Shoulder Pathology: An Orthopaedic Perspective

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I have no disclosures
People only see what they are prepared to see

Ralph Waldo Emerson
Shoulder Anatomy

- Extra-articular anatomy
- Intra-articular anatomy
Extra-articular Anatomy

- Outer sleeve
- Inner sleeve
• Anteriorly:
  • - Deltoid
  • - Pectoralis major
- Posteriorly:
  - Posterior half of deltoid
  - Trapezius
Extra-articular Anatomy

- Outer sleeve
- Inner sleeve
Anteriorly:
- Rotator cuff
- Ant. Supraspinatus
- Subscapularis
- Conjoint tendon
• Posteriorly:
  • - Rotator cuff
    • Post. Supraspinatus
    • Infraspinatus
    • Teres minor
  • - Teres major
  • - Triceps
Neurovascular Anatomy

- Anteriorly
  - outer sleeve
  - cephalics vein
  - inner sleeve
  - axillary nerve
  - musculocutaneos n.
Neurovascular Anatomy
• Posteriorly
  • Inner sleeve
  • Quadrangular space:
    • axillary nerve
    • posterior circumflex a.
  • Triangular space:
    • circumflex scapular a.
  • Suprascapular n. branches
- Superiorly
- Suprascapular nerve, artery and vein
Shoulder Arthroscopy Portals
Posterior Portal
Posterior Portal
Posterior Portal
Anterior Portal
Anterior Portal

Pectoralis major

Deltoid
Accessories Portals

- Anterior
- Posterior
- Superior
Normal View from Posterior Portal
Normal Labral Anatomy From Beach Chair Position
Normal Labral Anatomy
Normal Labral Anatomy

- Glenohumeral ligaments
- Capsule
- Biceps tendon
Glenohumeral Ligaments

- Biceps, long head
- Superior gleno-humeral ligament
- Middle gleno-humeral ligament
- Synovial lining
- Subscapularis
- Inferior gleno-humeral ligament
Glenohumeral Ligaments
Normal Labral Anatomy

- Glenohumeral ligament
- Capsule
- Biceps tendon
Normal Labral Anatomy

- Glenohumeral ligament
- Capsule
- Biceps tendon
Rotator Cuff

Components of the Rotator Cuff

A. Teres minor

B. Infraspinatus

C. Subscapularis

Coraco-acromial ligament
STABILIZING CONTRIBUTORS

- Glenoid cavity and labrum
- Scapular glenoid version
- Muscles
- Coracoacromial Arch
- Glenohumeral Ligaments
- Adhesion-Cohesion / Suction Cup
Biomechanical Aspects of Labral Function
Adhesion-Cohesion / Suction Cup

- The wettable surfaces of the HH and the coracoacromial arch and the glenoid and the HH adhere to each other
- Like water between two microscope slides
  - Slides easily
  - Won't pull apart easily
• Suction cup is noncompliant in the center and flexible at the periphery
• Glenoid sticks to the HH like a suction cup and flexible labrum helps to further conform the articulation
• Suction cup effect enhanced by negative intra-articular pressure
When glenoid lip or labrum is lacking or when smooth cartilage is missing, adhesion-cohesion and the suction cup effect are lost
Types of SLAP Lesion

- Type I
- Type II
- Type III
- Type IV
Labrum Sections
Normal Labral Anatomy

יץ Biceps Tendon
Etiology of SLAP Lesions

Impaction + compression
Etiology of SLAP Lesions

Repetitive Trauma
Etiology of SLAP Lesions

Pull of the Arm
Patterns of Injury

- Flap Tear
- Incomplete Split Tear
- Bucket Handle Tear
- Degenerative Tears
- Lesions in Throwing Athletes
- SLAP Lesion
Patterns of Injury

Degenerative tears

Flap tears
Patterns of Injury

Bucket Handle tear
**SLAP LESION CLASSIFICATION:**

*Type I*

- Superior aspect of the labrum is frayed and degenerated with a normal (stable) biceps tendon anchor

SLAP LESION CLASSIFICATION:

Type II

- Fraying and degeneration, but the superior labrum and biceps are detached making the lesion unstable.

MRI
SLAP Lesion
SLAP LESION CLASSIFICATION:

Type III

• Bucket handle tear of the superior labrum without extension into the biceps tendon. The biceps anchor is stable.

SLAP LESION CLASSIFICATION:  
Type IV

- Bucket handle tear of the meniscoid superior aspect of the labrum with extension into the biceps tendon.

“Fixing” these normal variations can result in marked restriction in rotation.
Superior labral lesions in the shoulder: pathoanatomy and surgical management
RA Mileski and SJ Snyder. JAAOS, Mar 1998; 6: 121 - 131
Completed Repair
• MRI Tear of Capsule
Tear of Capsule
Tear of Capsule and Detachment of Labrum
• MRI Labral Detachment
MRI
Capsule Tear- Labral Tear-Glenoid Fracture

Hill-Sachs Lesion
Anterior Labral Detachment
Key technical points for arthroscopic surgery

- Make sure you have good portal placement
- You want the anterior portal to be as lateral and inferior as possible for anterior inferior lesions
Key Technical Points for any Arthroscopic Procedure

- Completely detach labrum - capsular complex from glenoid rim
Key Technical Points for any Arthroscopic Procedure

- Aggressively abrade scapular neck and remove any osseous Bankart
Key Technical Points for any Arthroscopic Procedure

- Place labrum onto articular surface
SO REMEMBER!!
THANK YOU