



Ep 36- Shoulder Arthritis w/ Dr. Garrigues

History

- Loss of shoulder motion + pain (with activity, at night)
- Crepitus , history of dislocation/instability
- Trauma, prior surgical procedures
- recreation activity, desired activity level

Primary vs Secondary

Physical Examination

- Inspection: symmetry, atrophy, previous surgical incisions.
- Palpation: posterior capsule, AC joint, greater tuberosity, biceps groove
- ROM- painful arc, FF, abduction, extension. ER at 0 and 90, IR (dec rotation mid ROM- arthritic pain vs terminal ROM pain more impingement, osteophytes, capsular contraction)
- Strength testing. Specific RTC tendons
- C- spine ROM.

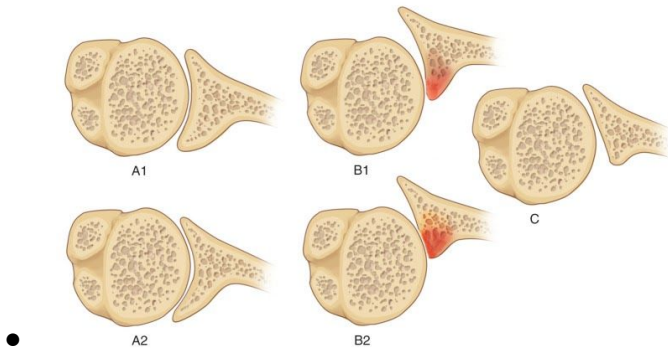
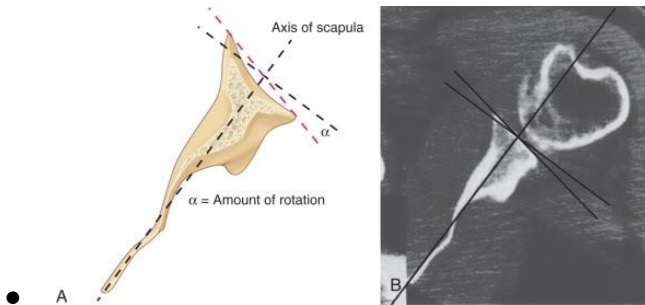




Imaging.

Xray: AP, Grashey, axillary, scap y, bernageau

- CT Arthrography- eval joint (glenoid morphology/version, bone stock + quality, status of cartilage + RTC)
 - o **Walch-** classify bony anatomy of posterior glenoid wear in the AP plane- eval for bioconcavity (CT)





Arthritis Classification/Causes

- Primary arthritis (rare in young athlete, common 60 y/o +)
 - GH stiffness > joint space narrowing > HH + inferior glenoid osteophytes, intact rotator cuff
 - Posterior humeral head subluxation- may be 1st sign of GH arthritis. Spinoglenoid cyst sign of GH degeneration
- Instability Arthropathy
 - Dislocation arthropathy- assoc w/ increasing age at initial event, dislocation direction (more damage posterior), + associated glenoid fx.
 - Capsulorrhaphy arthropathy
 - Arthritis attributed to over tightening capsular structures (leads to abnormal HH translation opposite of capsulorrhaphy)
 - Found in male pts age 45, linked to length of time since follow up, amount of ER contracture, age at initial trauma.
 - Leads to non anatomic biomechanics, asymmetric cartilage wear, and arthritis
- Chondrolysis
 - Weeks/months after arthroscopic surgery. Unexpected pain and loss of joint mobility
 - Imaging: global dissolution of cartilage on HH + glenoid. Joint space narrowing, periarticular bone edema, subchondral cystic changes. WITHOUT osteophyte formation
 - Unknown etiology
 - Has been associated In patients w/ post-arthroscopic infusion of local anesthetic bupivacaine- 13%



- Rheumatoid arthritis
 - Affects synovial linings of both small + large joints. Present in shoulder in 90% of pmts w/ chronic rheumatoid disease.
 - Radiographs- medial migration of HH into glenoid w/ central erosion of articular surface. Osteopenia bone quality
 - Cystic formation at RTC insertion. May lead to RTC deficiency, static superior migration, uneven joint erosion. CHECK C SPINE



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- Osteonecrosis
 - Development of avascular regions of periarticular bone > infarction, necrosis, collapse of bony architecture.
 - Crescent sign + collapse of radiographs.
 - Cruess osteonecrosis classification



Treatment

NON op tx

- Activity modification, PT (strengthening periscapular, deltoid, and RTC muscles. Stretching), oral NSAIDS
- GH injection w/ lidocaine + steroid (sxs may return in younger pt)
- Viscosupplementation (some symptomatic relief)

OPERATIVE tx

- Arthroscopic debridement-
 - Temporizing. Can provide some pain relief in pts <55y/o (also w/ bicep tenodesis/tenotomy, DCE, SAD, loose body removal, capsular release)
- Microfracture- for full thickness cartilage lesions. Good results
- Glenoidplasty
 - Restore glenoid morphology from biconcavity to single concave surface
 - Arthroscopic burr to resect anterior glenoid until flush w/ posterior joint
 - Contraindications- patients w/o biconcavity and pain in mid-arc motion. They do worse
- Osteocapsular arthroplasty-
 - remove osteophytes + perform capsular release of contractors.



- Arthroscopy for RA + osteonecrosis
 - Synovectomy helps RA early in disease process- not viable w/ radiographic signs of arthritis.
 - Osteonecrosis- arthroscopy + core decompression early in process. Results correlate w/ disease severity

Joint Re-surfacing techniques



- Osteochondral allografts- cases of bone defects on glenoid or HH. Large hill Sachs lesions >45% of articular surface
 - For younger patients, consider allograft, for older, consider arthroplasty)
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- Humeral head resurfacing- option for patients under 50, active.
- Biologic resurfacing- glenoid coverage w/ humeral sided hemiarthroplasty.
 - Fascia lata autograft, anterior shoulder capsule, achilles allograft, etc.
 - Mixed results.
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- Glenohumeral arthroplasty-
 - TSA
 - statistically superior to hemi
 - Less favorable results w/ fast degeneration or goutallier 2+ infiltration in infraspinatus and subscap
 - W/ large RTC tears- difficult to maintain COR (superior migration of HH, point loading of superior glenoid component)



- Can tx patients w/ inflammatory arthritis.
- for instability arthropathy- address glenoid defects. Soft tissue releases. Consider Subscap lengthening for IR contractures
- How do you account for posterior humeral subluxation and posterior glenoid wear?
- “Ream and run” technique in younger pts- ream glenoid concentric and leave labrum
- Consider R- TSA in pts w/ no RTC function
- Arthrodesis- end stage savage.
 - Optimal position is 20 deg FF and ABduction, 40 deg IR

Complications

- Humerus fx, greater tuberosity fx, glenoid fx, RTC rupture
- Wound dehiscence , preprosthetic fracture, infection, instability

Sources: DeLee and Drez: sports medicine. Chapter- GH arthritis in the Athlete

[DeLee, Drez, & Miller's Orthopaedic Sports Medicine](#), 52, 592-608.e5