ARTHROSCOPIC SUBACROMIAL DECOMPRESSION

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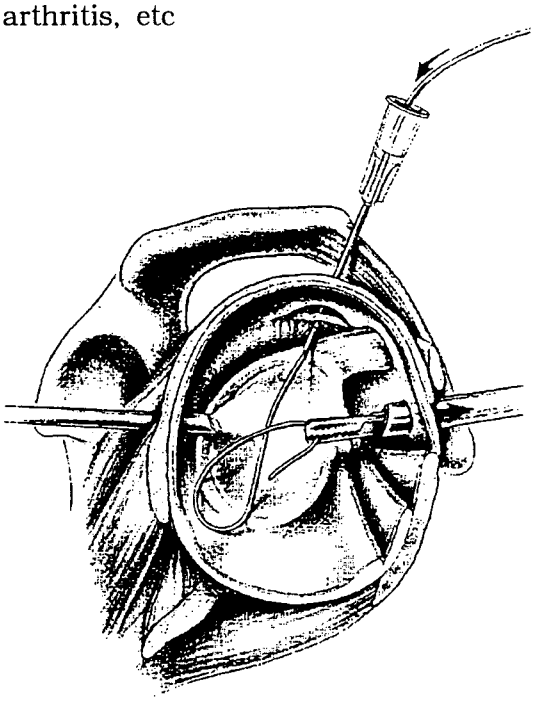
Patient Selection

- Patient with rotator cuff signs and symptoms
- Failed non-operative RX
- Office radiographs
  - Outlet view to determine :
    - Acromion type Ⅰ, Ⅱ, Ⅲ
    - Acromion thickness
  - Axillary view to determine :
    - Amount of acromion anterior to clavicle
    - Os acromial
  - AP View
    - Calcium, AC joint, arthritis, etc

Diagnostic Arthroscopy

Do in all cases
Glenohumeral arthroscopy
- Articular surfaces
- Ligaments
- Labrum
- Biceps
- Rotator cuff
- Suture marker prn

Subacromial bursoscopy
- "Bursitis"
- Rotator cuff
  - Size, shape, mobility
  - Ease of Repair
- CA ligament to acromion
- Suture marker prn

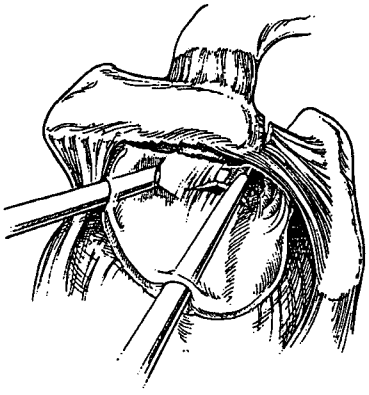


Cut the Coracoacromial Ligament[1]

Define the bony margins of the acromion and the acromial attachment of the coracoacromial ligament from the lateral portal. The synovial resector and burr are two essential tools for the procedure.

Select a technique to divide the acromial attachment of the coracoacrimial ligament. Use either an electrosurgical tool or a burr to peel its attachment off the undersurface of the acromion.

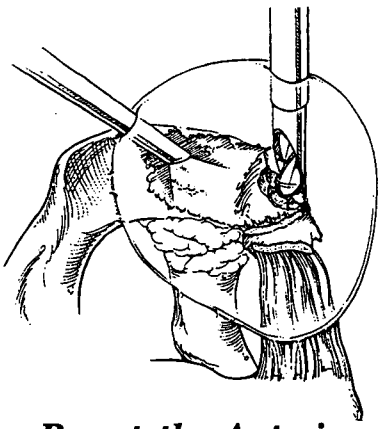
The author prefers to cut the coracoacromial ligament at its acromial attachment with an insulated electrosurgical tip(ArthroCare). Keep the tip against the bone because the vessels are 5~8mm. from the bone. Cauterize any bleeding vessels. A right-angle or curved electrosurgical instrument concentrates energy at the tip, allowong its use on a coagulation setting in a saline or lactated ringers environment.



Cut the CA Ligament

Anterior Acromion Resection

Resect the anterior acrimion from the lateral approach while viewing from the posterior portal. Start the full thickness removal if the leading edge, beginning at the anterolateral corner. A burr rapidly and efficiently removes the anterior acromion. The goal is to remove the anterior 5~8mm. of the acromion, consisting of the acromial osteophyte anterior to the leading edge of the clavicle.

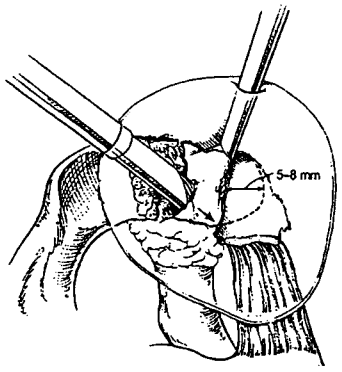


Resect the Anterior Acromion

Posterior Acromion Resection

Interchange the arthroscope and the cutting tool using the switching stick technique. Delineate the thickness and shape of the acromion arch with the arthroscope in the lateral portal and the synovial resector in the posterior portal. Then lay the burr along the posterior acromion and push anteriorly. Use the posterior acromion as a planing jig, converting the curved or hooked acromion to a straight line.[2] Aim from posteroinferior to the anterosuperior edge of the previous anterior resection.

This technique accurately defines the Type I acromion as the endpoint, avoiding excessive bone removal from a person with a thin acromion.



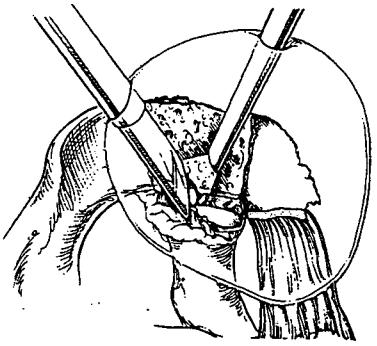
Anterior to posterior acromion resection

Resect AC Osteophytes

Expose the AC joint by resecting the inferior capsule and boned from the medial acromion and acromion facet. View with the arthroscope laterally and the resecting tool posterior.

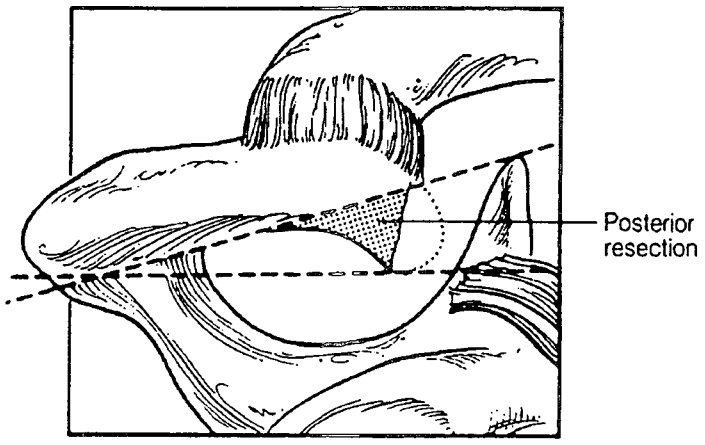
AC Resection

Resect the acromioclavicular joint if indicated. A distal clavicle resection (Mumford procedure) can be done equally well by arthroscopic or open methods.[3]



Resect AC joint prn

Final Resection



Final resection

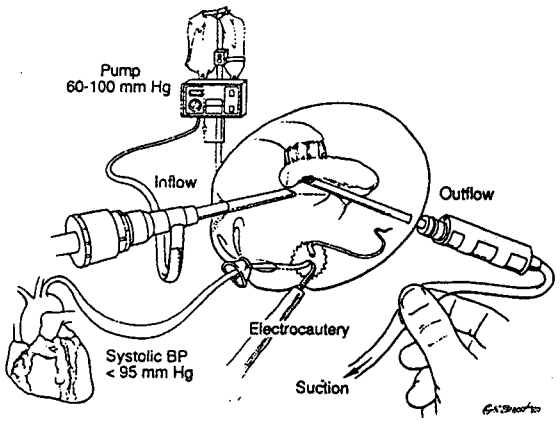
Control Bleeding during Arthroscopy

Increase Inflow
- Large cannula
- Pump

Reduce Outflow
- Small shavers
- Small burrs
- "Pinch" outflow prn

Reduce Blood Pressure
- ⟨ 95mmHg

Arthrocare Electrocautery



Control bleeding

Surgical complications

Inadequate surgical visualization due th bleeding or to the surgeon not entering the subacromial bursa is the main complication. Control bleeding by hydrostatic pressure applied through the infusion pump or by elevation the fluid bag. Ask the anesthesiologist to lower the patient'systolic blood pressure to less than 95mmHg. The initial Debridement of the lateral bursa with a small diameter synovial resector while visualizing from posterior avoids troublesome bleeding. This maneuver creates a lateral distended space and avoids bleeding from the medial tissue under the acromioclavicular joint.

Inadequate acromioplasty is another complication that accounts for poor results. [4 5] First, excise completely the acromion anterior to the leading edge of the clavicle. Complete the resection by converting the hooked Type Ⅲ acromion to a smooth Type Ⅰ acromion. Lateral arthroscope viewing while directing the burr from posterior to anterior constructs a well defined endpoint. Fractures of the acromion result from excessive thinning of the acromion, especially in females with a Type Ⅲ acromion.[6] Use a pre-operative arch view x-ray to determine the thickness of the acromion. The author prevents this complication by inspecting the thickness of the anterior acromion after resecting the anterior acromion 5~8mm. Avoid excessive thinning by resecting from posterior to the anterior superior corner.

Instability of the acromioclavicular joint occurred in several patients who began vigorous weight lifting within the first post-operative week. The symptoms subsided with several weeks of rest.

It is extremely important to recognize multidirectional instability. This occurs not only in the throwing athlete, but is present in workers who have an underlying congenital laxity of the joint. Patients with subacromial pathology and hypermobile glenohumeral joint may not be good candidates for subacromial decompression.[7]

Other complications include reflex sympathetic dystrophy, heterotopic ossification,[8] and an incorrect diagnosis. Some patients have unrealistic expectations because of preoperative stiffness, job pressures, and athletic stresses.

Post operative care

Apply ice and analgesics for relief of pain. Immediately demonstrate passive forward flexion and external rotation exercise to the patient. The patient performs circumduction exercises on the evening of surgery. Begin active assistive exercises when the patient is comfortable using an overhead exercise bar and pulley system. Initiate isokinetic diagonal exercises with surgical tubing when the patient obtains a painless full range of motion.

Patients who have undergone repair of a complete cuff tear begin passive exercises immediately. Delay active assistive exercises until the sixth week.

The physician or physical therapist directs the home program beginning with stretches with a bar and active assisted motion using a door pulley. The final phase includes strengthening exercises in internal rotation, external rotation, and diagonals using elastic tubing. A shoulder therapy kit(STK kit ; Breg Co., Vista, CA.) encourages the patient to perform exercises whether at home or traveling.

Drawing by Susan E. Brust, M.S. from Esch JC, Baker C. Surgical Arthroscopy : The Shoulder and Elbow. JB Lippincott CO., Philadelphia 1993.

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