

- 1  **Posterior Glenohumeral Joint Instability**
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- 2  **Posterior GHJ Dislocations – Epidemiology**
  - Relatively rare – 2–5% traumatic dislocations
  - As many as 79% posterior dislocations missed
  - Incidence 1.1 per 100,000 population
  - Most common – men 20–49 yrs, all pts > 70 yrs
  - Associated injuries in 65% – fracture (34%), reverse Hill–Sachs (29%), rotator cuff tear (13%)
- 3  **Mechanism of Injury**
  - Significant trauma (posteriorly–directed force)
  - Seizure / epilepsy (can be bilateral)
  - Electrocution (bilateral)
  - Alcohol intoxication / unconsciousness
  - Repetitive trauma (e.g., military, push–ups)
- 4  **Shoulder Exam**
  - Fixed internal rotation
  - Inability to externally rotate
  - Limited flexion, abduction
  - Flattening anterior shoulder
- 5  **Radiographs – Orthogonal Views are Crucial**
  - AP projection alone is insufficient
  - Light bulb sign
  - Vacant glenoid sign
  - Break in Moloney’s line
- 6  **Lateral Radiographs**
  - Axillary lateral
  - VelpEAU lateral technique
  - Trans–scapular lateral
- 7  **Advanced Imaging for Posterior Dislocations**
  - Preop planning tools
  - CT scan – reverse Hill–Sachs, reverse bony Bankart
  - MRI or MR–Arthrogram – reverse HAGL, reverse Bankart, rotator cuff tear
- 8  **Reduction Techniques for Acute Dislocations < 3 weeks**
  - IV sedation in ER or general anesthesia in OR
  - Closed maneuver – traction–countertraction after posterior drawer to disengage head
  - Arthroscopic technique – pushing rotator cuff w/switching stick posteromedial to head
- 9  **Rehabilitation**
  - If stable, sling for comfort
  - If unstable, 4–6 wks in shoulder immobilizer in ER, early pendulum & PROM
  - Immobilization discontinued at 4–6 wks, start AROM, then strengthening
- 10  **The success of closed reduction in acute locked posterior fracture–dislocations of the shoulder**

Duralde et al., JSES 2006; 15: 701–06

  - Retrospective review 7 pts reduced under general anesthesia within 2 weeks of injury
  - Humeral head defects from 18% to 32%

- All pts had posterior instability after reduction
  - Immobilized in neutral rotation for 6 weeks
  - 6 of 7 were stable at mean F/U 46 months
- 11  **Surgical Treatment is Based on Size of Humeral Head Defect**
- Reverse Hill-Sachs < 20% – McLaughlin procedure or arthroscopic reverse Bankart repair
  - RHS 20–40% – modified McLaughlin procedure or segmental bone allograft of head defect
  - RHS > 40% (massive head impaction) – anterior approach for hemiarthroplasty, post labral repair
- 12  **McLaughlin Procedure**
- Transfer subscapularis tendon into humeral head bony defect
  - Modified McLaughlin – transfer lesser tuberosity and subscapularis tendon into humeral head defect
- 13  **Chronic Posterior Dislocations – More than 3 weeks Post-Injury**
- Softening head articular cartilage
  - Anterosuperior humeral head defect
  - Posterior glenoid rim bone loss
  - Concomitant rotator cuff tear (subscapularis)
  - Soft tissue contractures
- 14  **Clinical Presentation**
- Elderly > 70 yrs, poor historian, alcohol abuser or history of seizures
  - Initial shoulder pain improved
  - Exam – fixed internal rotation contracture
  - Functional ROM may return after humeral head remodeling
  - Imaging W/U includes XR, CT scan, MRI
- 15  **Management**
- Benign neglect if > 70 yrs, minimal pain, low functional demand (surprisingly well-tolerated)
  - Closed reduction, general anesthesia if < 3 wks (IR to stretch post capsule, lateral traction)
  - Allograft reconstruction preferred for moderate bony defect in viable humeral head
  - Arthroplasty if head defect > 40–50% (stemmed hemi, resurfacing or TSA)
- 16  **Long-term outcome of segmental reconstruction of the humeral head for the treatment of locked posterior dislocation of the shoulder**  
Gerber et al., JSES 2014; 23: 1682–90
- 19 pts w/mean head impaction 43% F/U min 5 yrs
  - Only 2 of 19 needed revision to prosthesis
  - Other 17 – 4 significant OA, 4 mild OA, 9 no OA
  - 18 rated excellent result, 0 good, 1 fair
  - Therapeutic Level IV case series (Switzerland)
- 17  **Anatomic Shoulder Arthroplasty as Treatment for Locked Posterior Dislocation of the Shoulder**  
Wooten et al., JBJS 2014; 96–A: e19(1–6)
- Review 32 pts w/locked posterior dislocation
  - Pain, functional limitation, > 45% humeral head, cartilage fibrosis, osteopenia head
  - 18 rx w/hemiarthroplasty, 14 w/TSA
  - 4 excellent, 15 satisfactory, 13 unsatisfactory

- Improved shoulder pain, ER (9 re-operated)
- Therapeutic Level IV study (Mayo Clinic)

## 18 Posterior GHJ Recurrent Subluxation – Clinical History

- Younger patient population, throwing athletes, football linemen
- Usually no single event or injury
- Pain in certain arm positions, throwing
- Shoulder fatigue, loss of throwing velocity
- Weakness or “dead arm syndrome”
- Numbness, paresthesias in ulnar distribution

## 19 Clinical Exam – Provocative Tests

- Jerk test
- Kim test
- Posterior drawer test

## 20 Range of Pathoanatomy

- Posterior labral split
- Posterior capsular tear
- Kim lesion (incomplete posteroinferior labral avulsion)
- Reverse Bankart lesion
- Posterior labrocapsular periosteal sleeve avulsion
- Humeral avulsion of posteroinferior glenohumeral ligament (reverse HAGL)

## 21 MR–Arthrogram

- Preferred diagnostic test
- May show reverse Bankart lesion, reverse HAGL
- Position arm in flexion, adduction, internal rotation to improve chance contrast will demonstrate tear

## 22 Treatment

- Initial treatment is physical therapy for strengthening scapular stabilizers
- Arthroscopic posterior labral repair is gold standard (less morbidity, allows treatment of concomitant pathology)
- Open surgery preferred for osseous defects, pathologic glenoid retroversion, reverse HAGL lesion

## 23 Arthroscopic Technique

- Lateral decubitus position
- Key posterolateral portal for anchor placement at 45 degree angle
- Anterior viewing portal
- Start inferior, most difficult pass first
- Capsule much thinner posteriorly
- Close posterior rent in capsule