Open Bankart: Why and How?
Richard J. Hawkins, MD

DISCLOSURE STATEMENT
Richard J. Hawkins, MD

Hawkins Foundation:
- Greenville Hospital System
- DJO Surgical
- Neurotech
- Smith & Nephew
- Euflexxa

Consulting Agreement:
- Arthrex

Royalties:
- Lippincott, Williams, & Wilkins
- Ossur

GOAL
Convince You That Open Bankart should be in our toolbox
“If you speak to me, first define your terms”

Voltaire

Anterior vs MDI

Has the pendulum swung too far to Arthroscopic?

Debate

Usually I get this talk to support open Bankart

- 25 Year Old
- Contact Athlete
- 3 Dislocations
- 20% Glenoid Bone Loss
- Hill-Sachs

(I bet most would vote for Laterjet)
For routine anterior instability requiring surgery – my very favorite operation is an **Arthroscopic Bankart**

<table>
<thead>
<tr>
<th>Study</th>
<th>Recurrence</th>
<th>Outcome</th>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabbriciani Arthro 2004</td>
<td>Open: 0%</td>
<td>No diff. Rowe; Constant</td>
<td>Min: 2 yrs</td>
</tr>
<tr>
<td>Bottoni et al. AJSM 2006</td>
<td>Open: 2/29</td>
<td>SANE, Rowe, WOSI, SST: No difference</td>
<td>32 m</td>
</tr>
<tr>
<td>Jorgensen KSSTA 1999</td>
<td>Open: 2/20</td>
<td>No diff. Rowe, Constant</td>
<td>36 m</td>
</tr>
</tbody>
</table>

**Arthroscopic Bankart: Collision Athletes**

<table>
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<th>Study</th>
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<tbody>
<tr>
<td>Ide AJSM 04</td>
<td>55 pts 52m follow</td>
<td>Rowe: 92</td>
<td>Contact: 9% Non: 6.5%</td>
</tr>
<tr>
<td>Mazzocca AJSM 05</td>
<td>18 pts 17m follow</td>
<td>Rowe: 94 SST: 11</td>
<td>Dislocation: 11%</td>
</tr>
<tr>
<td>Cho, Rhee Arthroscopy 06</td>
<td>Open vs. Scope: 72m</td>
<td>No difference</td>
<td>Scope: 25% Open: 12%</td>
</tr>
<tr>
<td>Cho Arthroscopy 06</td>
<td>Collision vs. noncollision</td>
<td>VAS, Rowe, Constant: No difference</td>
<td>Collision: 17.2% Noncollision: 6.7%</td>
</tr>
</tbody>
</table>
Arthroscopic Bankart: “Maybe not be as good as we think”  
All Publications since 2010

Recurrence Rates
- van der Linde et al, AJSM 2011: 35%
- Voos et al (HSS) AJSM 2010: 18%
- Castagna et al, AJSM 2012: 17%
- Castagna et al, Arthroscopy ’12: 21%
- Porcellini et al JBJS 2009: 13%

Age <22, male, collision/contact sport

Burkhart & DeBeer

194 consecutive arthroscopic Bankart repairs

Influential paper with two primary conclusions

- In contact athletes:
  - Arthroscopic bankart repair in presence of bone loss = high failure rate
  - Arthroscopic bankart repair in absence of bone loss = high success rate

Emphasis of paper: arthroscopic & contact

Defining the terms...

Bone Loss
- Humerus → Hill-Sachs → ?%
- Glenoid → anterior bone loss → ?%
If Arthroscopic Bankart Not Indicated

Coracoid transfer
Latarjet

“A” to “C”

What Happened to “B”?
Open Bankart

Patient factors:
• Collision athlete
• Hyperlaxity

Pathoanatomic factors:
• Bone loss 10-20%
• Poor capsulolabral tissue
• Capsular deficiency
• Exposed hardware
• Subscapularis deficiency

Now...the Latarjet

• Out of our wheelhouse...unless you are French, Japanese, or Swedish
• Significant learning curve
• Significant complication rate
• Revision surgery = nightmare
• No data to compare Latarjet to open Bankart with bone loss
Conclusions:
The arthroscopic Latarjet procedure is a standardized, hence reproducible technique whose complexity makes it suitable only for surgeons with solid experience in arthroscopy and shoulder surgery.

Meta-Analysis

- “Osseous stabilization shoulder surgery using Latarjet procedure has an overall complication rate of 30%.”
- Recurrent dislocation: 3%
- Reoperation: 7%
- Hardware failure, fracture, infection, nonunion, subscapularis rupture, neurovascular injury

The Outcomes and Surgical Techniques of the Latarjet Procedure

Boileau’s group said it best...

“Subtle variations in surgical technique, among other factors, may drastically impact likelihood of glenohumeral degenerative changes in these patients & morbidity to the subscapularis.”
Bristow-Latarjet: 10-24 Year Follow-up

- 319 shoulders
- WOSI: 83% of normal
- Recurrence: 18%
  - 16 (5%) dislocations
  - 41 (13%) subluxations
  - 3 (1%) revision
- If capsular shift added:
  - 4% recurrence
  - WOSI: 92% of normal

The Bankart Procedure: A Long-Term End-Result Study

- 161 patients over 30 years (1978)
  - 77% Hill-Sachs lesion
  - 73% with damage to anterior glenoid rim (including fracture)
  - All patients underwent open soft tissue repair

Results:
- 98% good or excellent result
- 2% recurrent dislocation rate

  Favorable results in presence of bone deficiency
Rowe said it right in 1978!
Even with bone loss:

“We concluded that with the meticulous technique of the Bankart repair as described, postoperative immobilization is not necessary, early return of motion and function can be expected, and resumption of athletic activities with no limitation of shoulder motion is possible for most patients.”

Rowe, et al JAMS, 1978

Open Capsular Repair Without Bone Block for Recurrent Anterior Shoulder Instability in Patients With and Without Bony Defects of the Glenoid and/or Humeral Head

- 2 series and 2 publications of open Bankart repair
- 98% stable without addressing bone defects
- He recommends open capsular repair given high complication rate with bone-block techniques

Pagnani, AJSM 2008, Vol.36, No.9

Open Bankart: minimum 20 year F/U

- 47 patients; bone loss excluded
- WOSI: 256 pts
- Rowe: 88 pts
- SST: 90%
- Recurrence: 17%
  - 5 dislocations
  - 2 subluxations
- 95% satisfied with operation
- 2 revisions

Moroder et al JBJS 2015
Open Bankart in Contact Teenage Athletes

- 21 Cases
- 2 yrs – No Failures
- Excellent Rowe and UCLA Scores

Hatch, Hennrikus, JPO, March 2016

Anterior Shoulder Stabilization in Collision Athletes
Arthroscopic Versus Open Bankart Repair

Direct Comparisons:
Open vs. Scope in the Contact Athlete
(Best study on this question in Lit!)

- Collision athletes treated open vs. arthroscopic, modern techniques (excluded bone lose, HAGL, ALPSA from scopes!)
- Scope 25%, Open 12%

Rhee et al, AJSM 2006

A Randomized Clinical Trial Comparing Open and Arthroscopic Stabilization for Recurrent Traumatic Anterior Shoulder Instability (Important Study)

- No difference in patient quality of life
- No difference in shoulder motion
- WOSI and ASES Scores the same
- Recurrence rates at two years:
  - 11% in open group
  - 23% in arthroscopic group

Open repair recommended in young male patients with Hill-Sachs lesions

Miller et al. JBJ 2014
Recurrence rates:
same: 12.5%
Revision surgery
Arthroscopic: 57%
Open: 19%
Return to sport same
Postop OA: same

Open Bankart vs. Arthroscopic
Systematic Review

Harris et al. Arthroscopy 2013

Open Bankart vs. Arthroscopic
Meta-analysis
18 Published Studies

Open Bankart
- less recurrence
- less re-operation
- > return to work
- > return to sport

Lenters JBJS 2007

Are there Downsides
to Open surgery?

Slebergh, Tekish, JSES 2007

Subscapularis dysfunction after open but not scope Bankart, worse in revisions
Scheibel, AJSM 2007
Subscapularis Tendon Disruption after Bankart Reconstruction for Anterior Instability

- Low incidence - 4.5% approx. 100 cases
- Discussed diagnosis
- Considered causes
- Considered treatment

Importance of subscapularis management
Careful monitoring of EXT ROT

Greis et al, JSES 5:219-222, 1996

Indications: Open Bankart Repair

- Collision male athlete < 20 yo
- 10-20% bone loss “Intermediate bone loss”
- Multiple dislocations (> 10)
- Revision of arthroscopic repair done well with minor bone loss

Arciero: Level 5, 28 years opinion

- Consider an open bankart whenever you wish even with moderate bone loss.
- Even with routine anterior instability when most of us perform an arthroscopic Bankart
Surgical Approach

What to do with capsule and Bankart is based on:
- Amount of anterior translation
- Size of Bankart
- Capsular laxity (eq. Drive through sign)

Bankart Repair Technique

- Delto Pectoral
- Incise subscap plus cap together 1 ½ cm medial to biceps
- Stay sutures high and low to retract
- Retract humeral head
- Elevate Bankart
- Insert 3 anchors

Bankart Repair Technique

- Pass needle through labrum and under surface capsule with tension on retraction sutures (Stay medial on capsule)
- Close subscap and capsule with Mason Allen sutures
- Fine tune with interval closure to achieve
  - 50% of EXT ROT
  - Firm inpoint to anterior translation
Rehab

- Sling – 6 weeks
- Quiet – 3 weeks
  - then passive range of motion
- Gradual ER
- Active ROM – 6 weeks
- Sports – 4 months

Conclusions

- Bone transfer with meaningful bone loss especially following arthroscopic failure (North America)
- Latarjet = high complication rates, steep learning curve (NA)
- Arthroscopic repair not as successful as we think especially in younger patients, contact athletes with bone loss
- Open technique
  - Reliable
  - Low complication rate
  - Successful even with bone loss


Thank You