

Arthroscopic Approach of the shoulder

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〈Historical Developments〉

- **The shoulder arthroscopy originated in the late 1970s**
- **The shoulder arthroscopy pioneers**
 - Burman MS (1931) Cadaver
 - Johnson LL (1980)
 - Caspari RB (1982)
 - Andrew JR (1983)

〈Operating Room Setup〉

- **Hypotensive anesthesia**
 - mean arterial pressure of about 90mmHg
 - systolic blood pressure of 100mmHg (Morrison DS et al., 1995)
- **Arthroscope**
 - Field of view
 - Apparent
 - Actual 90° 105°
 - inclination of view
 - 0°, 30°, 70°, 90°
 - Arthroscopic movement
 - pistonning (forward & backward movement)
 - angulation (sweeping motion)
 - rotation

“ Efficient arthroscopic manipulation separates
the fair from the excellent arthroscopic surgeon.”
- **Infusion systems**
 - pump system: peristaltic pump - pressure spike

- centrifugal pump - smoother control of pressure
- Gravity system: 1 ft=22 mmHg
simple & relatively inexpensive
- **Patient position**
 - Routine lateral suspension position
 - 45° of abduction
(for subacromial surg. Only 20 to 30 degrees)
 - 15° of forward flexion
 - 10 lb weight (arm distraction, abduction traction)
 - the body to roll 30° to 40° posteriorly
(the plane of the shoulder joint in a horizontal position)
 - lateral arm suspension ⇒ glenohumeral ligament
 - Beach-chair position
easily switch to open surgery through the anterior deltopectoral approach
- **Examination under anesthesia (EUA)**
 - Room & ligamentous stability
 - increase in ext. rotation ⇒ subscapularis tear
 - increase in int. rotation ⇒ post. rotator cuff tear
(infraspinatus or teres minor)
 - limited ext. rotation ⇒ OA, Adhesive capsulitis
 - limited int. rotation ⇒ tight post. capsule
 - ant. instability
 - post. Instability

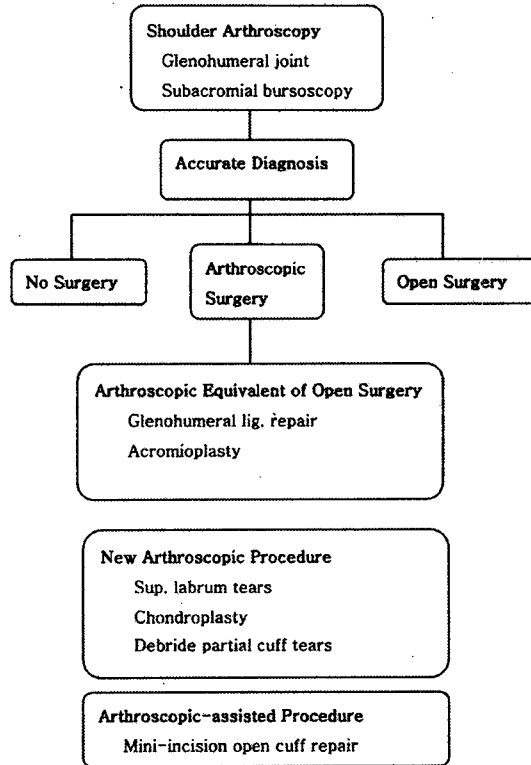
<Diagnostic Arthroscopy & Normal Anatomy>

- **Portal placement**
 - Posterior portal
 - the main visualization portal for most procedures
 - feel the A-P translation of the GH joint
 - define the posterior soft spot
 - 2 cm inferior & 2 cm medial to the posterolateral corner of the acromion
 - from the soft spot toward the coracoid
 - a conical obturator instead of a sharp obturator
 - infraspinatus-teres minor interval
 - Anterior portal
 - Inside-out technique (Wissinger rod)

- Outside-in technique
(observe capsular indentation caused by the palpating finger)
- anterior portal
- anteroinferior portal
- anterosuperior portal
- Accessary anterior portals
 - superior lateral portal - arthroscopic rotator cuff repair
 - Neviasser portal - repair of ant. Supraspinatus rotator cuff injuries arthroscopic distal calvicle resection
 - anterior inferior or 5 O' clock portal - arthroscopic labral stabilization
 - anterior lateral (SLAP) portal - repair anteriorly located sup. labral tears
- Accessary posterior portals
 - the port of Wilmington - labral repair in the post. superior quadrant of the glenoid
 - posterolateral or 7 O' clock portal - placement of placation sutures or anchor into the posterior inferior glenoid
- **Arthroscopic anatomy**
 - synovial tuft - mid-anterior 3 O' clock position
 - anterior triangle - the biceps tendon
the subscapularis tendon
the glenoid
 - SGHL - works with CHL
 - preventing ant. translation of the humeral head with the arm adducted and externally rotated
 - prevent inf. subluxation to the humeral head (sulcus sign)
 - MGHL
 - resist ant. translation of the humeral head at 45 degrees of abduction (Jobe, 1995)
 - crosses the subscapularis tendon at a 60° angle
 - attaches to the upper one-half of the glenoid & the neck of scapula
 - IGHL (ant. band)
 - prevents ant. translation of the humeral head when the arm is abducted 90 degrees and externally rotated
 - restricts inf. translation when the arm is abducted and internally rotated

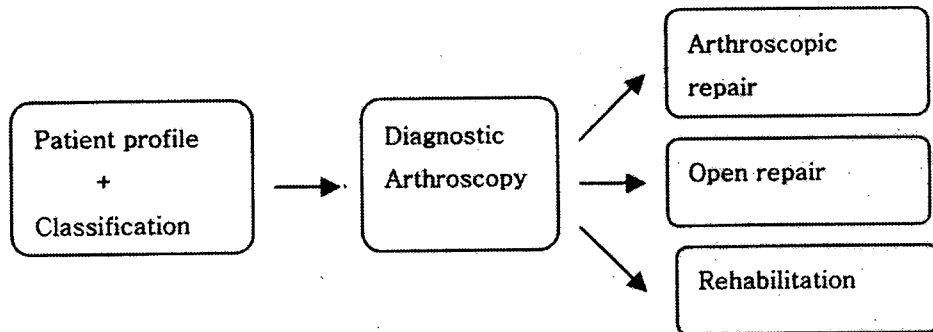
- (post. band)
 - prevents inf. translation of the humeral head when the arm is abducted 90 degrees and externally rotated
 - prevents post. translation when the arm is abducted & internally rotated (Jobe, 1991)
 - Biceps tendon
 - the best initial landmark for orientation
 - anatomic variation : meniscoid, loosely attached sup. labrum (app. 15%)
 - vincula biceps
 - bifid biceps
 - completely absent biceps
 - The central attachment of the sup. labrum
 - loose in 60% of patients
 - firm in 40% of patients
 - Ant. sup. labrum
 - attaches firmly to the glenoid rim (80%)
 - normal opening or sublabral foramen (14%)
 - Buford complex (6%)
 - MGHL
 - usual situation (70%)
 - cordlike appearance (20%)
 - thin veil or complete absence (10%)
 - Ant. inf. labrum
 - smooth attachment (95%)
 - meniscoid (5%)
 - Post. labrum
 - directly to the glenoid rim (95%)
 - meniscoid in appearance (less than 5%)
 - Sup. tendon slip of the subscapularis tendon
 - Glenoid fossa
 - Mid-glenoid notch (a tuft of synovium)
 - Bare area
 - remnants of old vascular channels
 - correlates to the attachment of the infraspinatus tendon
- **Diagnostic bursoscopy**
- fewer landmarks to aid orientation

<Overview of Shoulder Arthroscopy>



<Decision Planning>

- Instability



· Rotator cuff disease

