



California Orthopaedic Association  
Carlsbad, CA 2012

# AAOS Specialty Day Review Sports Medicine

C. Benjamin Ma

Associate Professor in Residence  
Chief, Sports Medicine and Shoulder Surgery  
University of California San Francisco  
Department of Orthopaedic Surgery



# AAOS 2012

---

**AAOS 2012**

★ American Academy of Orthopaedic Surgeons ★

**08-12**  
★  
**FEBRUARY**

**S.FRANCISCO**



# AAOS 2012 Specialty Day

---



# Shoulder Instability

---

- The Latarjet Procedure for Recurrence of Anterior Instability of the Shoulder after Operative Repair
- Schmid and Gerber et al
- 49 patients with failed stabilizations revised with Latarjet procedure
- Clinical outcome was assessed at a mean follow-up of 38 (23-63) months



# Latarjet Procedure

---

- No shoulder redislocated, subluxations recurred in two and five with slight unspecified uncertainty.
- 88% were subjectively excellent or good, 3 fair, 3 poor
- Dissatisfaction was associated with persistent pain.
- Preoperative pain was the key predictor of postoperative pain:

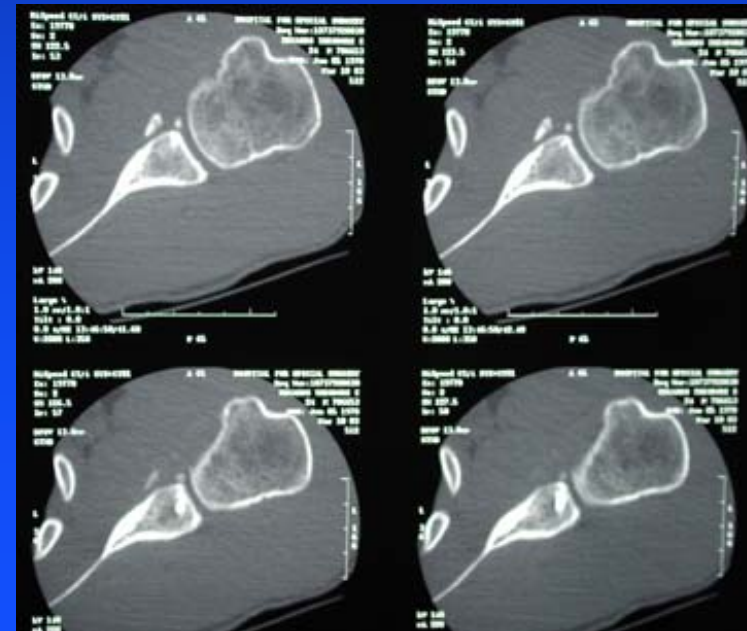


# Shoulder Instability

---

- A Comparison Between Glenoid Bone Loss Measurement Techniques: Axial CT vs. 3D CT Sagittal Reconstruction
- Bernhardson and Provencher et al

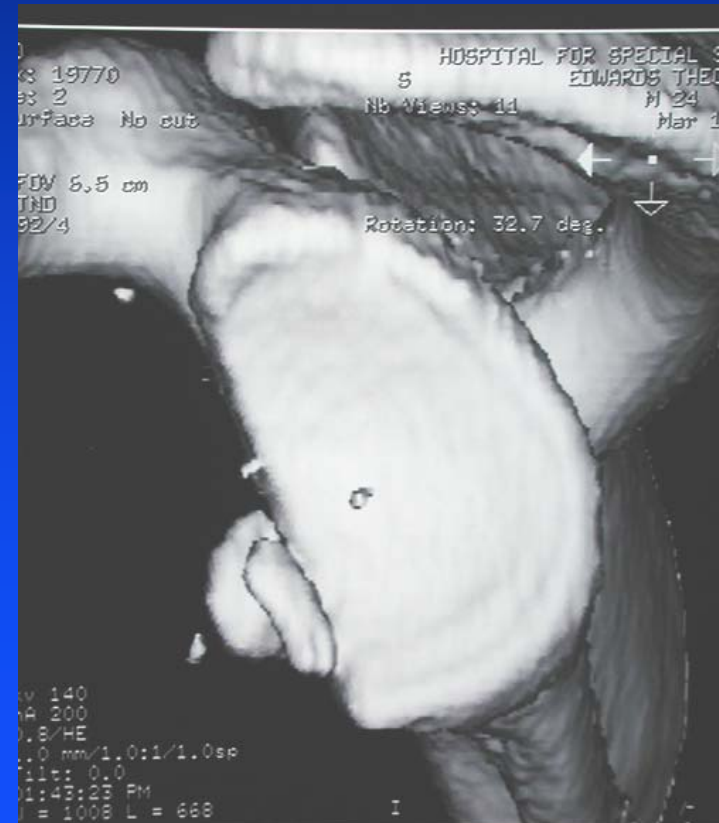
Compare glenoid bone loss measurement at arthroscopic findings with axial CT scan or Three dimensional (3D) sagittal CT reconstruction.



# Bone Loss

---

- Study found that three-dimensional sagittal CT scan give a bone loss estimate close to the bone loss found at time of surgery
- Statistically significantly better than the axial CT measurements.

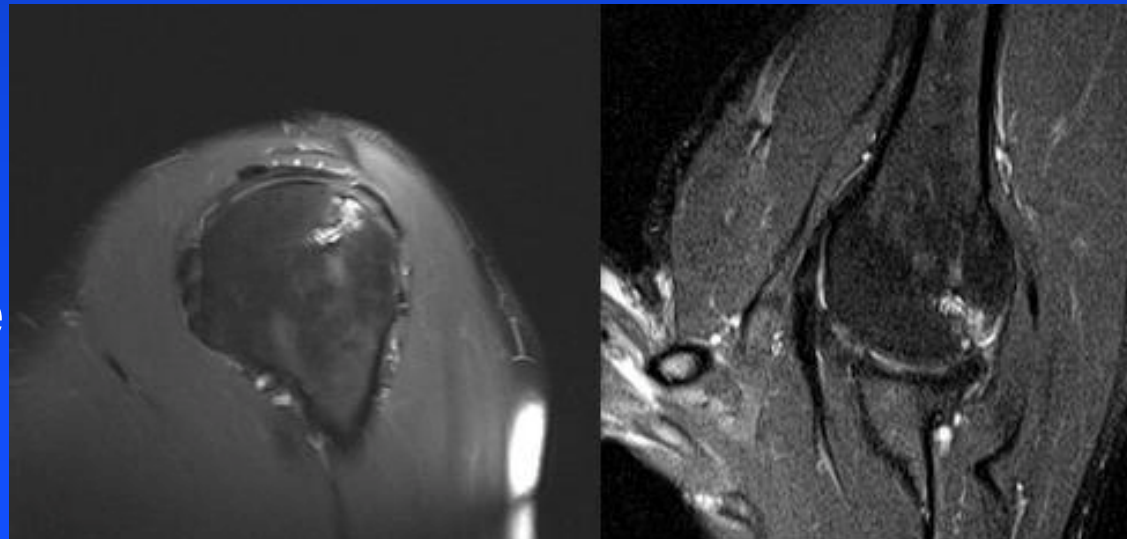


# Shoulder Instability

---

- The Evaluation of Arthroscopic Remplissage by High Resolution MRI: Are We Getting Our Fill?
- Park and Kelly et al

To evaluate and characterize the post-operative appearance of the Remplissage procedure





# Remplissage Procedure

---

- 9 patients with average follow up 14.8 months.
- The average size of the Hill Sachs deformity was 311.2 cm<sup>3</sup> (range 93.6 to 825.1).
- The percentage of the deformity filled in with tendon was 75-100% and the
- degree of atrophy was 0-25% for all patients studied.



# Remplissage Procedure

---

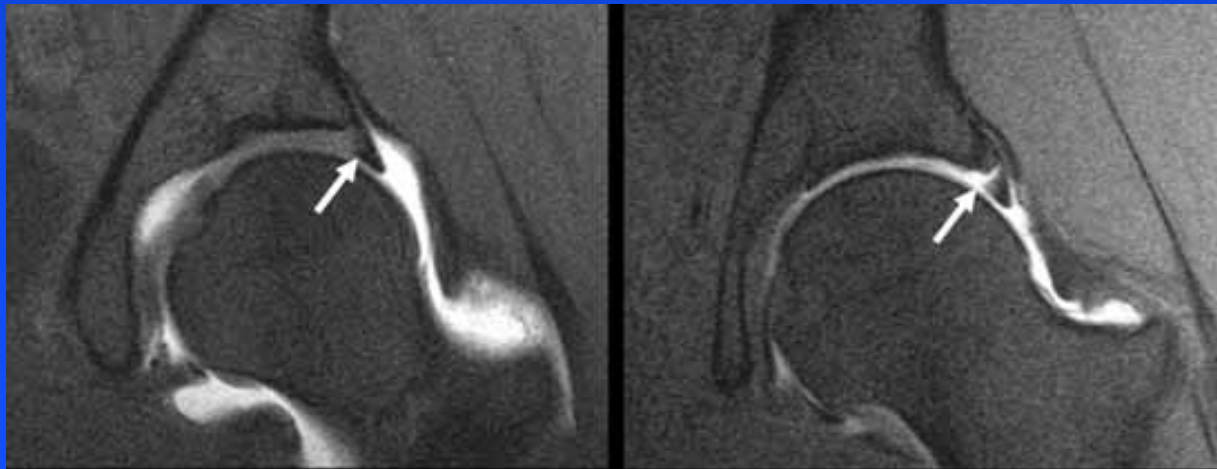
- No defects were left unfilled.
- The average number of anchors used was 1.4 (range 1 – 3).
- The average WOSI score was 71.0 (range 41.6 – 91.7) with the average external rotation loss of 7.1 degrees.
- None of the patients reported having noticed losing external rotation on the operative shoulder



# Hip Arthroscopy

---

- Prevalence of Hip Pathology in Asymptomatic Subjects. A Prospective Investigation Using MRI
- Register and Philippon et al
- Determine the prevalence of MRI abnormalities in asymptomatic individuals



# Hip Pathology

---

- 45 asymptomatic subjects underwent a unilateral MRI
- The average age was 37.8 years (range 15 to 66). There were 60% males and 40% females.



# Hip Pathology

---

- Pathology in asymptomatic individuals
  - Labral tears 69%
  - chondral defects 24%
  - labral/paralabral cysts 13%
  - acetabular bone edema 11%
  - fibrocystic changes of the head neck junction 22%
  - rim fractures 11%
  - subchondral cysts 16%
  - osseous bumps 20%.



# Hip Pathology

---

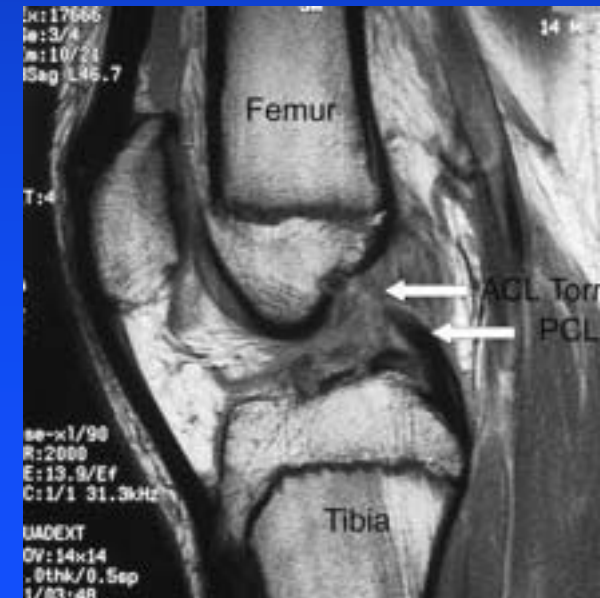
- Age > 35 yo is 13.7 times more likely to have a chondral defect and 16.7 times more likely to have a subchondral cyst when compared with age <35 .
- No other joint pathology was associated with age.
- Male subjects were 8.5 times more likely to have an osseous bump compared to female subjects.
- No other joint pathology was associated with gender.



# ACL Injuries

---

- Meniscal and Chondral Injury in Association with Pediatric Anterior Cruciate Ligament Tears: Relationship of Treatment Time and Patient Specific Factors
- Dumont and Wilson et al
- A retrospective chart review of pediatric patients undergoing primary arthroscopic anterior cruciate ligament reconstruction



# Pediatric ACL

---

- 370 pediatric patients who underwent primary ACL reconstruction
  - 241 were treated  $\leq 150$  days (early)
  - 129 were treated  $> 150$  days (delayed)
- 37.8% patients in the early group and 53.5% patients in the delayed group had medial meniscal tears (MMT) ( $p=0.014$ , OR 1.8).
- Lateral meniscus tear (LMT) rates were similar (56.0% and 57.4%) in each group.





# Pediatric ACL

---

- 54.4% with MMT and 12.4% without MMT had medial femoral condyle articular injuries ( $p < 0.001$ ).
- 27.3% patients with LMT and 6.8% without LMT had lateral femoral condyle articular injuries ( $P < 0.001$ ).
- Age  $\geq 16$  years influenced presence of MMT ( $p < 0.05$ )
- Weight  $> 65\text{kg}$  influenced the presence of MMT ( $p < 0.001$ ) and LMT ( $p < 0.05$ ).



# Pediatric ACL

---

- Pediatric patients treated  $>150$  days after injury for ACL tears have a higher rate of MMT than those treated  $\leq 150$  days after injury.
- Increased age and weight are associated with a higher rate of medial meniscus tears.
- Patients with ACL tears and a medial or lateral meniscus tear are more likely to have chondral injury in that particular compartment than those without meniscal tears



# ACL Injuries

---

- Return to High School and College Level Football Following ACL Reconstruction
- McCullough and Dunn et al
- Aims of study
  - quantify the percentage of football players who RTP.
  - determine player opinion on their performance if RTP as well as reason(s) for not RTP.



# Return to Play

---

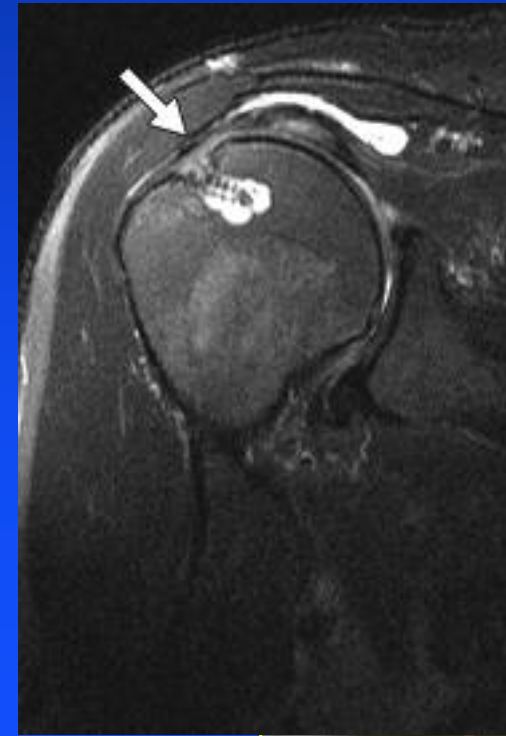
- Retrospective study on the MOON cohort.
- 145 football players were contacted.
- The RTP rates were similar for high school and collegiate athletes with ~64% RTP.
- Based on player perception
  - 42% RTP at the same level
  - 30% did not RTP at the same level
- Main reason players did not RTP was fear.



# Rotator cuff repair

---

- Intra-operative Determinants of Rotator Cuff Repair Integrity: An Analysis in 500 Consecutive Repairs
- Wu and Murrell et al
- To determine intra-operative factors that predicts an intact repair six month after rotator cuff repair



# Rotator Cuff Integrity

---

- 500 consecutive patients who had an arthroscopic rotator cuff repair performed by a single surgeon and ultrasound evaluation of the repair six months post repair using standard protocols.
- The overall post-operative re-tear rate was 19 % at 6 months post repair.



# Rotator cuff integrity

---

- The best predictor of rotator cuff integrity was pre-operative tear size
- Patients with small ( $\leq 2$  cm<sup>2</sup>) rotator cuff tears were least likely to re-tear (10 %).
- As the tear size increased, the re-tear rate increased in a linear fashion
- Other surgeon-ranked intra-operative assessments did correlate (negatively) with re-tear, repair quality, tendon mobility and tendon quality.



# Rotator Cuff repair

---

- Factors Most Closely Associated With Functional Outcomes in Rotator Cuff Repair
- Karas and Verma et al
- Hypothesize that both overall satisfaction and quality of life metrics will correlate more closely to a decrease in pain rather than an improvement in strength.
- Hypothesize validated functional outcome scores will more closely correlate with strength rather than pain.





# Rotator Cuff Outcomes

---

- A retrospective review of data from a randomized controlled trial on the effect of acromioplasty in rotator cuff repair.
- Change in strength (forward flexion) correlated with two outcomes, change in SF-12 (0.327) and SST (0.395).
- Change in pain was correlated only with the change in the ASES.



# Rotator Cuff Outcomes

---

- Increases in strength correlate with improvements in general quality of life for patients who undergo rotator cuff repair.
- Pain correlates with the ASES and strength with the SST.
- Overall, correlations were weak and no validated outcome measure correlated with both strength and pain.
- This finding suggests these outcome measures may be unable to capture basic treatment effects



# Rotator Cuff Repair

---

- Single Row vs Double row
- Pedowitz, UCLA
- Report on
  - Increase biomechanical strength
  - Increase foot print restoration
- Clinical outcomes
  - Some findings with better healing on MRI
- No convincing data on superiority





**UCSF Medical Center**  
*Sports Medicine*

C. Benjamin Ma  
Chief, Sports Medicine and  
Shoulder Surgery  
University of California, San  
Francisco

415-353-7566  
maben@orthosurg.ucsf.edu

UCSF

**MQIR**

