Chicago Sports Medicine Symposium

Surgical Spotlight: Remplissage

Brian R. Wolf MD MS

Callaghan Chair and Director of Sports Medicine
Vice-Chair of Orthopaedic Surgery
Head Team Physician, University of Iowa, Iowa City, IA

Images B. Wolf personal file

Disclosure

- *My disclosure is in the AAOS database*
- *I have no potential conflicts with this presentation*
- *Committees*
  - Program Committee – AOSSM
  - Fellowship Committee - AAOS
- *Educational Fellowship Grant - Arthrex, ConMed, Smith and Nephew*
- *Scientific Advisory Board - United Health Care*
- *Founder - SportsMed Innovate*

Hill Sachs Lesion

- *Reported as early as 1855*
  - Malgaigne 1855, Flower 1861
- *Radiologists Hill and Sachs – 1940*
- *Palmer and Widen: JBJS 1948*
  - Described engagement of Hill Sachs
- *Present in ~70% of primary dislocations*
  - ~100% of recurrent dislocations

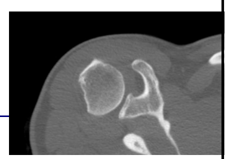
Image B. Wolf personal file

Imaging

- *Plain films*
  - AP, lateral, axillary
  - Apical Oblique view
    - Arm IR, beam directed 45 deg cephalad and 45 deg internal
  - Craniocaudal view
  - Stryker notch view

Images B. Wolf personal file

Imaging



- *CT*
  - Axial and saggittal
  - 3D reconstruction
  - Accurate for measurement
- *MRI*
  - Very accurate for dx
  - More difficulty for measurement

Images B. Wolf personal file

Classification

- *Rowe:*
  - Mild: 2 x 0.3 cm
  - Moderate 4 x 0.5 cm
  - Large 4 x 1 cm
- *Flatow*
  - Clinically insignificant < 20%
  - Variable significance 20-40%
  - Clinically significant >40%

Image B. Wolf personal file

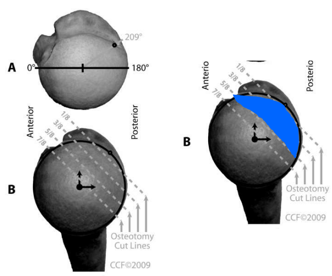
Engaging Hill Sachs Lesion

- *Burkhart and DeBeer 2000*
  - “Engaging Hill Sachs” lesion as risk factor for failure of arthroscopic Bankart repair
  - Medial edge of Hill Sachs engages the edge of the anterior glenoid in Abduction external rotation

Image B. Wolf personal file

Hill Sachs size

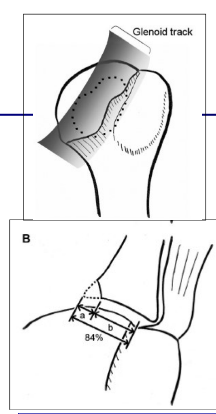
- *Kaar et al*
  - AJSM 09
  - Hill Sachs size of 5/8 HH radius (38% of articular surface was biomechanically significant in lab setting



Picture from Kaar et al 2009

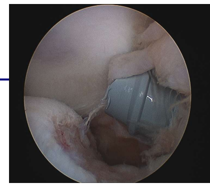
Glenoid Track - Yamamoto 2007

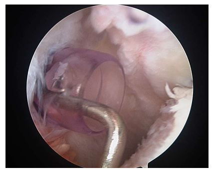
- *Articulation area on humeral head in ABER*
- *If medial edge of HS extends medial to track - risk of engaging*
  - 18.4 +/- 2.5mm from edge of cuff
  - ~16-17 mm from edge of articular cartilage
  - 84% +/- 14% of glenoid width



Images Yamamoto et al JSES 2007

Humeral Defects

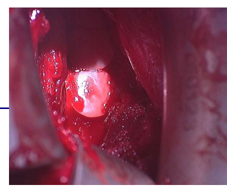




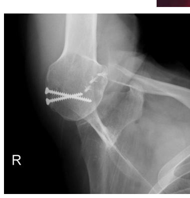
- *Indications for treatment:*
  - Still evolving
  - “off track”
  - Engaging Hill Sachs in ABER
    - “Large” Hill-Sachs lesions
    - Moderate Hill-Sachs with associated glenoid bone loss

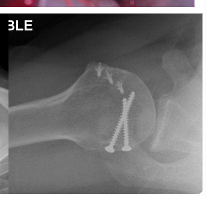
Images B. Wolf personal file

Treatment options



- *Arthroplasty*
  - Partial resurfacing
- *Grafting*
  - OATS
  - Bulk allograft
- *Rotational osteotomy*
- *Remplissage*





Images B. Wolf personal file

Remplissage: Portals

- *Posterior soft spot*
  - Standard position

Photo B. Wolf personal file

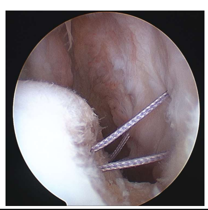
- *Can make second posterior portal if needed to get perpendicular to Hill Sachs*
  - More lateral

Remplissage

- *Place anchors and shuttle sutures prior to completing bankart repair*
  - If after, protect repair during anchor insertion
  - Shaver to prep bone similar to cuff repair

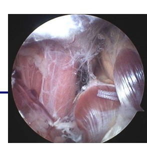
Image B. Wolf personal file

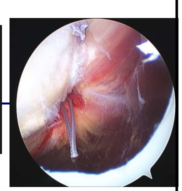
- *1-2 anchors in **prepared** Hill Sachs area*
  - 3-5mm from articular edge
- *Mattress configuration through posterior cuff*
  - Anchor through cannula– then back out cannula to make penetrate cuff through second soft tissue position
  - Penetrator or suture passer
  - Grasp one suture from anchor
    - Mattress config created



Images B. Wolf personal file

Remplissage





- *Find sutures in SA space*
- *Tie down over cuff*
- *Then visualize through anterior portals*

->

Images B. Wolf personal file

Remplissage Video

Outcomes

- *Rashid et al KSSTA 2014*
  - Sys Review 207 pts
  - 8 studies
  - Heterogeneous group
  - Re-dislocation rate
    - 4.2% +/-3.8%
  - Mean ↓ Ad ER: 5.6°
  - Mean ↓ ABER: 11.3°
- *Athwal G et al JBJS '12*
  - No benefit for remplissage for 15% HS lesions
  - + Benefit for 30% lesions
  - Cadaveric model

Thank you

Brian-wolf@uiowa.edu