Shoulder Anatomy and a preface on the Shoulder Arthroscopy

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Shoulder Anatomy
Shoulder Anatomy

- Greatest ROM
- No inherent bony stability
- Relies on soft tissues for stability
- Many injuries involve the soft tissues (rotator cuff, labrum)
- Little glenoid bone stock
Shoulder Anatomy

Contributors to stability

Passive
- Jt conformity
- Jt pressure
- adhesion/cohesion
- ligament
Shoulder Anatomy

- F-H Offset
- B-C Head thickness
- D-E = 8mm
  Top of humeral head is higher than greater Tuberosity
Shoulder Anatomy

- Glenoid: 2° anteversion to 7° retroversion
- Humeral Head: 20° - 40° retroversion
Shoulder Anatomy

- Supraspinatus muscle
- Infraspinatus muscle
- Teres minor muscle
- Subscapularis muscle
Shoulder Stabilizers

- Rotator Cuff-
  - dynamic stabilizer
  - passive muscle tension
  - ligament tightening
  - compression of
  - articular surface
- GHL-
  - static stabilizer
Ligaments

- SGLH
- MGHL
- IGHL
- PIGHL
- CAL
- CHL
Rotator Cuff

![Rotator Cuff Diagram](image-url)
Rotator Cuff
Subacromial Bursa

- Supraspinatus muscle and tendon
- Acromion
- Subacromial bursa
- Clavicle
- Deltoide muscle
- Coracoid process
- Joint capsule
MRI for shoulder

- Axial plane  Bankart Lesion, BT
- Sagittal oblique plane
- Coronal oblique plane  Rotator cuff, SLAp
Shoulder MRI
Coronal Oblique View

Slice 9/18

- Acromioclavicular joint
- Acromion
- Supraspinatus t.
- Deltoid m. (lateral or acromial part)
- Humerus (head)
- Deltoid m. (lateral or acromial part)
- Trapezius m.
- Clavicle
- Supraspinatus m.
- Scapula (glenoid)
- Subscapularis m.
- Ribs
- Biceps m. (short head)
Shoulder MRI, Sagittal Oblique View

Slice 11/20

Acromioclavicular joint
Clavicle
Biceps t. (long head)
Deltoid m. (anterior or clavicular part)
Coracoid process
Subscapularis m.
Pectoralis major m.
Coracobrachialis m.
Pectoralis minor m.
Axillary vessels and brachial plexus

Acromion
Supraspinatus m.
Infraspinatus m.
Humerus
Deltoid m. (posterior or spinal part)
Teres minor m.
Labrum
Triceps m. (long head)
Latissimus dorsi m.
Teres major m.
Shoulder MRI, Axial View
Shoulder Arthroscopy

Scope; all procedures except Arthroplasty
Patient Position

- Beach chair the most common
- Lateral
Arthroscopy Equipment

- Fluid Management System;
- Arthropompe + Shaver system
Arthroscopy Equipment

- Arthroscopy ElectroCutery System
- ArthroCare® Coblation
- VAPR, Depuy Mitek
Basic Instrument

- Arthroscope
- 30° and 70° scopes
- Arthroscope sheath with matching sharp and blunt trochars
- Punches, Graspers, Seizers, Probes
- Suture passers, Knot pusher
Instrumentation

- #11 scalpel blade
- Skin marking pencil
- 18 g. needle
- 20 cc syringe (if insufflating)
- 76 mm plastic cannula with a rubber dam
- Motorized shaver with soft tissue and bone shaving blades
- Suction punch
- Suture punch
Anchor Sutures

- Metal Anchor Suture    5, 6.5
- Bio Anchor Suture      5, 6.5
- Knotless Anchor Suture; push lock
Main Providers of Shoulder Arthroscopy

- Smith&Nephew, MA, USA
- MITEK Depuy, MA, USA
- Arthrex, FL, USA
Question

- How common are done shoulder Arthroscopy procedures?
Shoulder Arthroscopy portals
Posterior Portal, A

• Posterior Portal
  • 3 cm inferior and 1 cm medial to the posterolateral corner of the acromion
  • Passage to the posterior one-third of the deltid and an interval between infraspinatus and teres minor
• Structures at risk
  – Quadrangular space - posterior humeral circumflex artery and axillary nerve
  – Triangular space - scapular circumflex artery
  – Both spaces are 7-8 cm inferior to the posterior border of the acromion
Anterior Portal

- Located one-half the distance between the coracoid process and the anterolateral edge of the acromion
- Passage through the skin subcutaneous tissue and the anterior one-third of the deltoid

- Structures at risk
  - Musculocutaneous nerve, normally located 3 cm inferior and just medial to the coracoid process
Lateral Portal

- 2-3 cm distal to the lateral border of the acromion
- Passage through the deltoid muscle
- Axillary nerve
- Located approx. 5 cm beyond the acromion
- Structures at risk:
  - Axillary nerve
Supraspinatus fossa portal

- Soft spot bordered anteriorly by the posterior margin of the clavicle, laterally by the medial border of the acromion, posteriorly by the scapular spine
- Passage through the trapezius and the muscle belly of the supraspinatus
- Structures at risk
  - Suprascapular nerve and artery
  - Located in the fossa approx. 3 cm medial to the portal
Arthoscopic surgery for shoulder surgery

- 1- Arthroscopic Bankart repair (one row repair)
- 2- Casiope Repair (double Bankart row repair)
- 3- All arthroscopic Laterjat procedure
- 4- Capsular shift
- 5- Rotator interval closure
- Repair of HAGEL lesion
- Repair of SLAP lesion
- Arthroscopic Rotaor cuff Surgery
- Arthroscopic Subacromion decompression
- Arthroscopic Acropmioplasty
- rotator cuff repair
  - one row
  - double row
Actual DOUBLE ROW Technique
Arthroscopic Brachial plexus surgery

- Suprascapular nerve release
- Brachial plexus nerve release
- Axillary nerve release
- Quadrilateral and triangular release
Arthroscopic tendon transfer

- Latissmos dorsi transfer for rotator cuff deficiency, irreparable tears
- Arthroscopic priscapular bursectomy
AC Joint arthroscopic surgery

- Arthroscopic AC arthroplasty
- Arthroscopic AC instability reconstruction
Pioneers

- Modern & Advanced Shoulder Surgery
Rockwood Charls JR
Texas, US
JP Warner
Massachusetts, US
Joseph IANNOITTI
Cleveland Clinic, Ohio, US
Louis U. Bigliani
NY, US
Christian Gerber
Bern, Swiss
Peter Hybermeyer
Germany