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INSTITUTE

Sidney Kimmel
Medical College
at Thomas Jefferson University

DEBATE
Bankart: Open is Still Best

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Current Solutions in Shoulder & Elbow Surgery
Tampa, FL
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Disclosures

- Joseph A. Abboud, MD (**I AM OLD ENOUGH TO VOTE**)
 - Depuy Synthes - Research Support
 - Zimmer - Research support
 - Tornier - Research Support, Paid Speaker
 - Arthrex - Research Support
 - OREF - Research support
 - Wolters Kluwer Health - Lippincott Williams & Wilkins - Royalties
 - Integra - Royalties, Research Support
 - DJO - Royalties
 - Cayenne - Royalties
 - Minimvasive - Scientific Advisory Board
 - OrthoSpace - Research support
 - Aevumed - Stock
 - Mid Atlantic Shoulder and Elbow Society - Board of Directors
 - Globus - Royalties
 - Parvizi Surgical Innovation - Stock
 - Shoulder JAM LLC - Co-Founder
 - OBERD
 - Marlin Medical Alliance, LLC




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Objectives

- What to do and why?
- Convince you that Open Bankart is still a viable option
- Embarrass Goose



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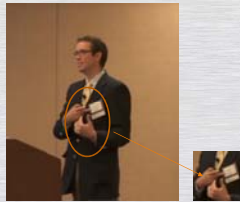
Objectives

- Define indications open Bankart repair for anterior shoulder instability
- Discuss current techniques and results
- Assist you the practitioner to define what the right treatment is for you and your patient
- Like anything in medicine treating shoulder instability is not black and white



Disclaimer

- I do a fair amount arthroscopically
- I perform a variety of open stabilization procedures
- Open Bankart repair absolutely has a role in my practice

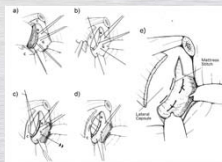


I do not flip my audience the bird



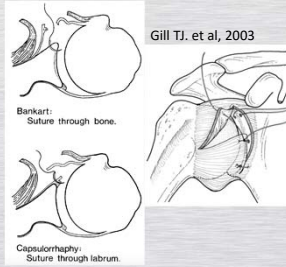
Advantages of Open Bankart

- "Gold standard" procedure
- Typically utilize a subscapularis tenotomy but can be done thru a split
- Can mobilize capsule from subscapularis and tension/shift appropriately
- Avulsed capsule sutured back to glenoid rim, labrum often used to reinforce repair



Advantages Open Bankart Repair

- Capsule can be overlapped (vest over pants repair) – potentially double the thickness
- Can directly repair some bony lesions on glenoid
- Direct treatment of rotator interval as needed
- Many modifications to procedure have been made to improve motion without compromising stability



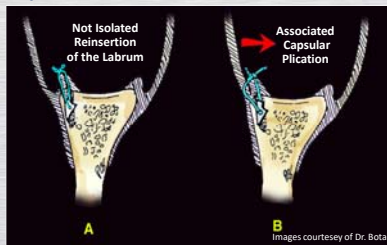
Keys to Effective Bankart Repair

Recreating Glenoid Cavity is Essential



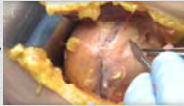
Keys to Effective Bankart Repair

Capsular Plication (East-West) is Needed



Open Repair – Where did it go?

- *Limited exposures in training*
- *Less frequently done*
- *New trend in shoulder instability*



- Option A: Scope Repair
- Option B: Latarjet or Bone Procedure
- WE ARE FORGETTING A GOOD INTERMEDIATE OPTION => OPEN REPAIR



The Reality

- *The majority of primary instability... done with scope*
 - 2/3 of revision surgery done open
- Latarjet > openBankart/ shift



Factors Affecting My Decision

• **Age and Activity Level**

- More aggressive in younger and more active patients
- *Contact sports / Job*
- *Ligamentous Laxity*
- Open allows direct capsular shift




• **Low level bone loss in contact athlete**

- <15% range on glenoid
- Often easier to repair bony Bankart open



Factors That May Push Me to Do Open Bankart Repair

- *Hyperlaxity*
 - Tensioned vest over pants capsule vs. plication




THE DATA



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

Michael J. Pagnani MD, Nashville Knee and Shoulder Center, Nashville, Tennessee

- *103 Patients, average age 20 years*
 - Bone loss determined at arthroscopy
 - 27% engaging Hill Sachs
 - 4% >20% bone loss on glenoid
- **2% recurrence**
- Bone loss not significant predictor



The American Journal of Sports Medicine, Volume 36, No. 9 2008

Open Bankart Repair

Bone loss not a significant predictor (Pagnani et al, AJSM 2008)


- 103 patients average age 20, 4% > 20% bone loss, **2% recurrence**

Long term outcomes (Fabre T. et al, JSES 2010)

- Retrospective review of 50 shoulders (49 patients)
- **8 (16%)** patients had **recurrent dislocation after traumatic event**
- **34 (69%)** showed radiographic signs of osteoarthritis
- Conclusion: **Open Bankart repair good long term outcomes**, minimal recurrences, large percentage of patients will develop osteoarthritis

Long term outcomes (Moroder P. et al, JBJS 2015)


- **47 patients without substantial osseous glenoid defects** underwent modified open Bankart repair for recurrent anterior shoulder instability,
- **40 (85.1%)** available for follow-up at **minimum 20 years**
- **7 (17.5%)** had **recurrence** but 6 patients went 8 years without symptoms
- Good long term results **but failure rate remains high**



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

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Open Bankart Repair

Long term outcomes (Fabre T. et al, JSES 2010)


- Retrospective review of 50 shoulders (49 patients), **mean follow-up 28 years (range, 25-32)**
- Results: 40 (82%) patients returned to previous level of sporting activity
 - **8 (16%)** patients had **recurrent dislocation after traumatic event**, two required another operation
 - Mean Rowe score was 82 (range, 25-97)
 - **47 (96%)** were satisfied with their results
 - **34 (69%)** showed radiographic signs of osteoarthritis
- Conclusion: **Open Bankart repair is an effective operation for the long term treatment of shoulder instability** with minimal recurrences



Open Bankart Repair

Long term outcomes (Moroder P. et al, JBJS 2015)

- 47 patients without substantial osseous glenoid defects underwent modified open Bankart repair for recurrent anterior shoulder instability,
- 40 (85.1%) available for follow-up at minimum 20 years (maximum, 25 years), 26 (65%) had physical exam and radiographs, 14 (35%) completed questionnaires
- Results: 7 (17.5%) had recurrent instability but 6 patients went 8 years without symptoms
 - Rowe score 88.7 ± 12.0 , Subjective shoulder value $90.1\% \pm 10.5\%$
 - ROM decreased compared to contralateral (all significant) 4° abduction, two levels of IR, 7° ER neutral, 7° ER at 90° abduction
- Conclusion: Open Bankart repair has good long term subjective and objective results but failure rate was moderate even without significant glenoid defects



Arthroscopic vs. Open Bankart Repair

Meta-analysis (Chen L. et al, Arch Orthop Trauma Surg 2015)

- Arthroscopic repair has better recovery rate for external rotation at 90° , external rotation at side, and forward flexion
- Arthroscopic had higher rates of recurrence and reoperation









Arthroscopic vs. Open Bankart Repair

Functional Assessment Scores (Netto NA. et al, Arthroscopy 2012)

- Arthroscopic technique had significantly better DASH scores ($p = 0.031$) but no difference seen in UCLA or Rowe scores ($p > 0.999$)
- No difference in complications or ROM





Why Consider an Open Revision?
**Results of Revision Surgery:





Why Consider an Open Bankart Revision?
**Results of Revision Surgery:

- *Open Revision Series*
 - Sisto AJSM 107
 - 0/30 recurrence
 - Cho AJSM 109
 - 3/26 (11%) recurrence
 - Neviaser J Shoulder Elbow Surg 115
 - 0/30 recurrence at 10 years



Why Consider an Open Bankart Revision?

- *Not every revision has significant bone loss and needs a Latarjet!!!*



Why Consider an Open Bankart Revision?

- *Bristow/Latarjet is a difficult procedure*
 - Not Benign
 - Greissler et al. J Shoulder Elbow Surg 13, systematic review of 1904 shoulders
 - **30% complication** rate after Bristow Latarjet
 - Recurrent instability 9%
 - Non-union/Fibrous union of coracoid 9%
 - Neurovascular complication 2%
 - Average external rotation loss 13 degrees



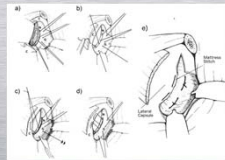
Pearls of Open Bankart Surgery

- **Need an assistant!** – more difficult than arthroscopic
- **Exposure:** I do a subscapularis tenotomy
 - Carefully separate Subscap from anterior capsule
- **Lateral Capsulotomy**
 - Can repair later with anchors or tissue to tissue
- **Mobilize capsulolabral tissue for anatomic repair**
- **Suture anchor on anterior edge of glenoid**



Technique

- **Mattress suture configuration – sutures tied outside of capsule – eliminates medial recess of anterior capsule**
- **Position arm appropriately for capsular repair (30/30/30)**
- **Need meticulous closure of subscapularis**
 - Interrupted modified Mason Allen sutures using #2 suture



Subscapularis Debate...

- Can do through subscapularis split if wanted
- Outcome directly linked to strength and function of subscapularis (Sachs et al. AJSM '05)
- Shoulder strength slower to return after open repair **BUT NO DIFFERENCE AT ONE YEAR** (Rhee et al. AJSM '07)
- Randomized trial scoped vs. open – no difference in strength and subscapularis function at 2-3 years (Hiemstra et al. AJSM'08)



Just Remember...

- There is another option between arthroscopic repair and Latarjet.....
- **OPEN BANKART STABILIZATION!**



Conclusions

- Treatment needs to be individualized based upon patient history, surgical skill, exam, and radiographic findings
- Important to evaluate activity level of patient and degree of bone loss before deciding upon procedure
- Open procedures have lower rates of instability recurrence
- Learning curves are steep regardless of technique you decide to use for instability surgery..... **You need to know several !!!!!**

