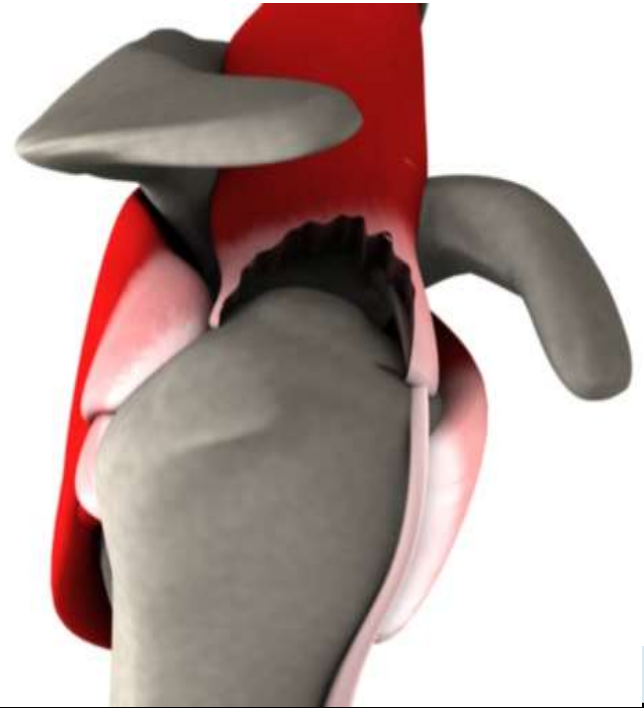


Treatment of Rotator cuff Tear

MN. Naderi ,MD

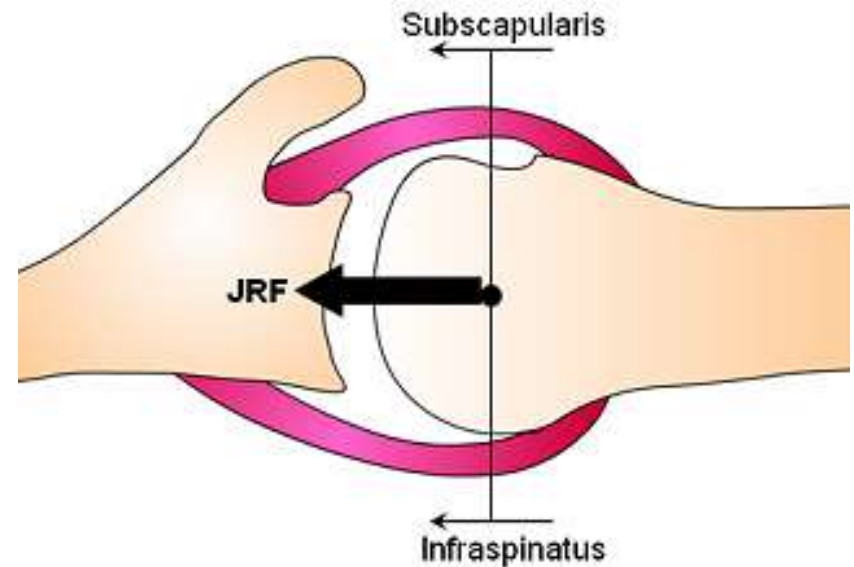
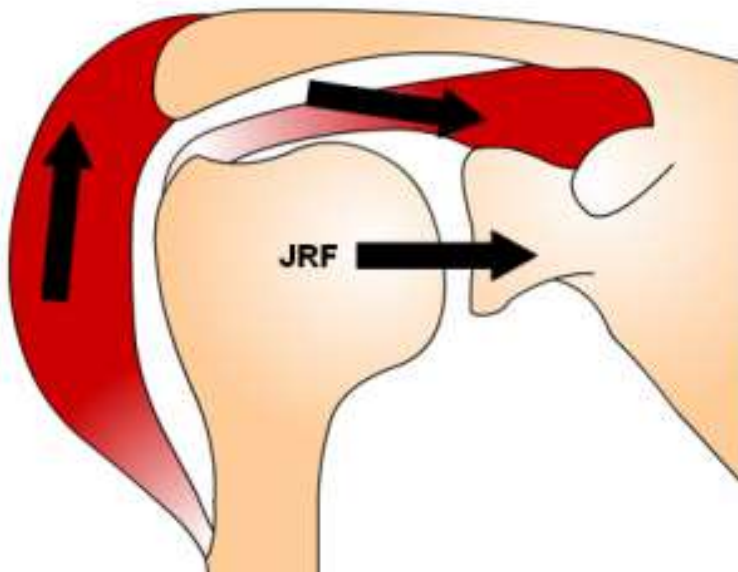


Clinical presentation

- ▶ Pain
- ▶ Weakness
- ▶ Reduced ROM
- ▶ Rotator cuff arthropathy



Inman's concept of "Force couples"



Inman VT, Saunders JBdM, Abbott LC. Observations on the Function of the Shoulder Joint. J Bone Joint Surg Am 1944;26:3.

Diagnosis

- ▶ Physical exam
- ▶ X-ray
- ▶ Sonography
- ▶ Arthrography
- ▶ MRI



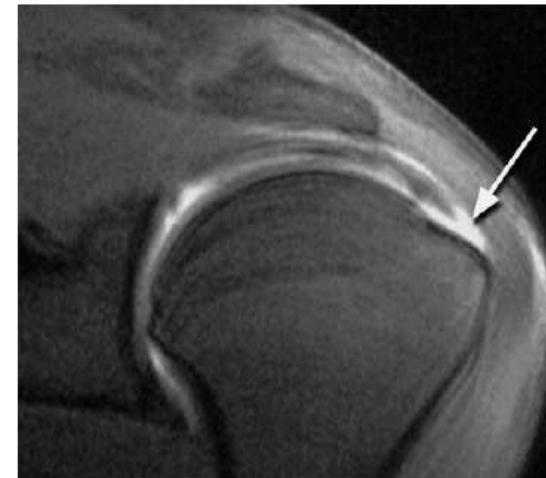
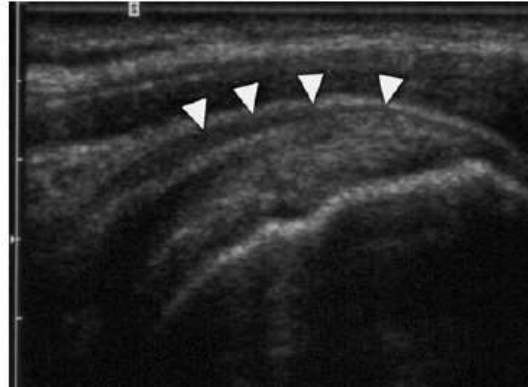
Diagnosis

- ▶ Physical exam
- ▶ X-ray
- ▶ Sonography
- ▶ Arthrography
- ▶ MRI



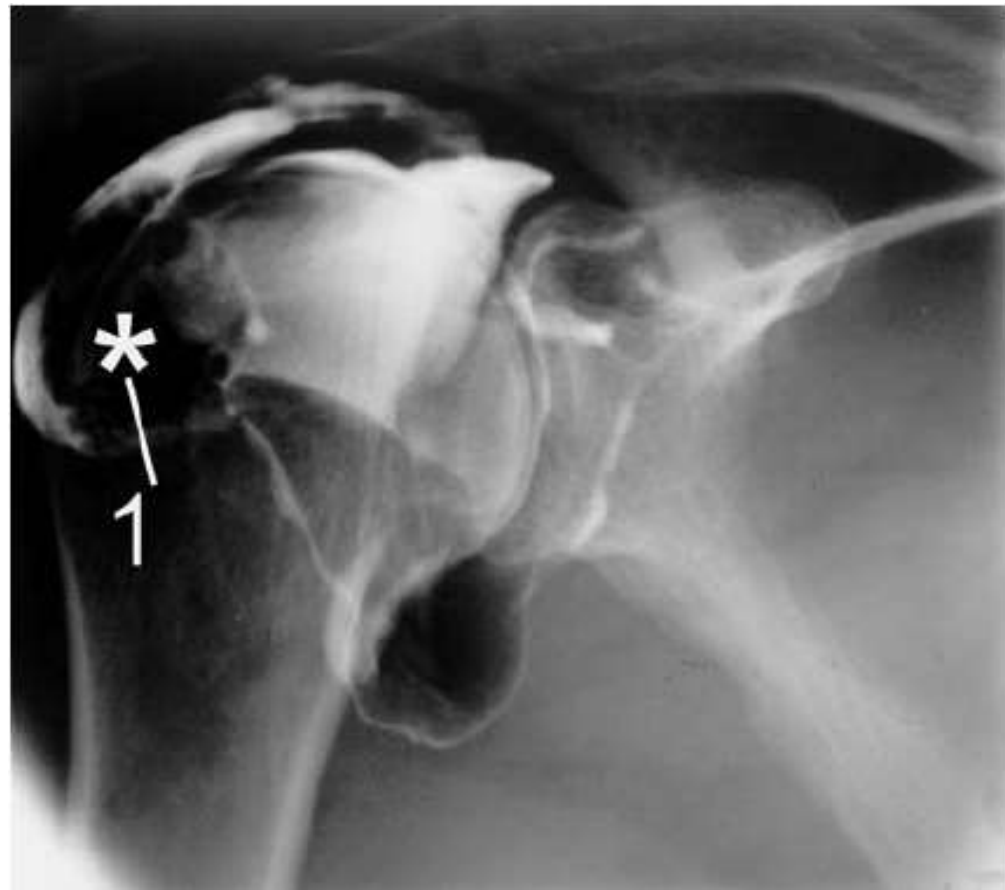
Diagnosis

- ▶ Physical exam
- ▶ X-ray
- ▶ Sonography
- ▶ Arthrography
- ▶ MRI



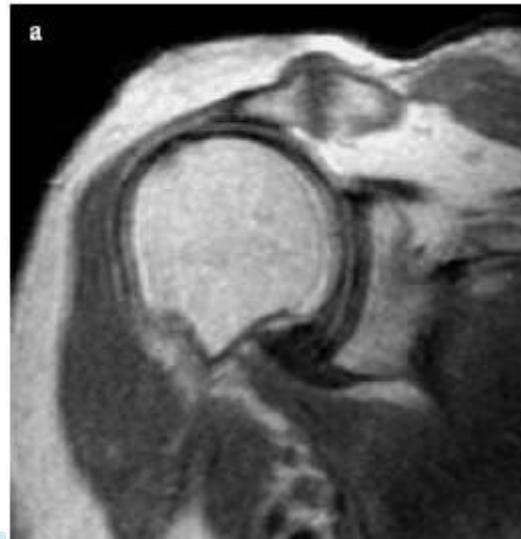
Diagnosis

- ▶ Physical exam
- ▶ X-ray
- ▶ Sonography
- ▶ **Arthrography**
- ▶ MRI



Diagnosis

- ▶ Physical exam
- ▶ X-ray
- ▶ Sonography
- ▶ Arthrography
- ▶ **MRI**



Do all cuff tears need treatment?

- ▶ The presence of a rotator cuff tear is not necessarily an indication for surgery
- ▶ MRI and cadaver studies have shown asymptomatic patients to have cuff tears



Evaluation of a patient with RC tear

- ▶ general health status & comorbidities
- ▶ current & desired functional level
- ▶ chronicity of the tear
- ▶ size of tear
- ▶ history of a traumatic event
- ▶ previous treatments



Aim of Nonoperative treatment

- ▶ help a patient with symptomatic rotator cuff disease become asymptomatic



Success of nonoperative treatment ?

- ▶ successful in 33% to 92% of cases
- ▶ pain as primary reason for functional weakness
- ▶ lidocaine injection to subacromial space
 - Patient able to elevate their arm to shoulder height


**Patients with longstanding pain (> 6 months)
did not respond well to nonoperative therapy**

Who is suitable for nonoperative treatment?

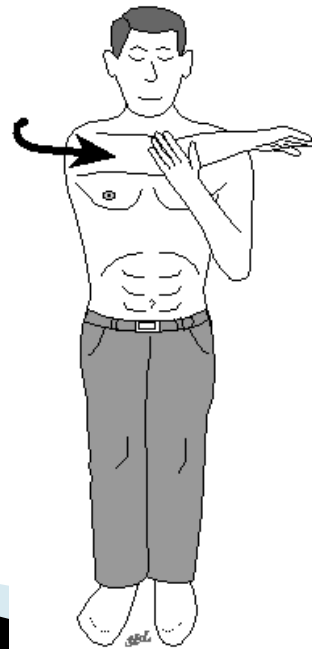
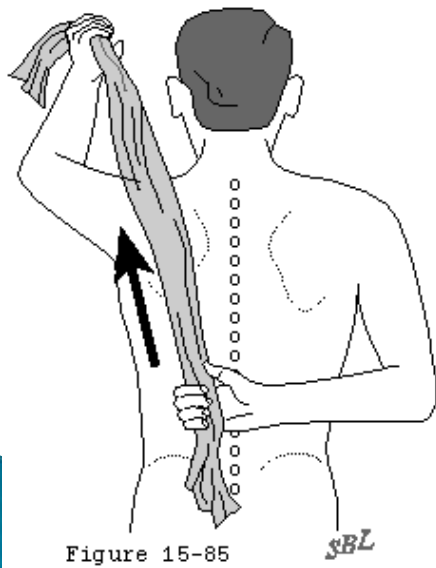
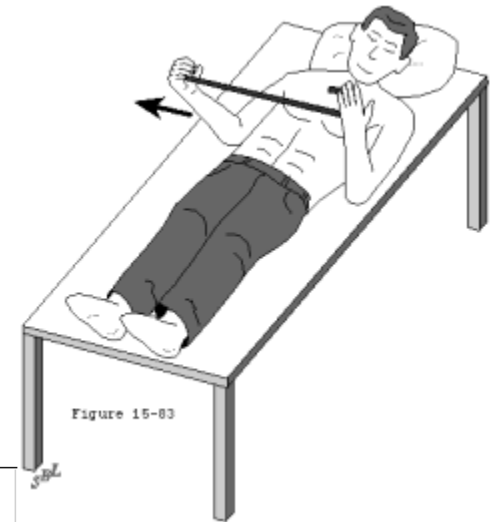
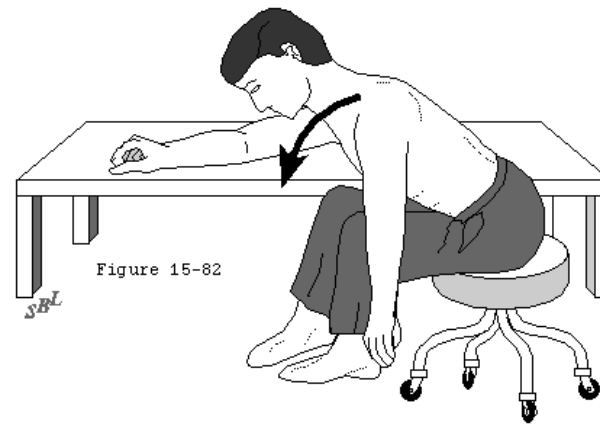
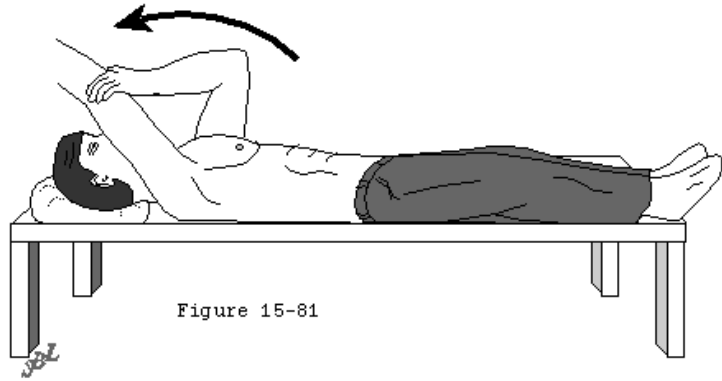
- ▶ chronic rotator cuff tear
- ▶ Tear limited to one tendon
- ▶ Non-traumatic
- ▶ Age > 60 y
- ▶ less active , low demanding patients



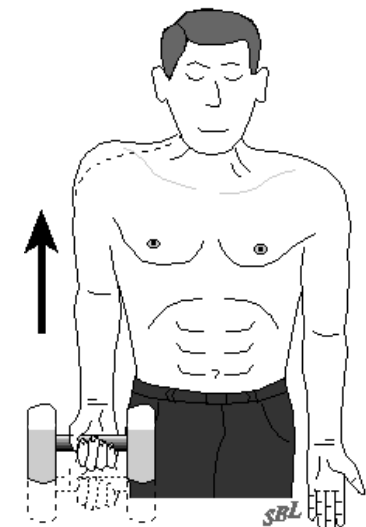
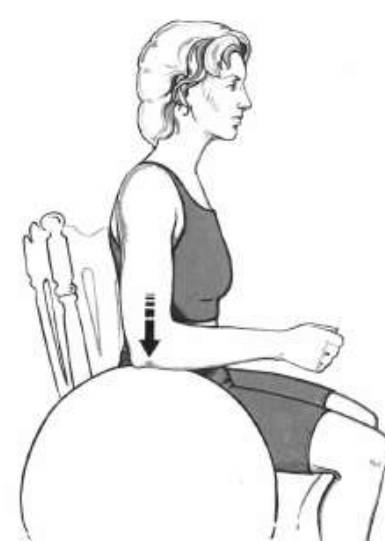
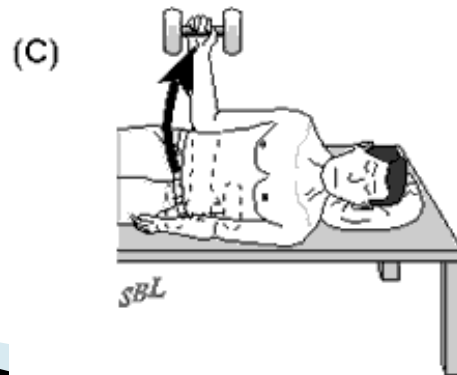
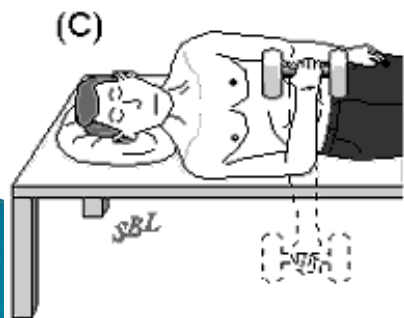
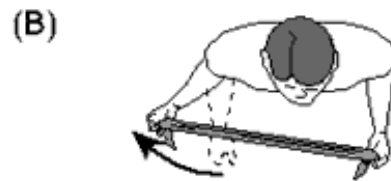
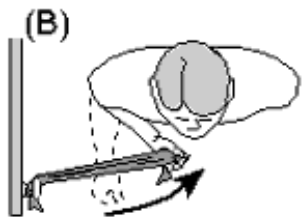
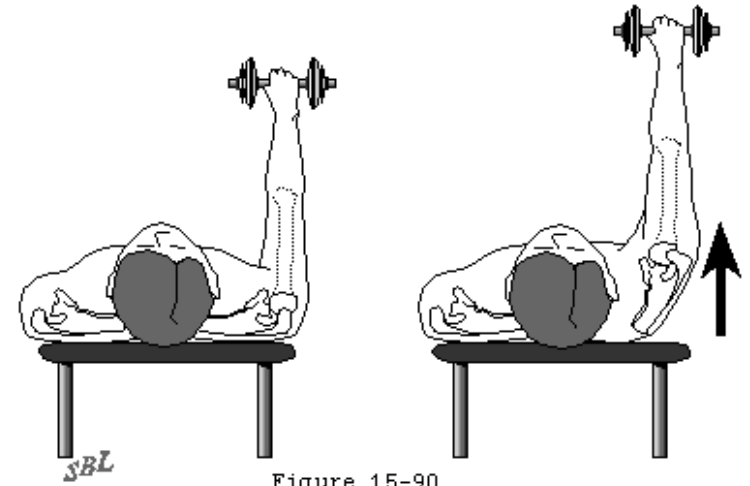
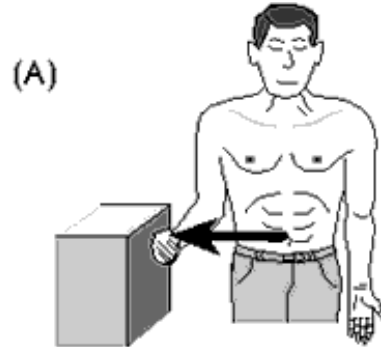
Nonoperative treatment

- ▶ NSAID
 - ▶ Heat application
 - ▶ Modification of activities
 - ▶ Exercises
 - Elimination of subtle stiffness (stretching of post. cap)
 - Strengthening of RC and parascapular muscles
- 

Elimination of subtle stiffness

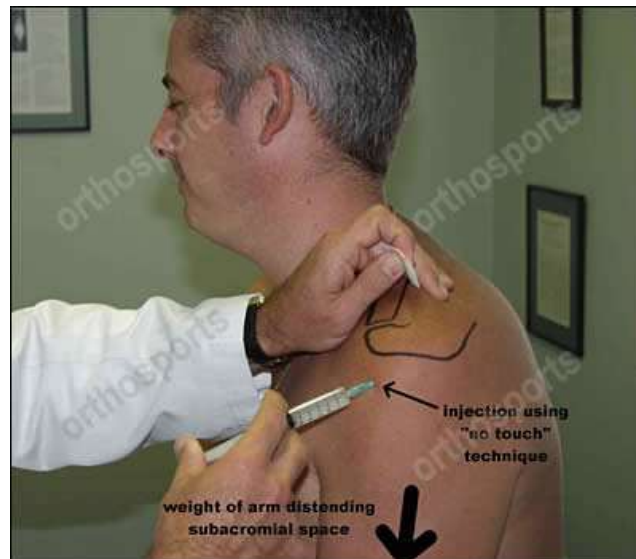


Strengthening of RC & parascapular muscles



Subacromial injection

- ▶ After 4–6 wk
- ▶ Can be repeated after 2–3 month
- ▶ Not more than 2 injection in a year



How long nonoperative treatment continue?

▣ 4 to *6 months*

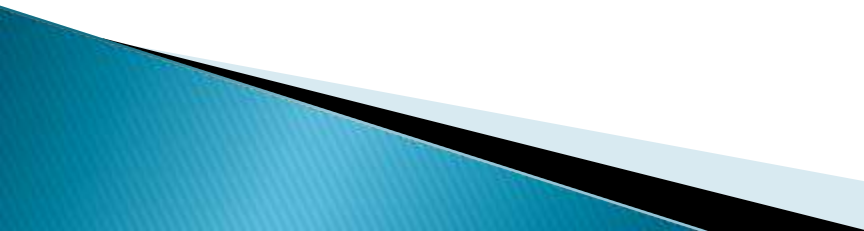
- No answer → MRI , consider surgical options

▶ When weakness is prominent or progressive, this process is accelerated

If tear size seems inconsistent with physical findings, other causes of weakness, especially a nerve injury, should be considered

How long nonoperative treatment continue?

▣ 4 to *6 months*

- No answer → MRI , consider surgical options
 - In a younger and active patient, an acute full-thickness tear is an indication for early surgery without any trial of nonoperative treatment
 - In these patients repair within the first 3 weeks resulted in the best surgical outcome
- 

Indications for surgical treatment

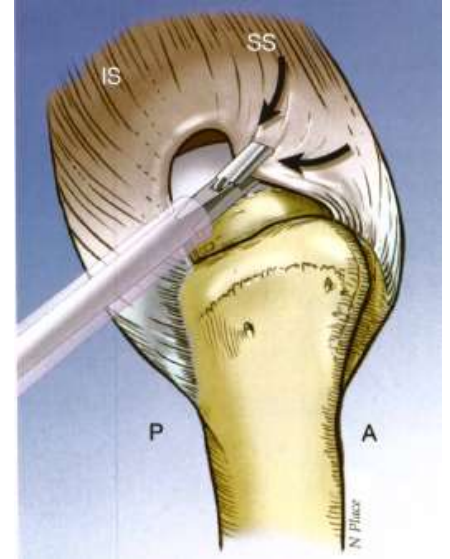
- ▶ **Pain (principal indication)**
- ▶ **Lack of mobility**
- ▶ **Diminished strength**



Indications for surgical treatment

▶ Results depend on :

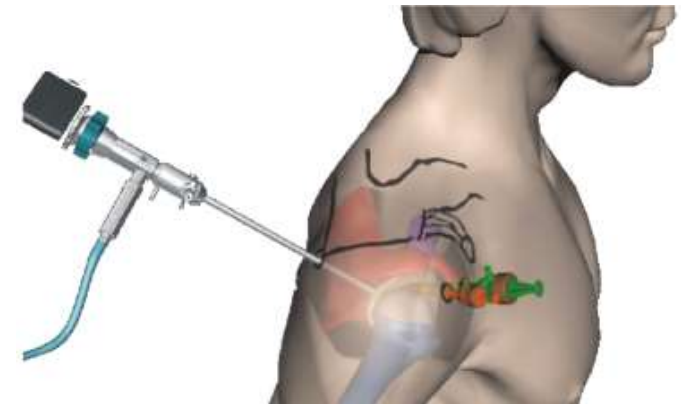
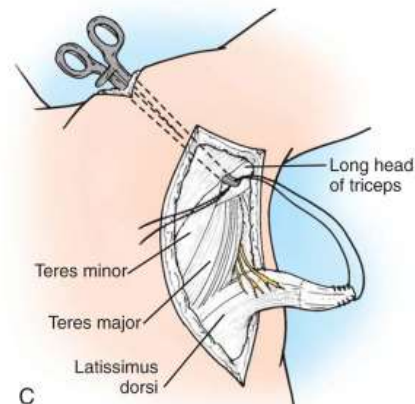
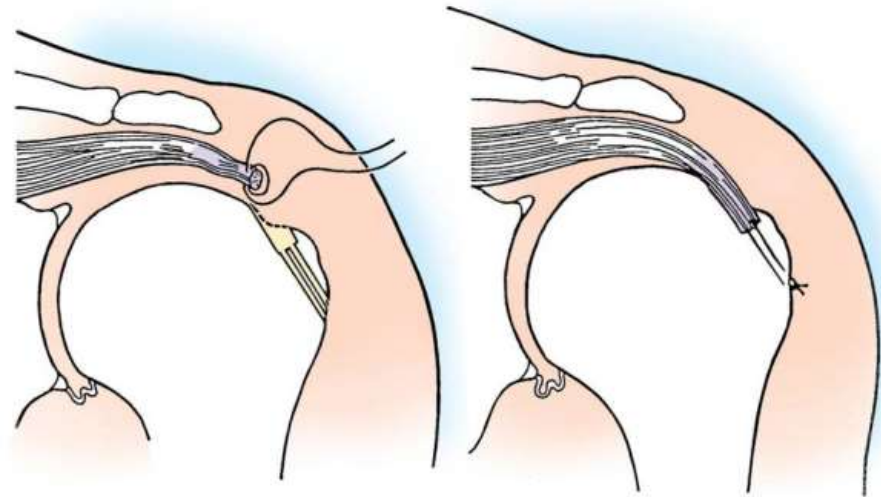
- tear size
- retraction
- tissue quality
- preoperative mobility
- patient's overall health



- ## ▶ Patients should understand their role in the postoperative rehabilitation and the length of time required for recovery

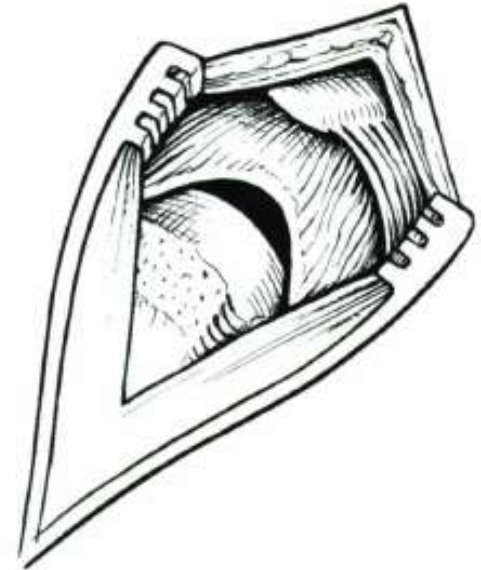
Treatment methods

- ▶ Open repair
- ▶ Muscle transfer
 - Subscapularis
 - Latissimus dorsi
- ▶ Arthroscopic



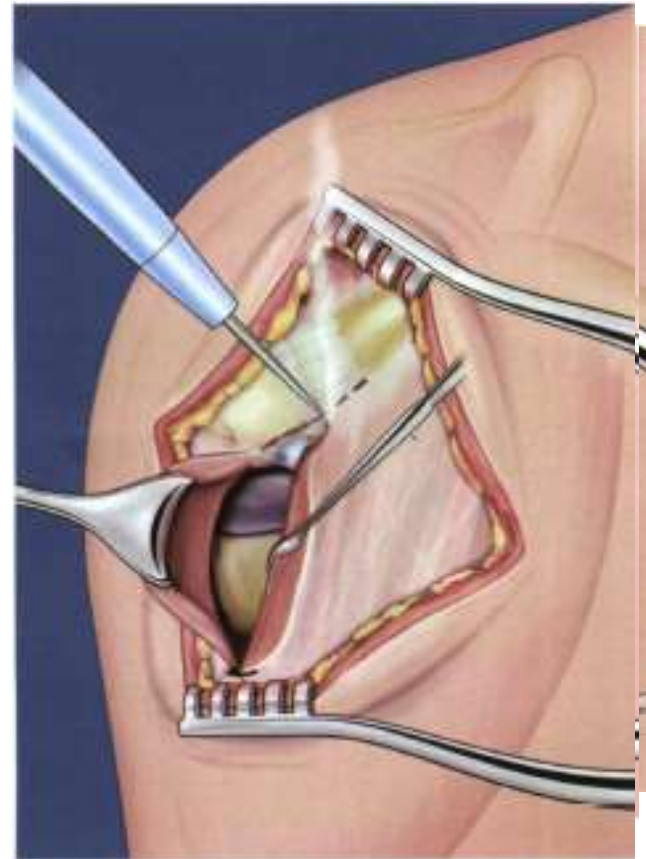
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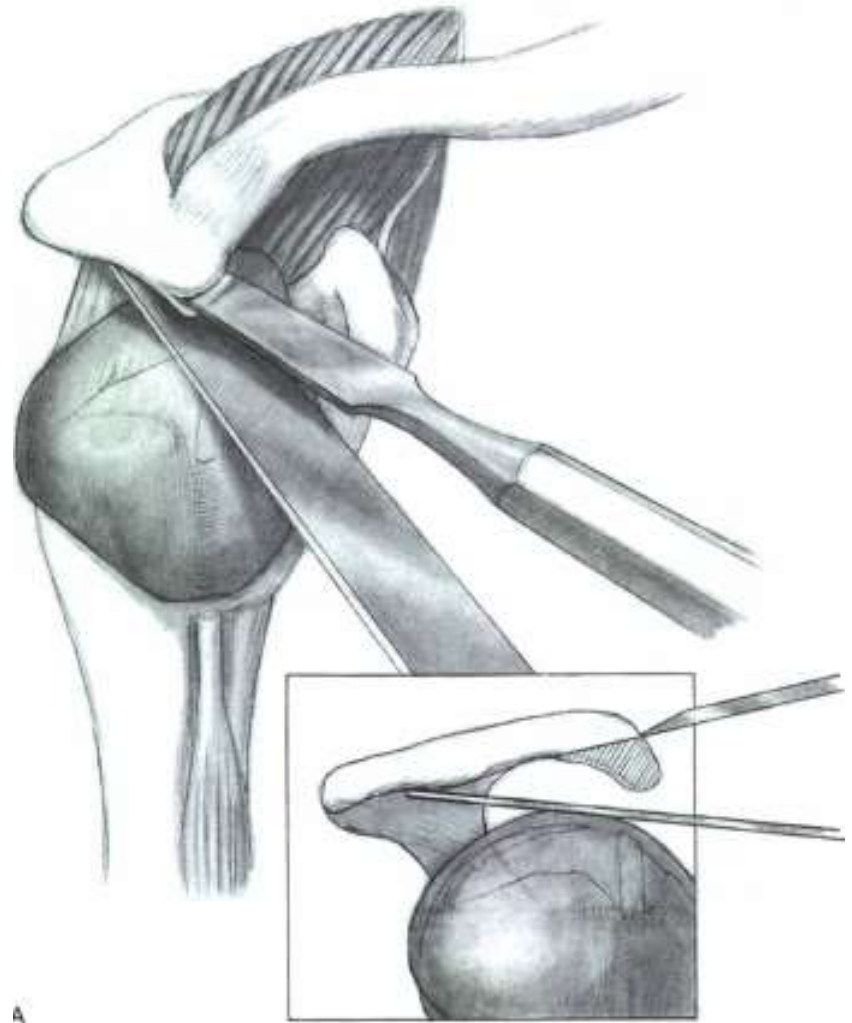
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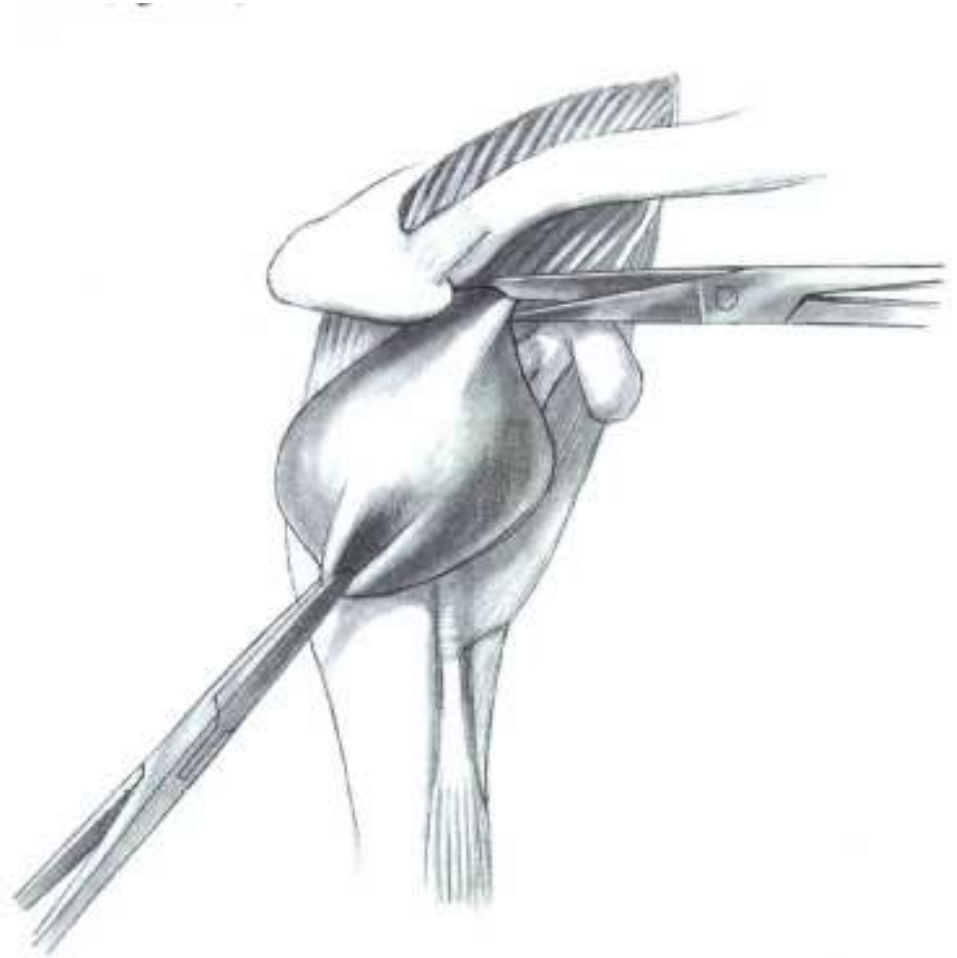
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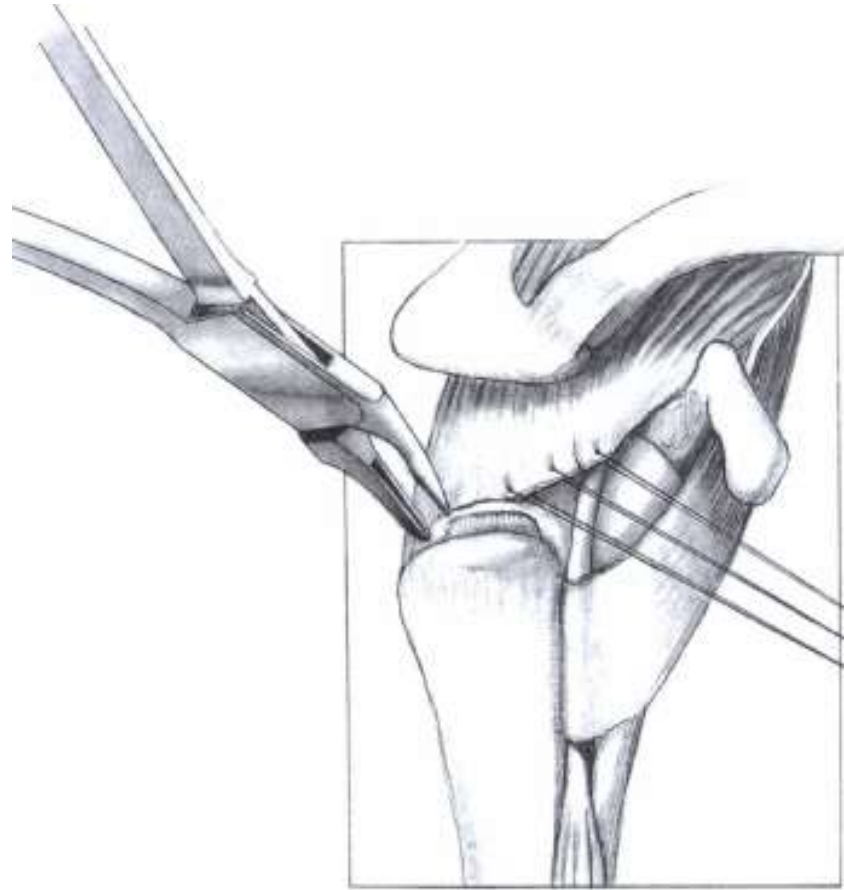
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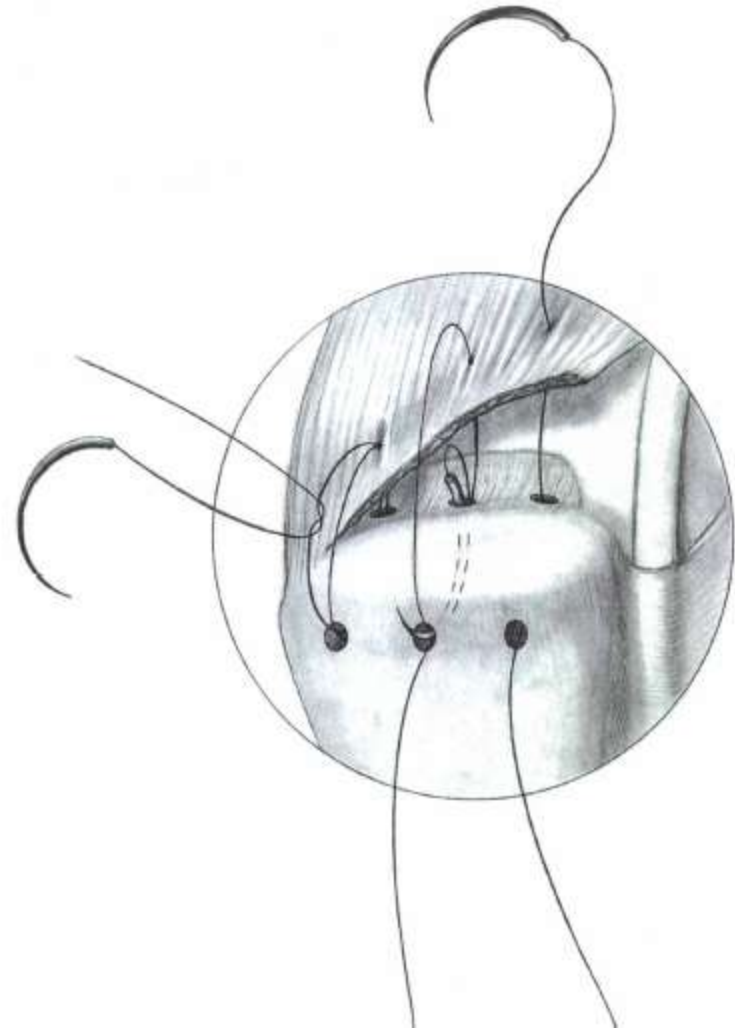
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Treatment methods

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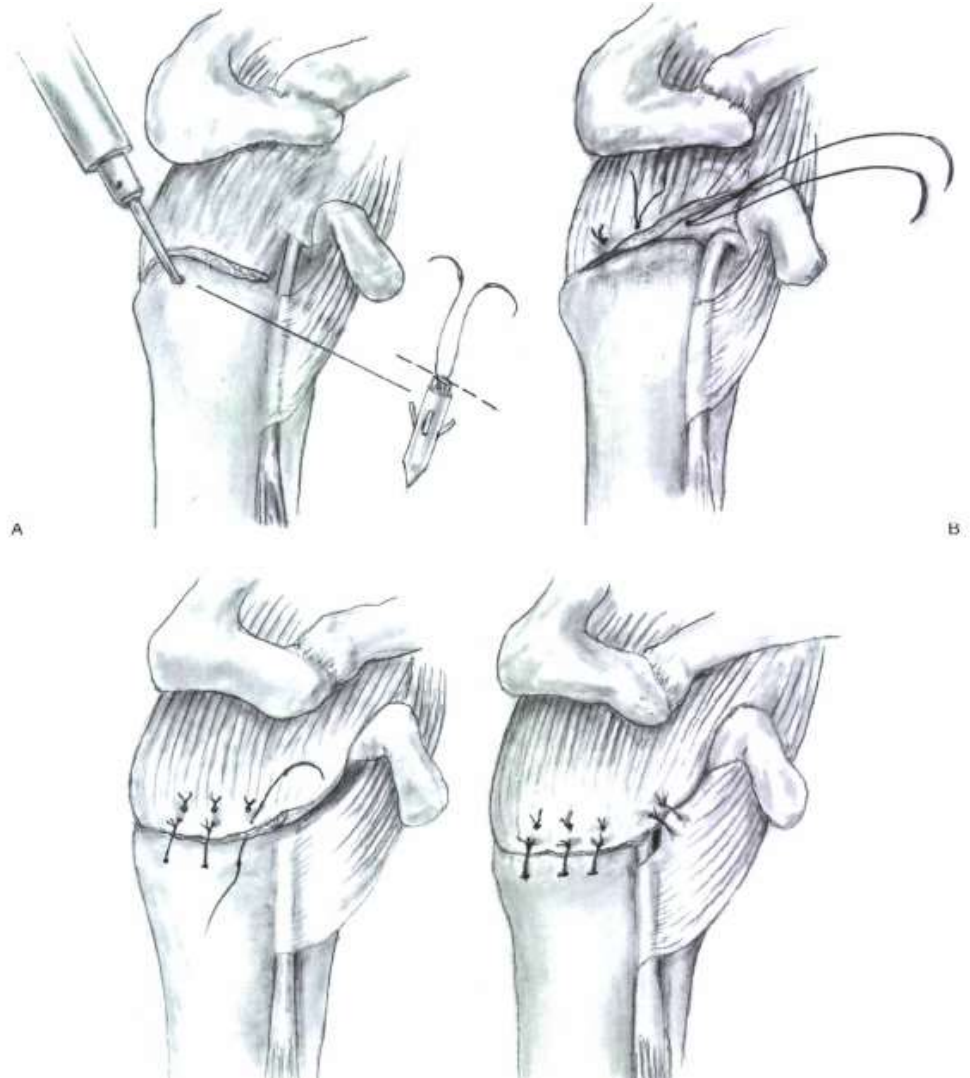
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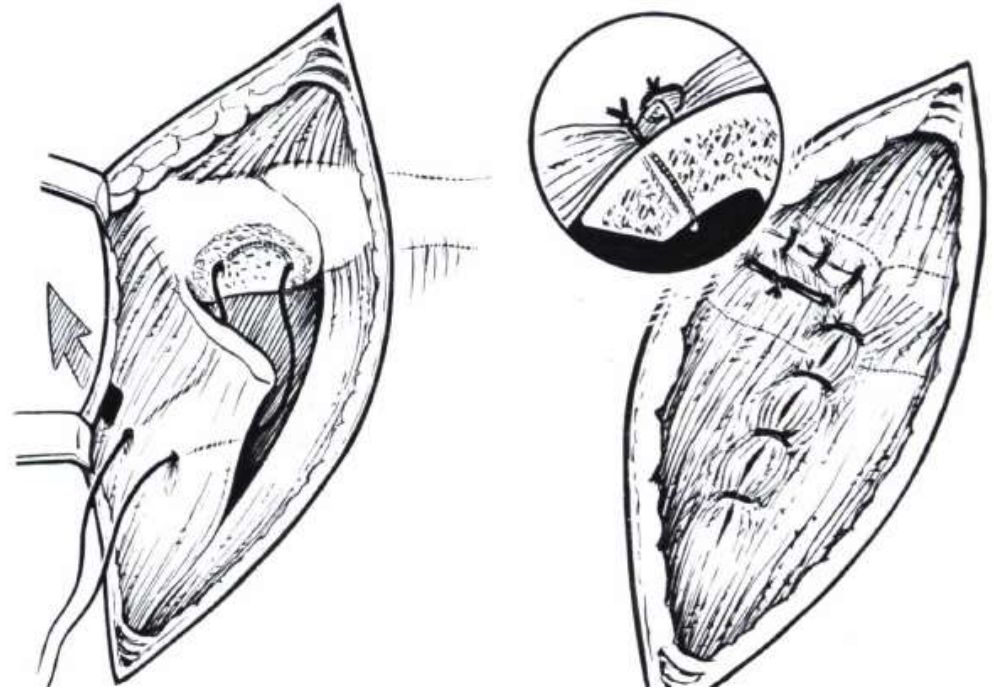
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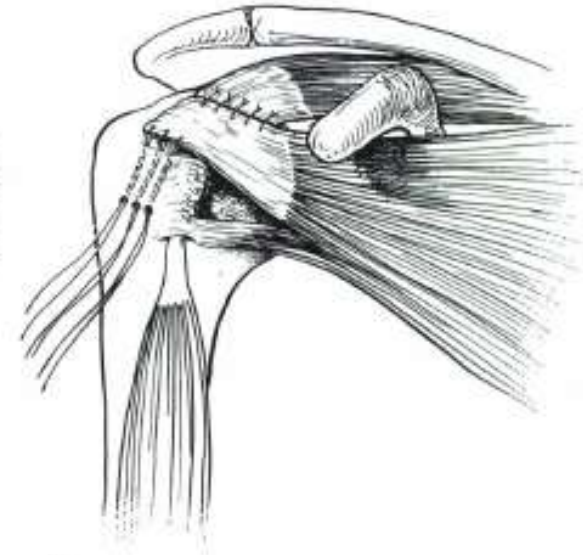
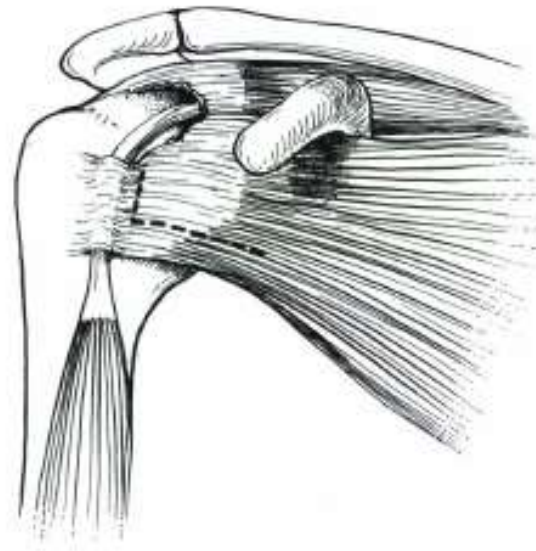
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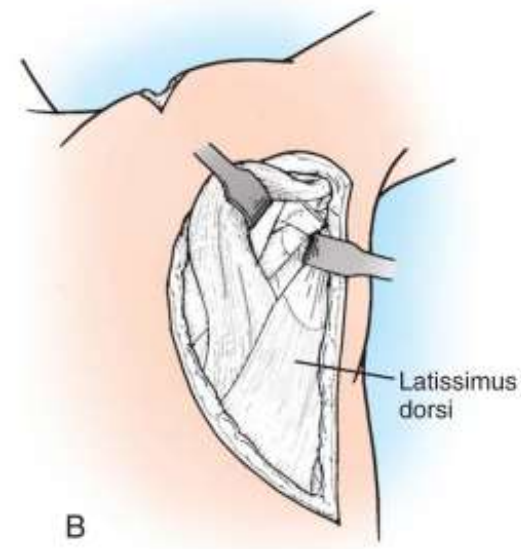
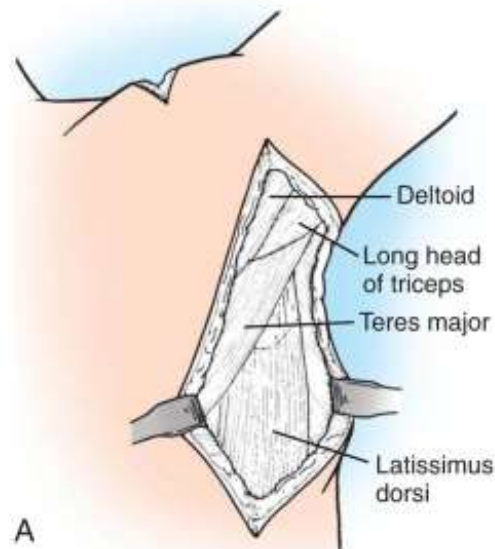
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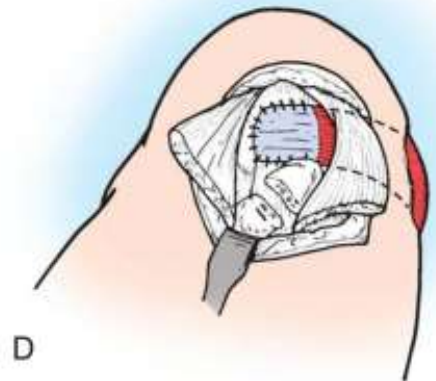
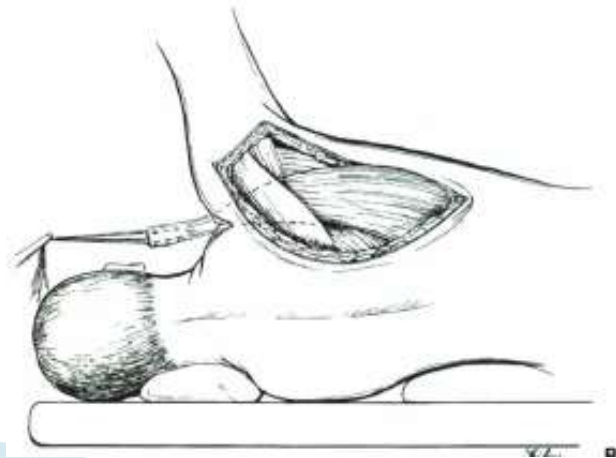
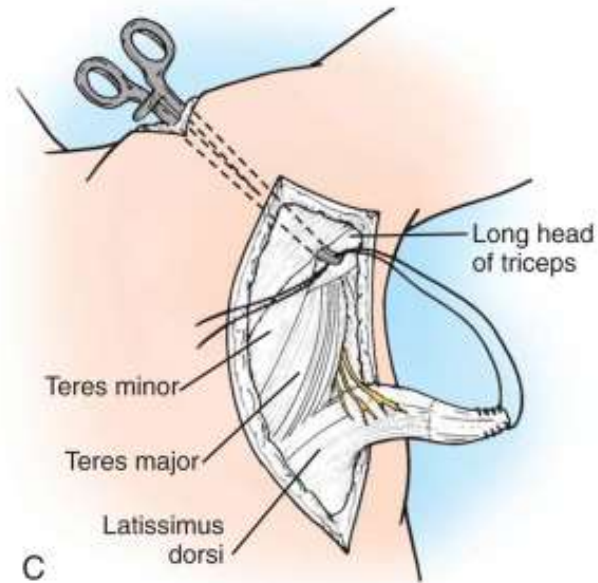
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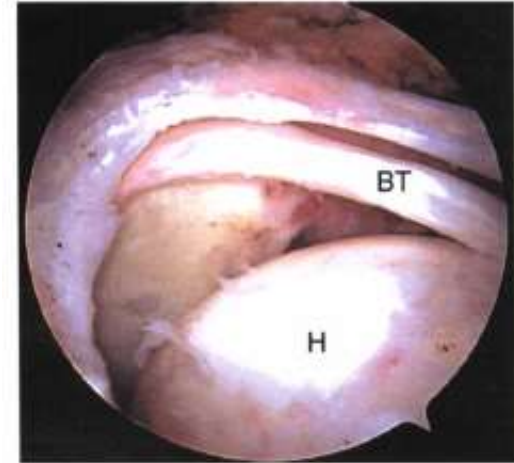
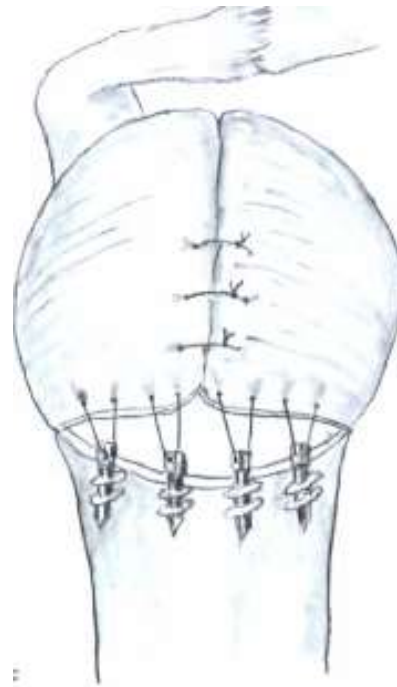
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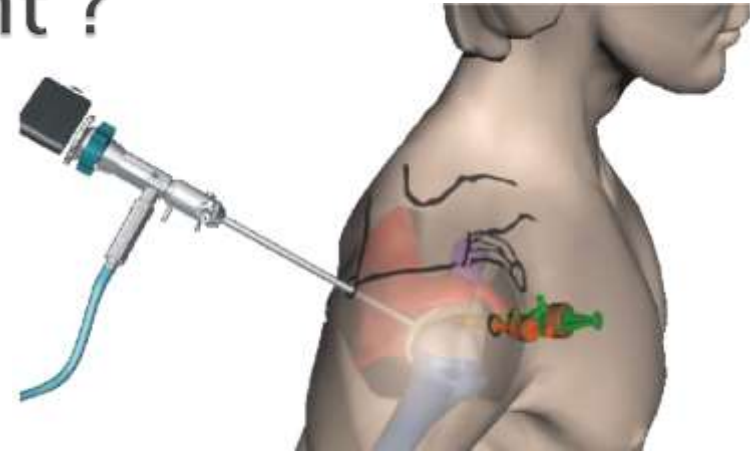


Treatment methods

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- ▶ Muscle transfer
 - Subscapularis
 - Latissimus dorsi
- ▶ **Arthroscopic**



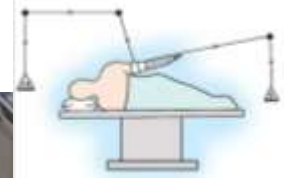
Why Arthroscopic treatment ?



- ▶ assessment of both articular and bursal surfaces of RC
- ▶ increases the surgeon's "window of visualization
- ▶ minimal disruption to the overlying deltoid

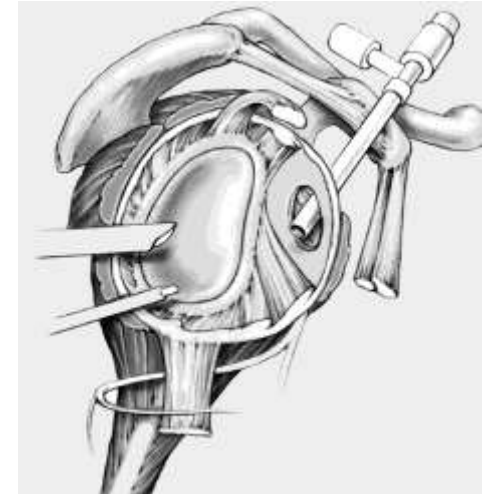
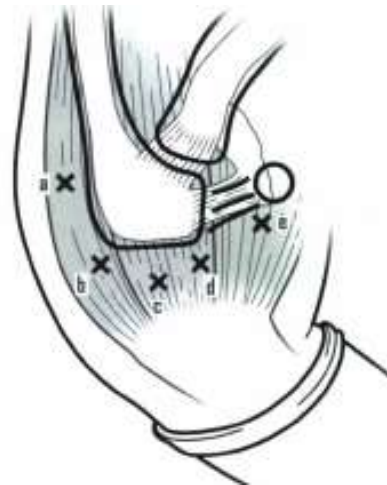
Arthroscopic treatment

- **Position**
- **Portals**
- **appropriate set up and equipments**



Arthroscopic treatment

- Position
- Portals
- appropriate set up and equipments



Arthroscopic treatment

- Position
- Portals
- appropriate set up and equipments



Arthroscopic treatment

- ▶ **Diagnostic arthroscopy (GH & Subacromial)**
- ▶ Assess tendon mobility & understand tear
- ▶ Rigid fixation to bone
- ▶ Acromioplasty



Arthroscopic treatment

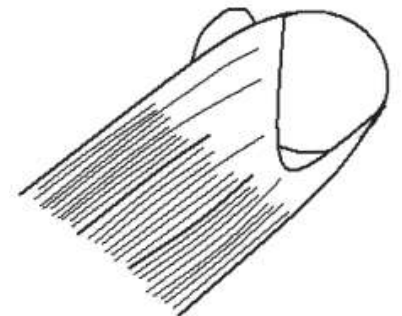
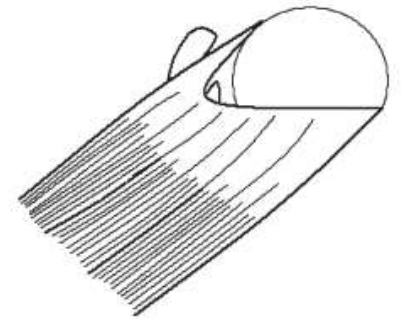
- ▶ Diagnostic arthroscopy (GH & Subacromial)
- ▶ **Assess tendon mobility & understand tear**
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Crescent-shaped



U-shaped

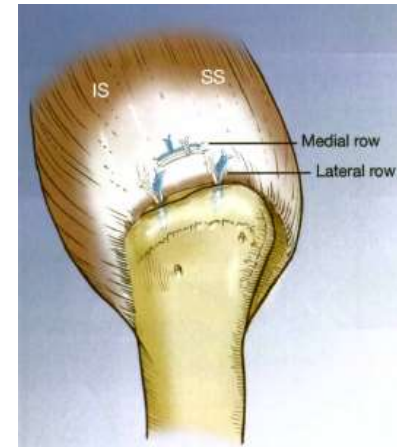
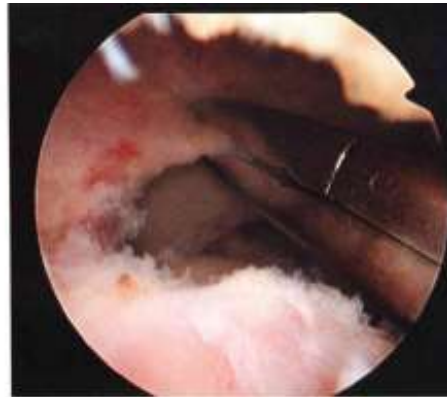


L-shaped
Reverse L-shaped

Massive, contracted, immobile tears

Arthroscopic treatment

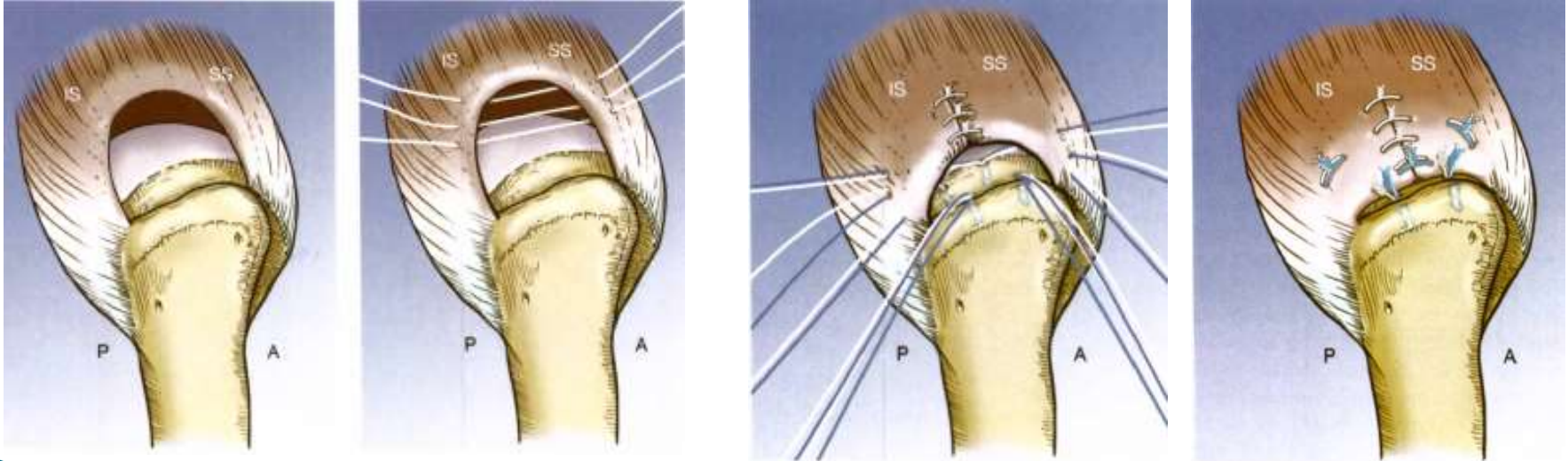
- ▶ Diagnostic arthroscopy (GH & Subacromial)
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- ▶ Rigid fixation to bone
- ▶ Acromioplasty



crescent-shaped rotator cuff tear

Arthroscopic treatment

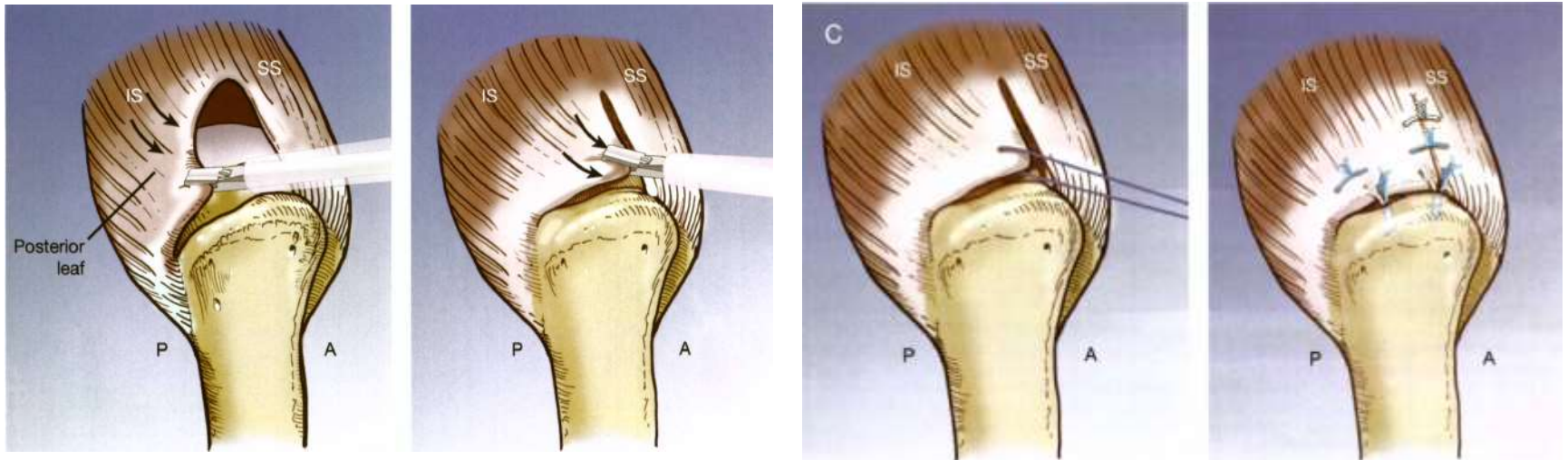
- ▶ Diagnostic arthroscopy (GH & Subacromial)
- ▶ **Assess tendon mobility & understand tear**
- ▶ Rigid fixation to bone
- ▶ Acromioplasty



U-shaped rotator cuff tear

Arthroscopic treatment

- ▶ Diagnostic arthroscopy (GH & Subacromial)
- ▶ **Assess tendon mobility & understand tear**
- ▶ Rigid fixation to bone
- ▶ Acromioplasty



L & reverse L -shaped rotator cuff tear

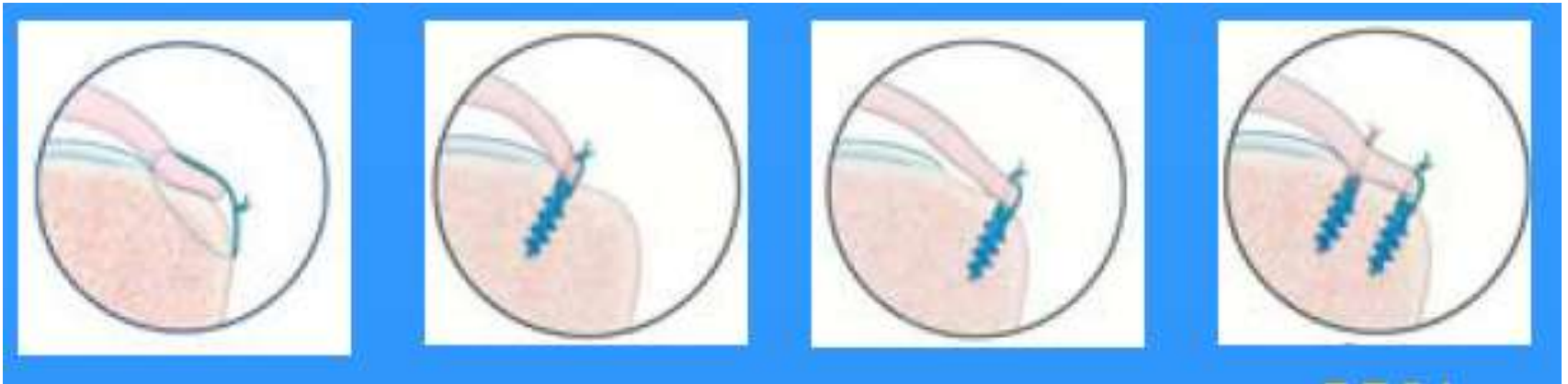
Arthroscopic treatment

- ▶ Diagnostic arthroscopy (GH & Subacromial)
- ▶ Assess tendon mobility & understand tear
- ▶ **Rigid fixation to bone**
- ▶ Acromioplasty



Arthroscopic treatment

- ▶ Diagnostic arthroscopy (GH & Subacromial)
- ▶ Assess tendon mobility & understand tear
- ▶ **Rigid fixation to bone**
- ▶ Acromioplasty



Single row or Double row ?

Arthroscopic treatment

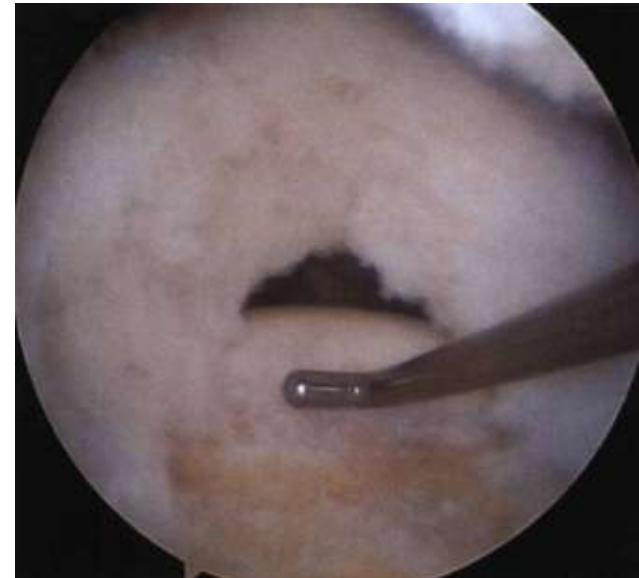
- ▶ Diagnostic arthroscopy (GH & Subacromial)
- ▶ Assess tendon mobility & understand tear
- ▶ Rigid fixation to bone
- ▶ **Acromioplasty**



Summary

Arthroscopic repair of RC tears

- ▶ results comparable to open repair
- ▶ The advantages :
 - better visualization of RC
 - Decreased deltoid morbidity
 - shorter hospital stay



Summary

Success in arthroscopic RC treatment depends on :

- Good visualization
- Good equipments
- knowing the pattern of tear
- The skill and experience of the surgeon



The result of bad arthroscopic RC tear is inferior to open repair

Thank you for attention