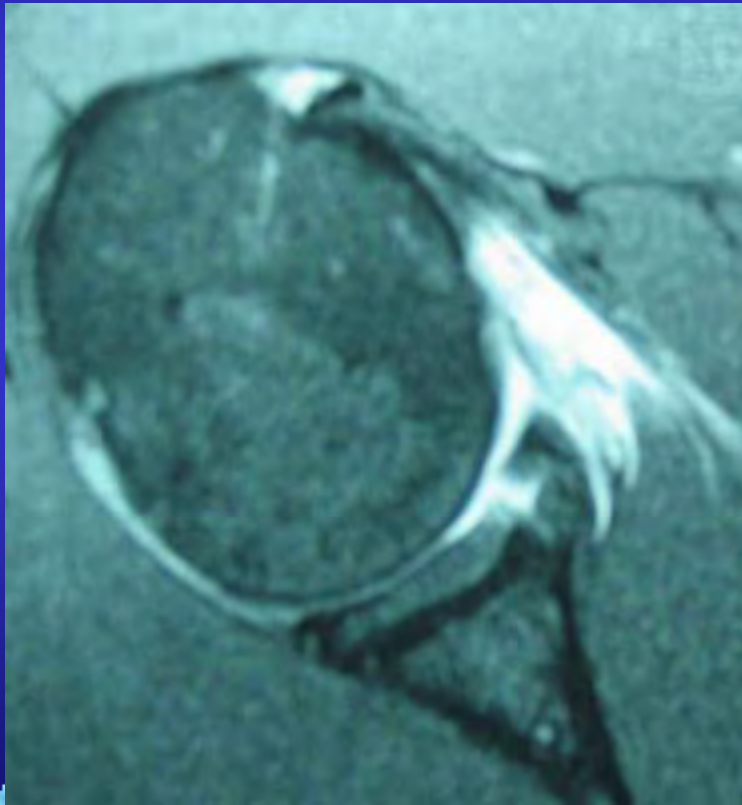


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3D CT SCANS

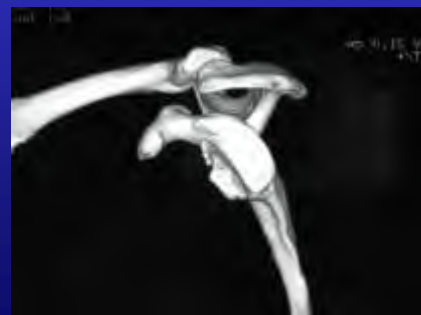
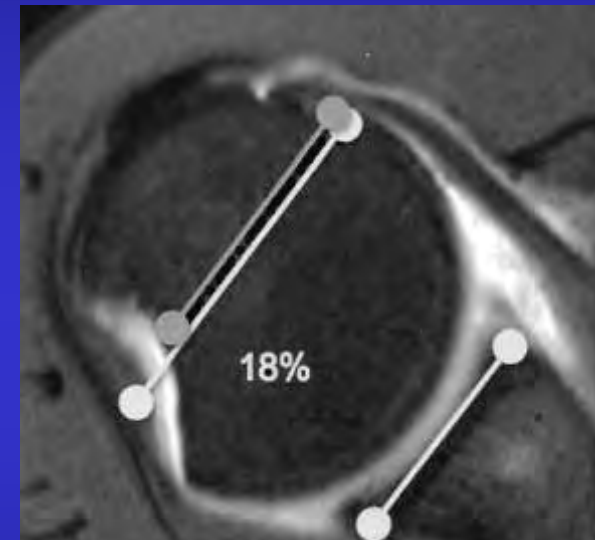


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ORTHOSPORTS & SURGERY, P.C. 2009, NEW YORK, NY

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ASSESSMENT OF BONY DAMAGE



FLATOW METHOD

< 20% - insignificant

20% - 40% - variable significance - esp if associated with glenoid bone loss

> 40% - very significant

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THREE TYPES OF OPERATIONS

ARTHROSCOPIC

- Labral repair – spot weld
- Capsular plication – 25% tightening
- Remplisage



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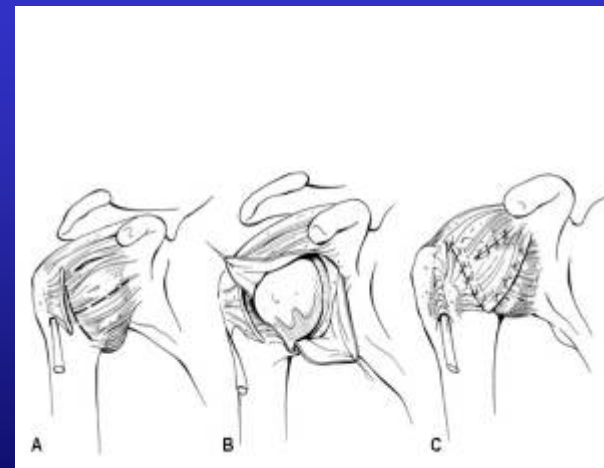
THREE TYPES OF OPERATIONS

OPEN

- Labral repair – very strong transosseous sutures
- Capsular plication – 50% tightening



Knee Surgery, Sports traumatology, Arthroscopy, 19:9 2011



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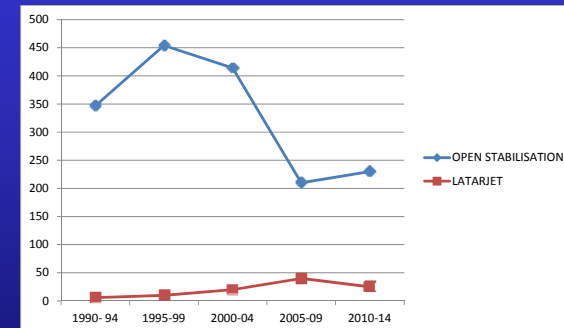
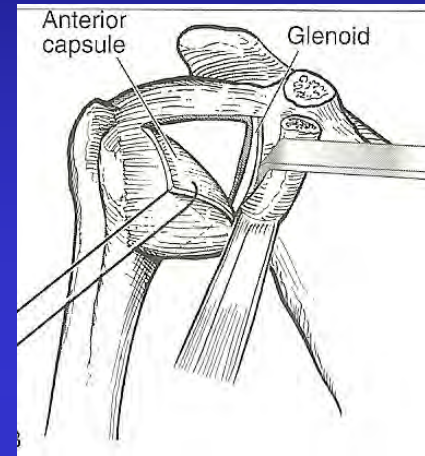
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THREE TYPES OF OPERATIONS

LATARJET

- Coracoid transfer
- Compensates for bone loss



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WHAT HAVE I LEARNED

Arthroscopic surgery works well when

- Labral tears only
- Low demand patients

Arthroscopic surgery unreliable when

- Bony pathology present
- High demand contact athletes
- ALPSA & HAGL lesions



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MY PARADIGM

DIVISIONS

- Labral tear only – NC
- Labral tear only – C
- SLAP lesion alone
- No labral tear/bone damage – capsular stretch
- Mild bone damage
- Significant bone damage

Contact & Active include

- Rugby
- AFL
- Waterskiing
- Snow skiing/snowboarding
- Soccer goalie
- Basketball
- Heavy weights/bodybuilding
- Heavy manual workers
- Overhead workers
- Rockclimbing
- Moderate weights



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MY PARADIGM

anterior labral tear only – non contact

ARTHROSCOPIC

- First time dislocators
- Recurrent dislocations (plus posterior capsular plication)

OPEN

- Associated with HAGL



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MY PARADIGM

anterior labral tear only – contact

ARTHROSCOPIC

- In season instability (plus posterior plication + RI closure)
- Posterior labral tear only

OPEN

- All others



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MY PARADIGM SLAP lesion

ARTHROSCOPIC

- All
- If contact athlete combine with capsular plication



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MY PARADIGM

no labral tear or bone damage
capsular stretch

ARTHROSCOPIC

- Non contact



OPEN

- Contact athletes
- Very active
- Associated with HAGL



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MY PARADIGM

mild bony damage

ARTHROSCOPIC

- Non contact/inactive
(remplisage if needed)



OPEN

- Contact/active



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Less than 20% glenoid bone loss
Less than 20% HS

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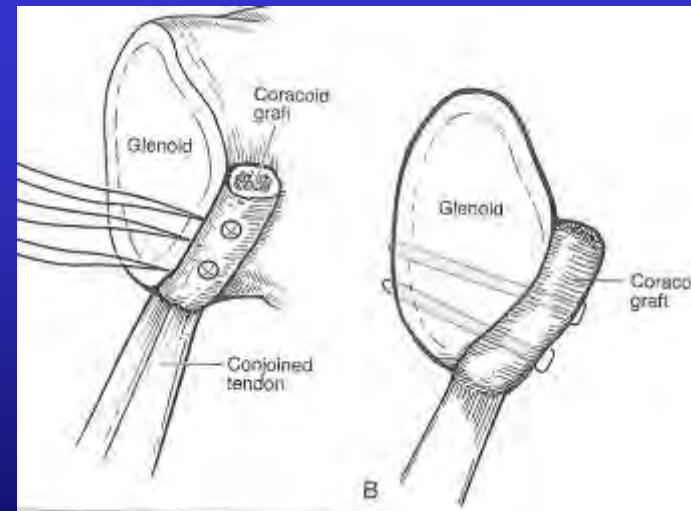
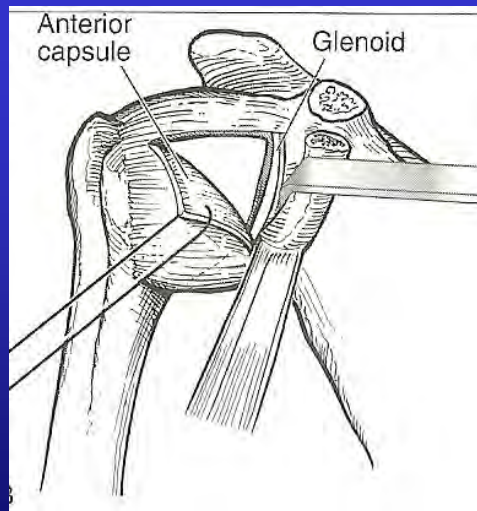
significant bony damage

ARTHROSCOPIC

- No place

OPEN

- Latarjet
- Graft extraarticular



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SUMMARY

	NON CONTACT	CONTACT
LABRAL TEAR or ALPSA ONLY	Arthroscopic	Open (except in season)
HAGL	Open	Open
CAPSULAR STRETCH ONLY	Arthroscopic	Open
SLAP	Arthroscopic	Arthroscopic plus plication
MILD BONE DAMAGE	Arthroscopic with remplisage	Open
SIGNIFICANT BONE DAMAGE	Latarjet	Latarjet



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SUMMARY

Greater trend to open surgery especially if

- Contact athlete
- Very active
- Even mild/moderate bony pathology
- Consider transosseous labral repair in open surgery

Arthroscopic surgery should include if indicated

- Posterior capsular plication
- remplisage



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THANK YOU



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