

# Entesopathy

Z. Rozkydal

# Entesopathy

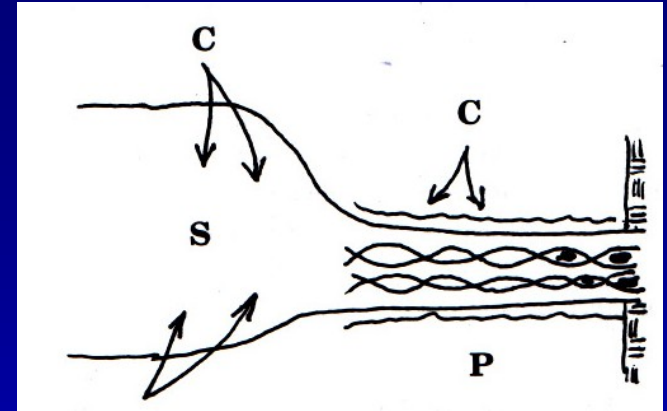
Pathological changes of insertions of tendons, ligaments and joint capsules into the bone

Dystrophia

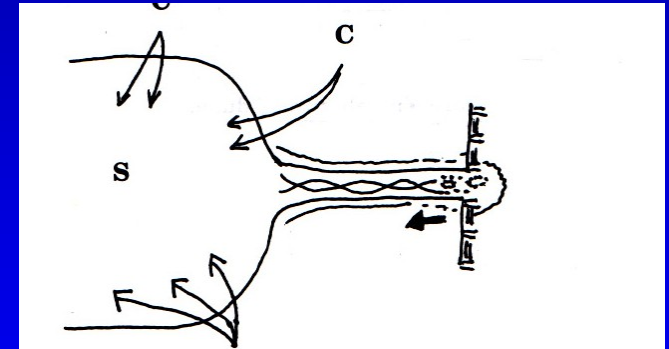
Microruptures of Sharpey's filaments

Periostitis

Ossifications, metaplasia



Normal insertion



Pathological insertion

Tendinopathy: disorders in tendons and tendon sheaths (tenosynovitis)

# Causes

Acute and chronic overloading

Microtraumatisation

Repetitive movements and activities

# Tennis elbow

## Epicondylitis radialis humeri

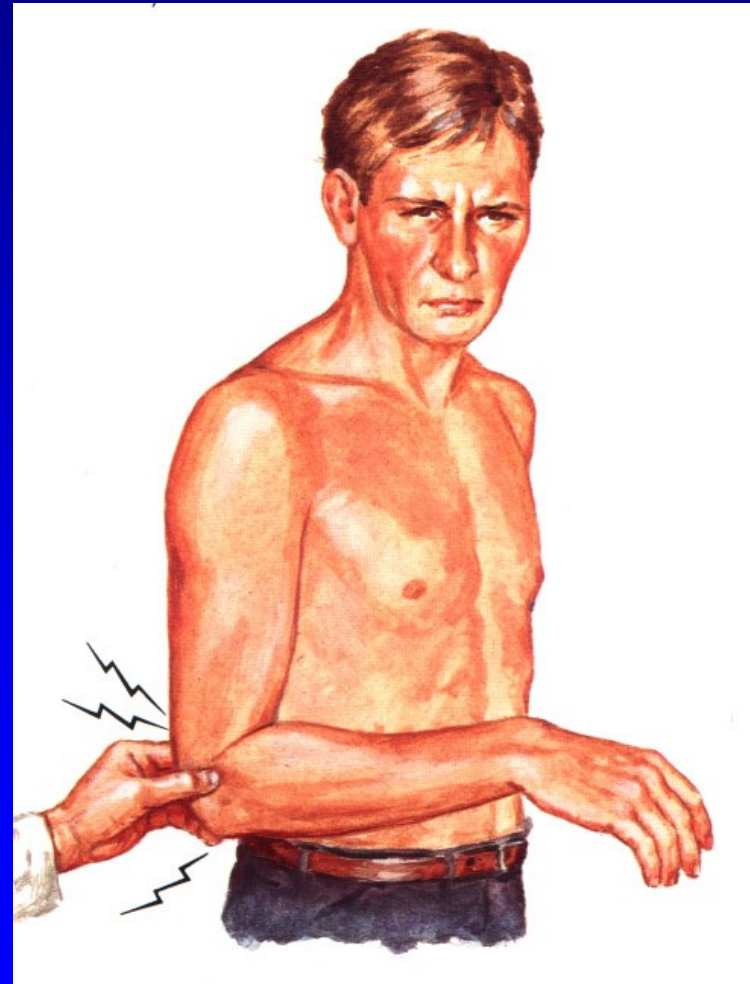
Pain with activity of extensors

Tenderness

Painful supination

Painful resisted dorsiflexion of the wrist  
and of the third finger

Chair test



# Tennis elbow- the causes

Entesopathy

Bursitis

Ossifications of insertion of extensors

Painful annular ligament

Painful synovial plica

Osteochondrosis dissecans

Pressure of radial nerve

Referred pain from cervical spine and shoulder

# Tennis elbow- conservative treatment

Rest, to avoid repetitive movements

NSAID- locally (Voltaren gel, Fastum gel ...)

Corticosteroids locally (depo Medrol injection...)

NSAID – orally

Orthesis, sling

Physiotherapy ( ultrasound, laser  
PIR, magnetotherapy)

Whirlpool, stretching

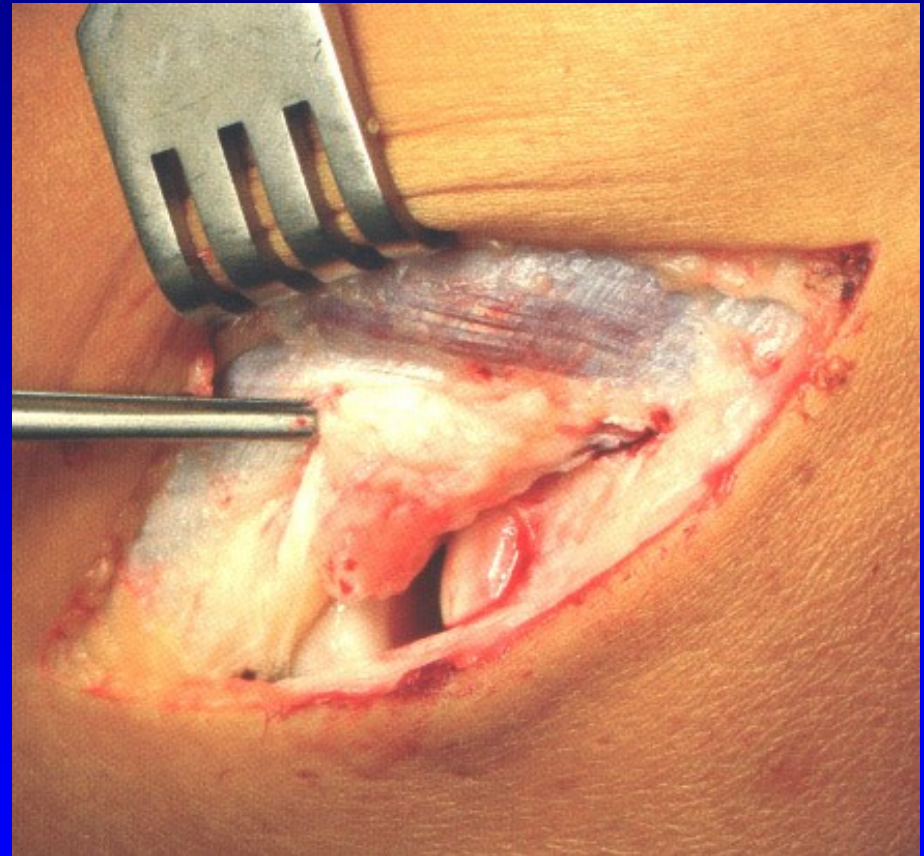
Immobilisation

# Tennis elbow- operative treatment

Exceptionally:  
disinsertion of extensor  
attachment to to the bone  
+ it's distalisation

Op. sec. Hohman

Op. sec. Boyd- McLeod



# Golf elbow - Epicondylitis ulnaris humeri

Entesopathy of insertions of flexors  
on the ulnar epicondyle

Pain, tenderness

Resisted movements

Treatment:  
Conservative

Operative  
Distalisation of flexor's insertion





# Bursitis of olecranon

Swelling and fluid in the bursa  
Tenderness

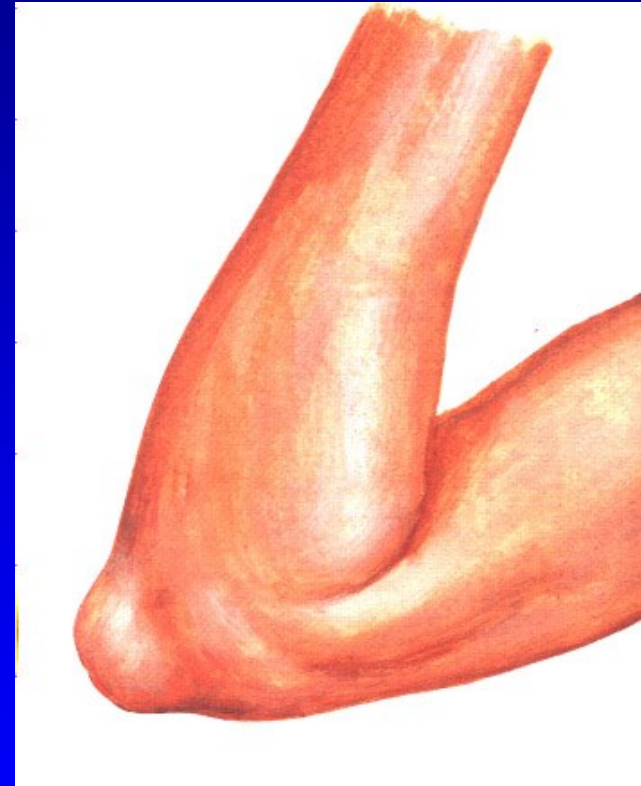
Treatment:

Aspiration, corticosteroids locally

Bandage

Rest

Risk of pyogenic inflammation



# M. de Quervain

Stenosing tenosynovitis of  
long abductor and short extensor  
of the thumb

Tenderness over styloid process  
Finkelstein test

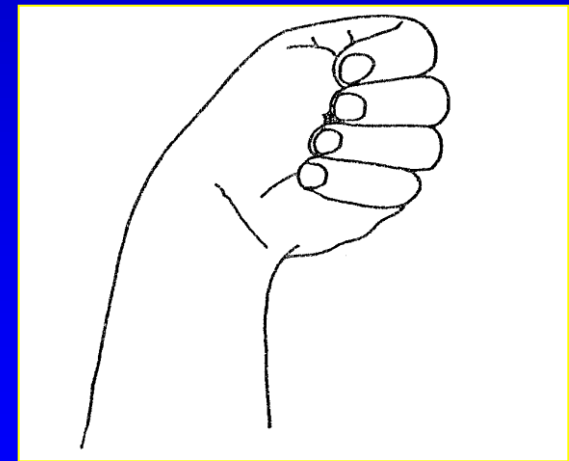
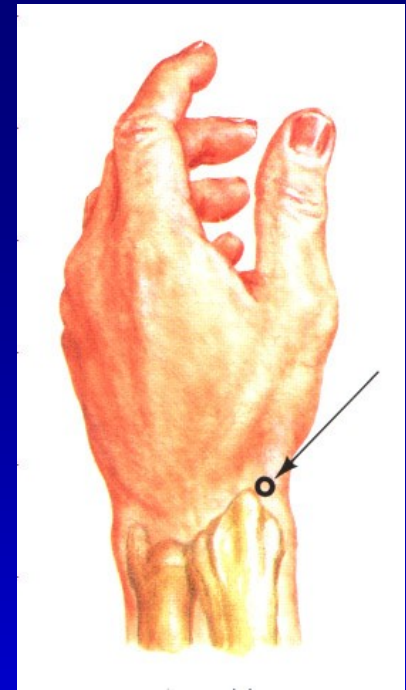
Treatment

Local corticosteroids

Rest, orthosis

NSAID locally

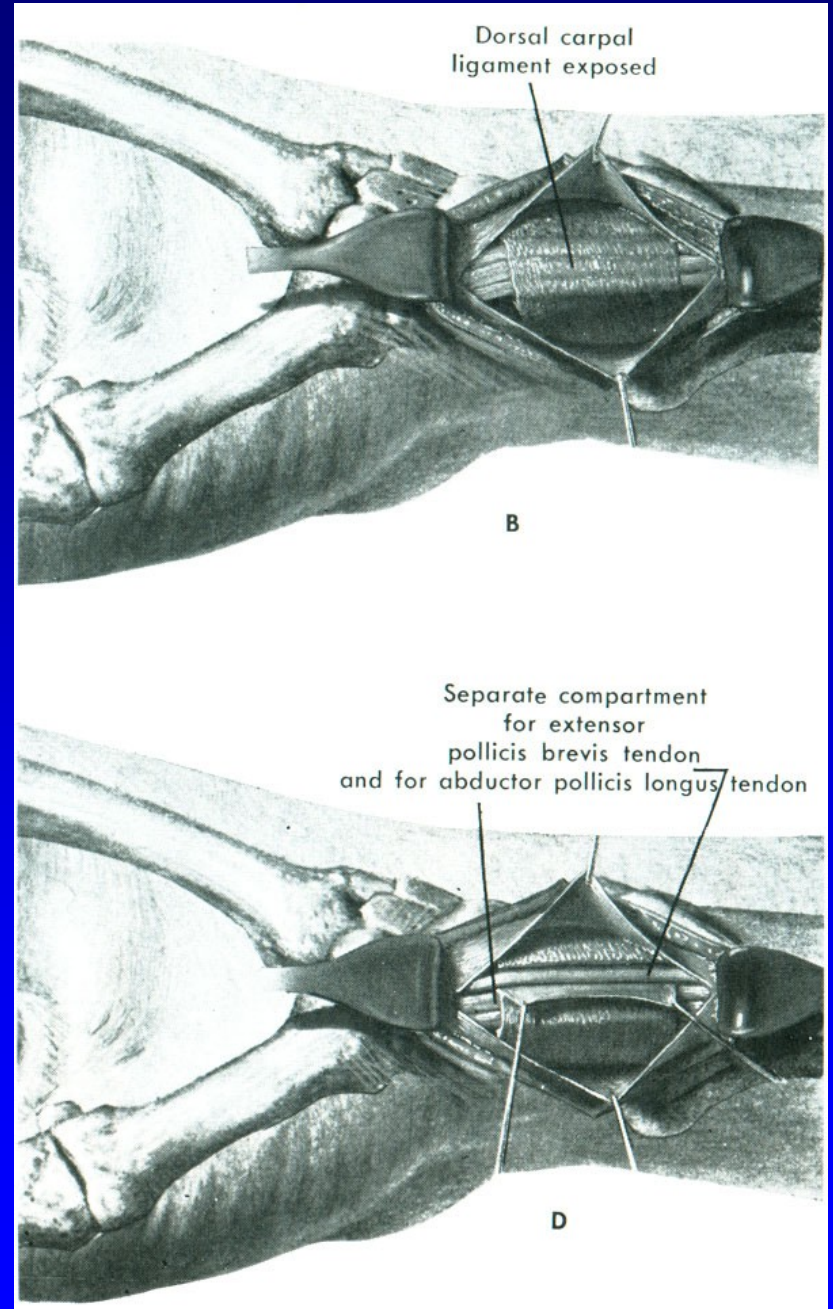
Surgery



Finkelstein test

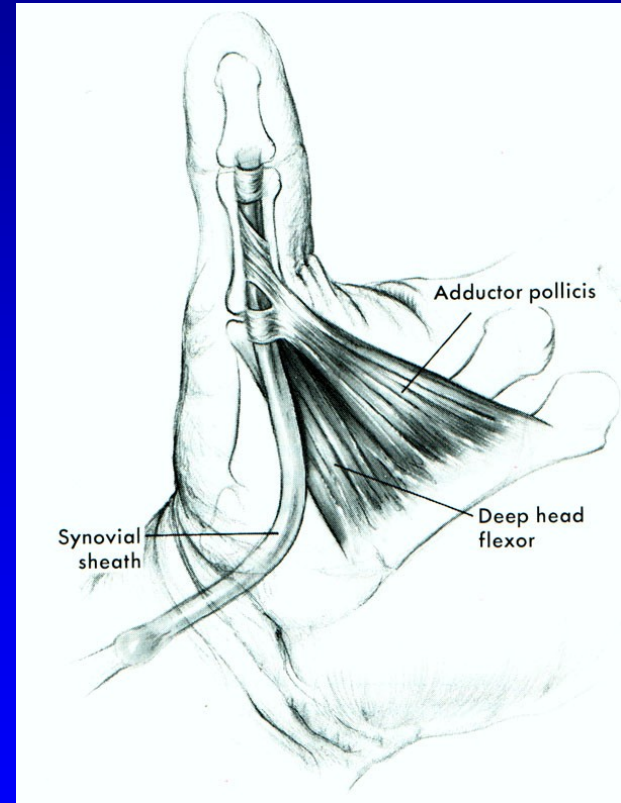
# M. de Quervain

## Dissection of the tendon sheat



# Trigger thumb - pollex saltans

- Snapping of the thumb
- In childhood, in adults
- Narrowing of flexor sheath
- Enlargement of the tendon



## Therapy:

Rest

Local corticosteroids

Orthosis

NSAID ointments

Surgery- releasing of tendon sheath

# Trigger finger- digitus saltans



**Th:** , NSA ointments, local cortisteroids, rest, surgery

# Differential diagnosis

Carpal tunnel syndrom

Guyon canal syndrom

# Carpal tunnel syndrom

Compression neuropathy of median nerve

Pain, diminished muscle power

Hypotrophy of thenar muscles

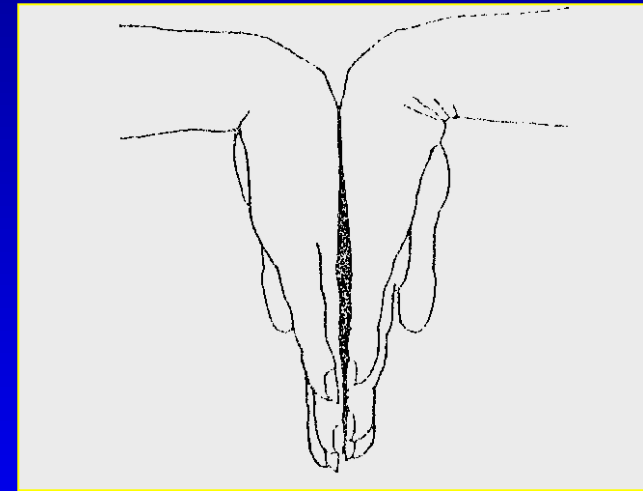
Paresthesia and numbness (thumb, 2-3. finger

Limited function of fingers

Tenderness

Tinnel sign

Phalen test



Phalen test

# Carpal tunnel syndrom

Therapy

Conservative

Surgery





# Guyon canal syndrom

Compression neuropathy of ulnar nerve  
in hand

Paresthesia and numbness on  
ulnar side

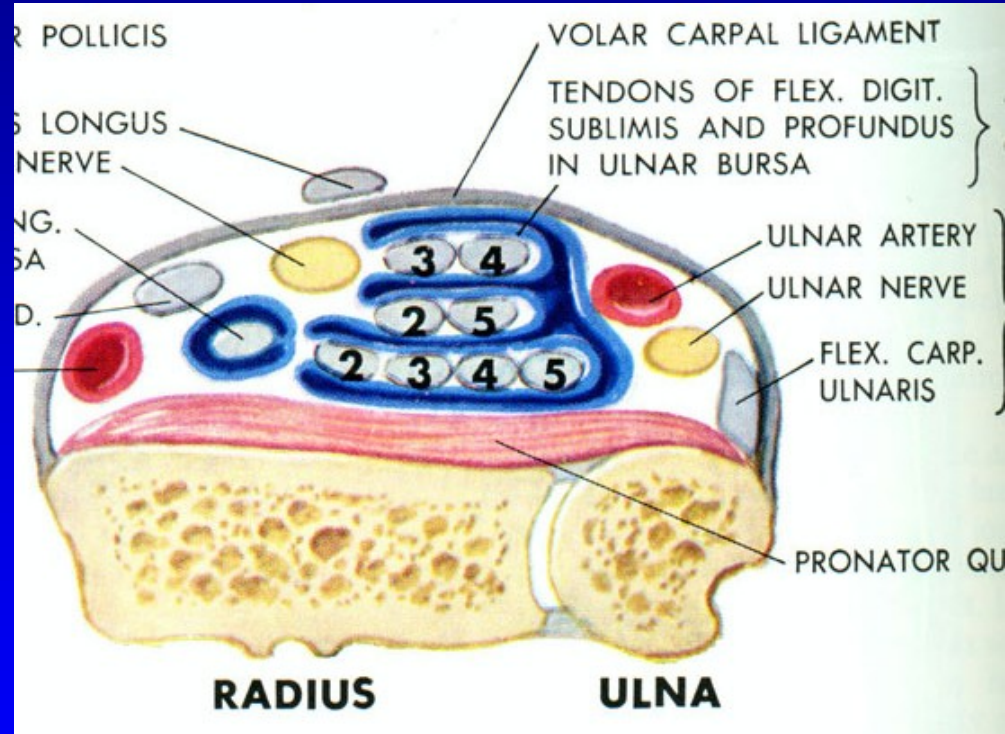
Hypotrophy of hypothenar

Limited function of 4., 5. finger

**Therapy**

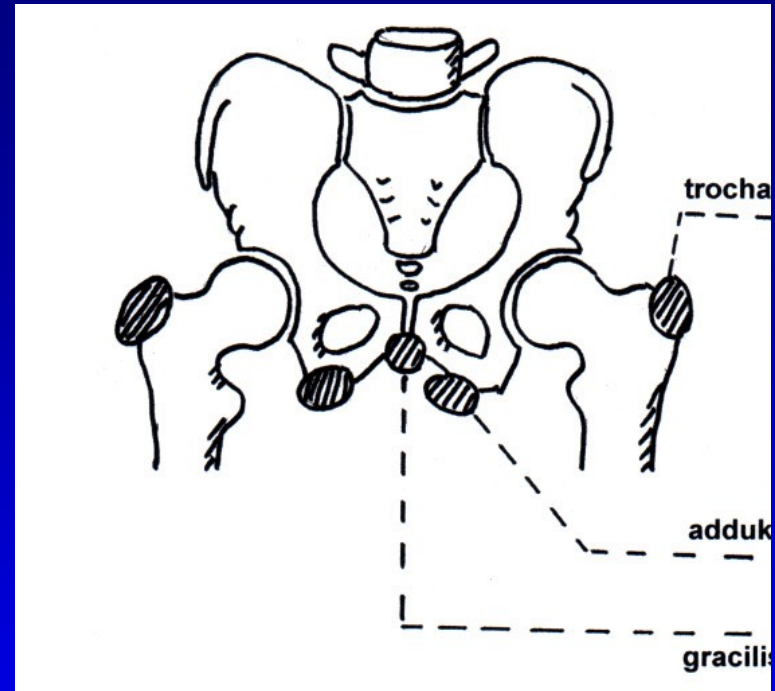
**Conservative**

**Surgery**

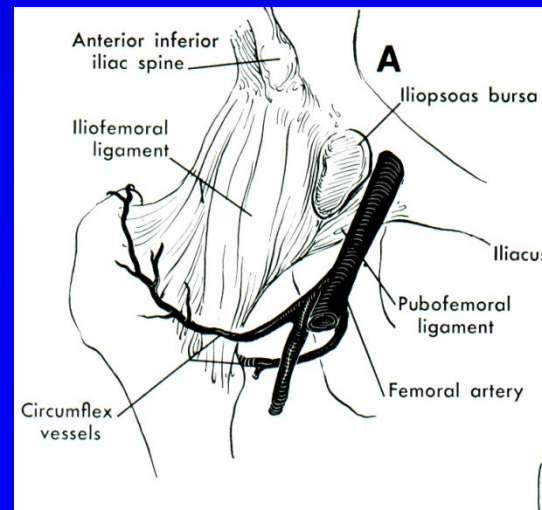


# Bursitis and entesopathies in the hip region

Greater trochanter- abductors  
Ischial tubercle- hamstrings  
Adductor entesopathy  
Bursa ileopectinea  
Spina iliaca ant. sup.  
Spina iliaca ant. inf.  
Iliopsoas – lesser trochanter  
Painful groin- gracilis syndrom



Therapy:  
Conservative  
Surgery



# Snapping hip

Snapping sensation over greater trochanter  
or popping sound in the hip during walking, getting up from a chair

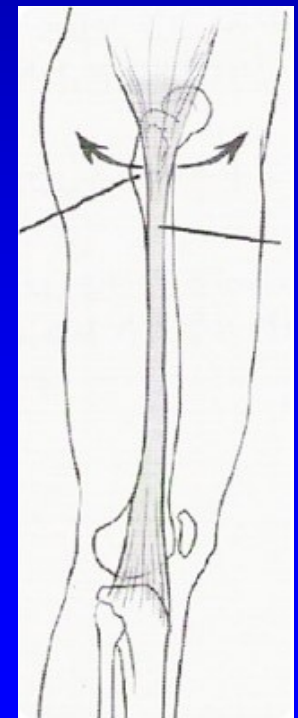
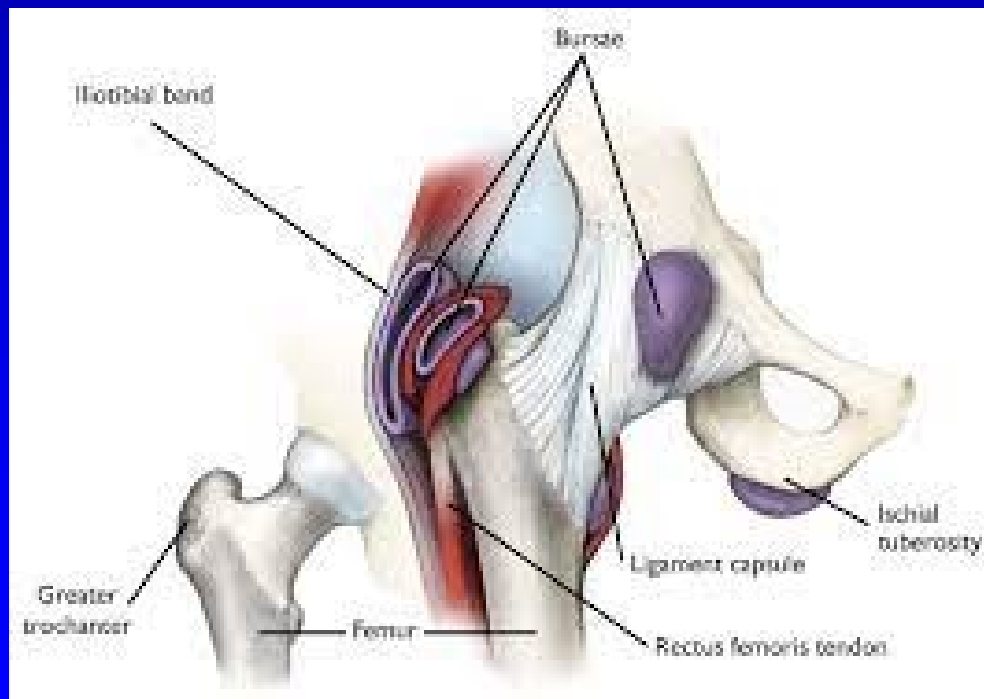
Causes:

Tendons move over a bony protrusion (overlapping)

Thickening of tensor fascia lata

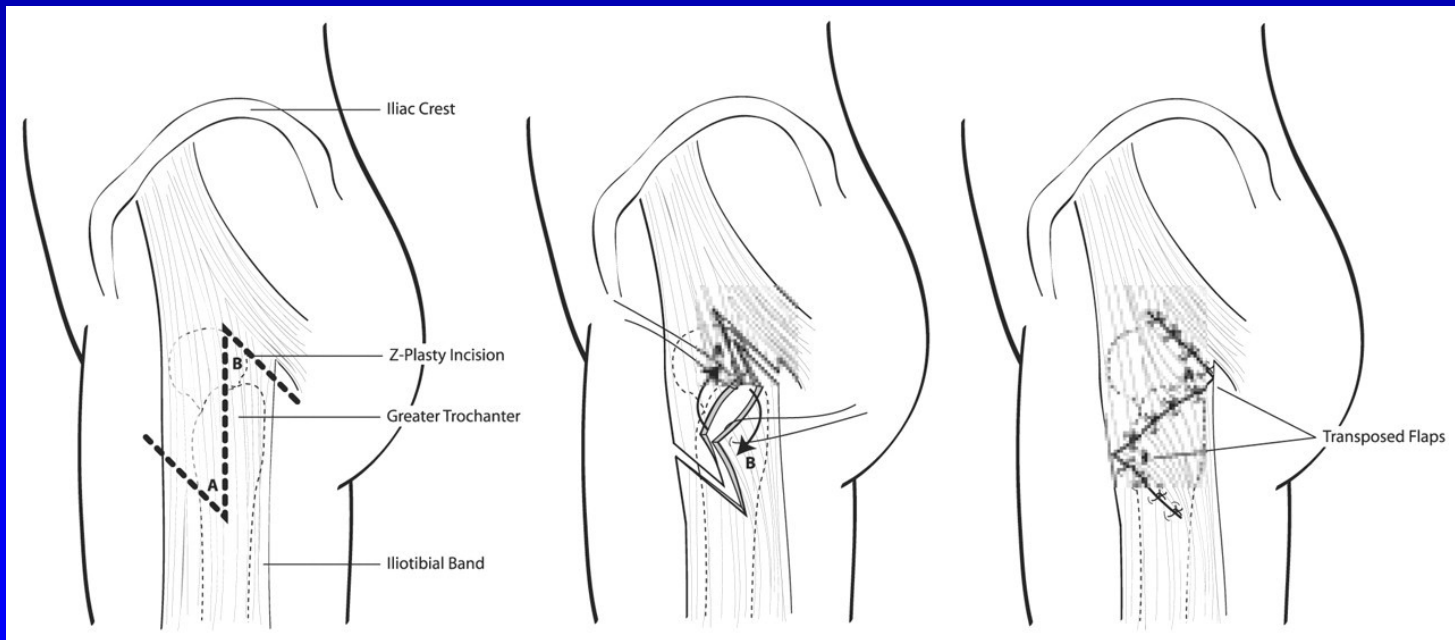
Therapy:

Conservative  
Surgery



# Snapping hip- surgery

## Surgery: Z- plasty



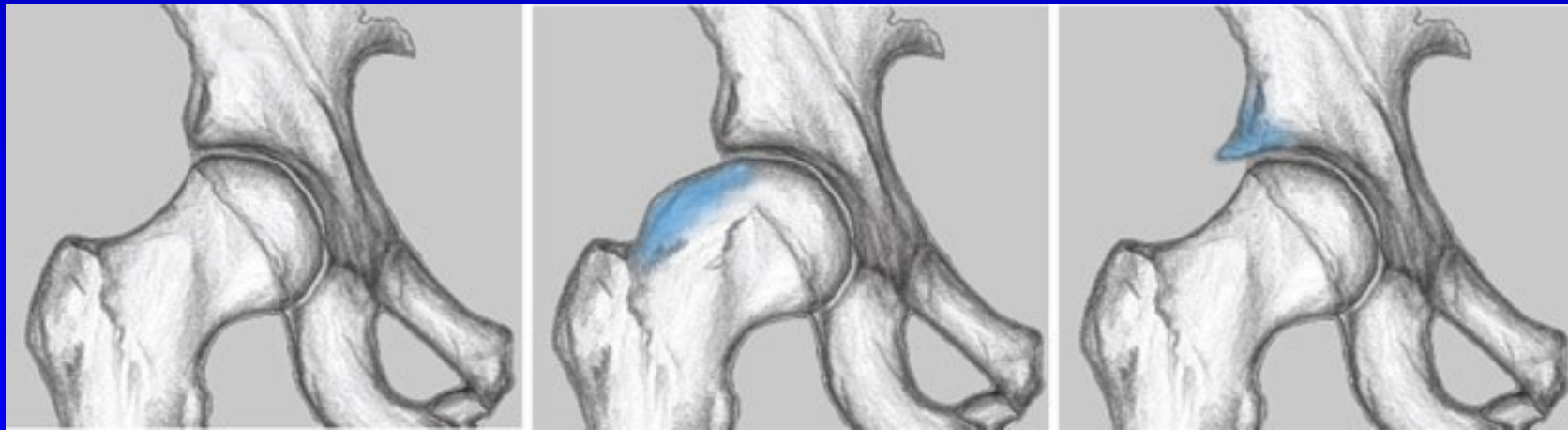
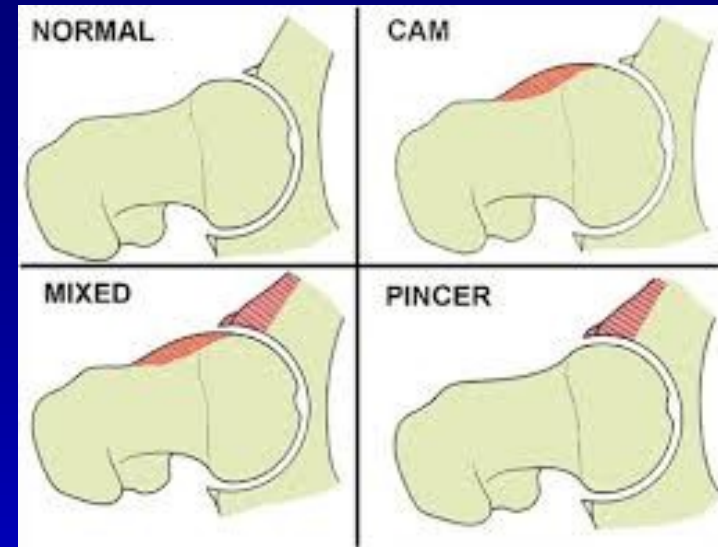
# Femoroacetabular impingement

## FAI

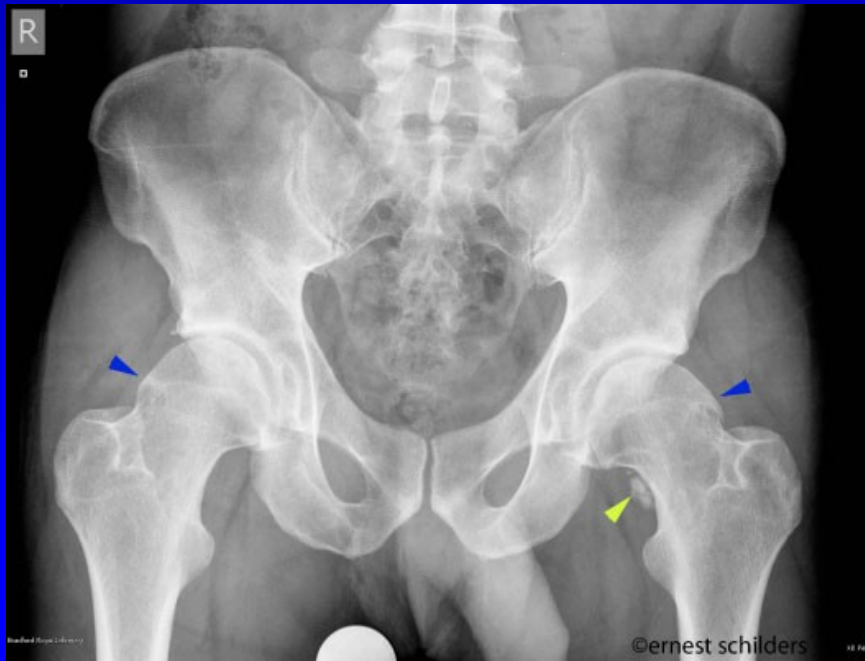
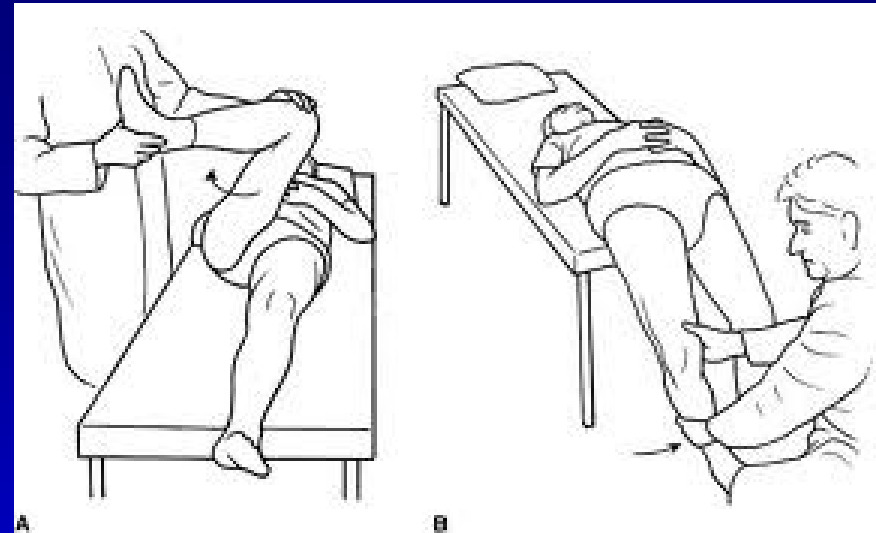
- Pathological contact between femoral head and the acetabulum
- Changes of the shape and orientation of the acetabulum and the femoral head
- Damage to the labrum and cartilage
- Limited movements, pain, progression into O.A

# Classification

- CAM type – femur
- PINCER type – acetabulum



- Tests
- Imaging methods  
X ray, CT, MRI



# Entesopathies in knee region

## Jumper's knee

- distal pole of the patella

m. Osgood- Schlatter

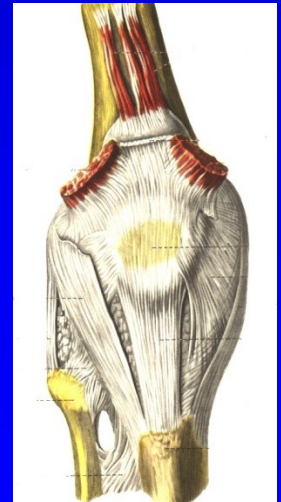


Entesopathy in ligaments insertion

- medial, lateral epicondyle

Pes anserinus entesopathy

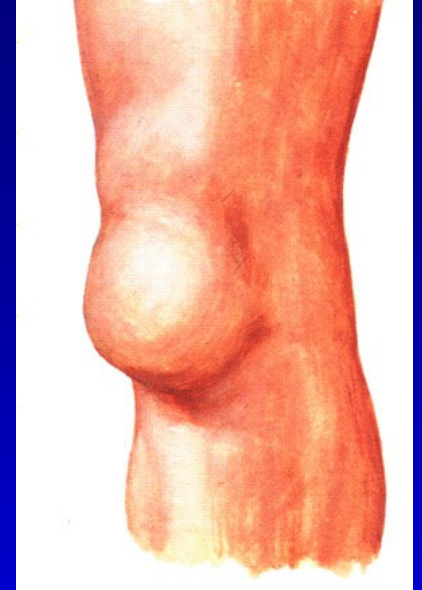
Entesopathy at Gerdy's tubercle



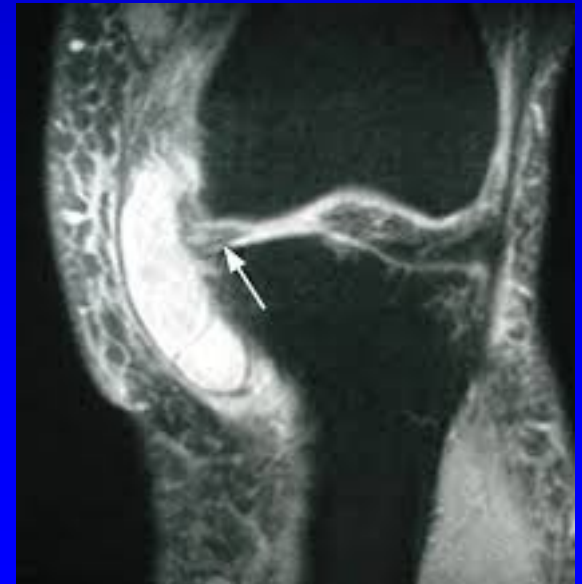


# Bursitis in the knee region

Prepatellar bursitis  
Infrapatellar bursitis  
Bursitis of pes anserinus  
Ganglion of the meniscus



Therapy:  
Rest, aspiration, corticoids  
NSAID, surgery



# Baker's cyst

Bursa gastrocnemio- semimembranacea  
is connected with joint space  
Swelling, soft mass in popliteal region  
Limited movements  
Pressure onto large veins in  
popliteal region.



Secondary to pathology in the knee joint

Therapy:

Conservative – aspiration, local corticoids,  
NSAID

Arthroscopy of the knee-

- meniscus, chondropathy, osteoarthritis

Baker's cyst disappears spontaneously

Removal of the bursa- exceptionally



# Bursitis and entesopathies in the foot

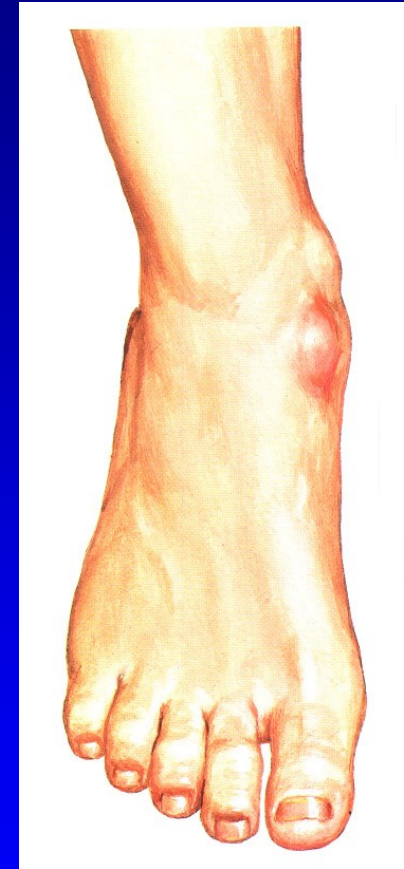
Achilles tendinitis

Calcaneal spur

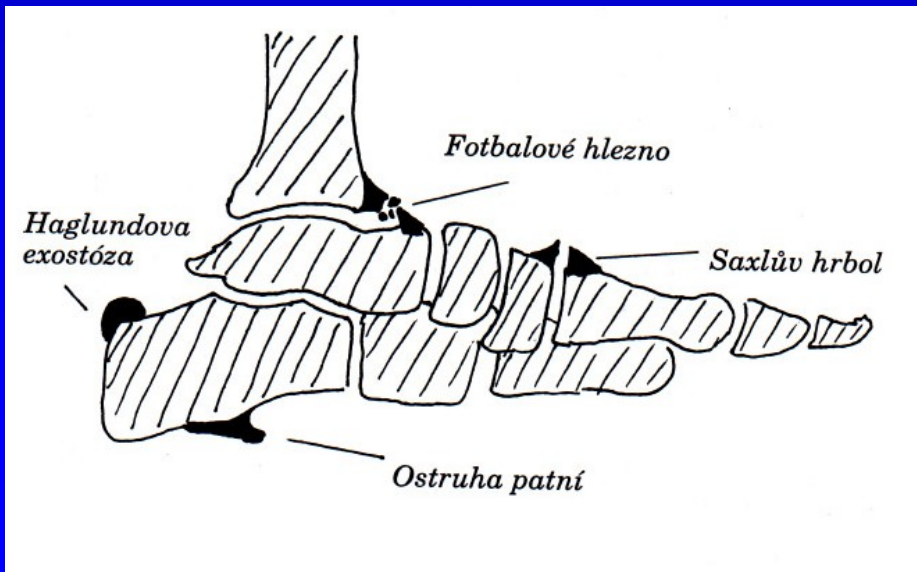
Haglund's exostosis

Osteophytes – dorsal

Os tibiale externum

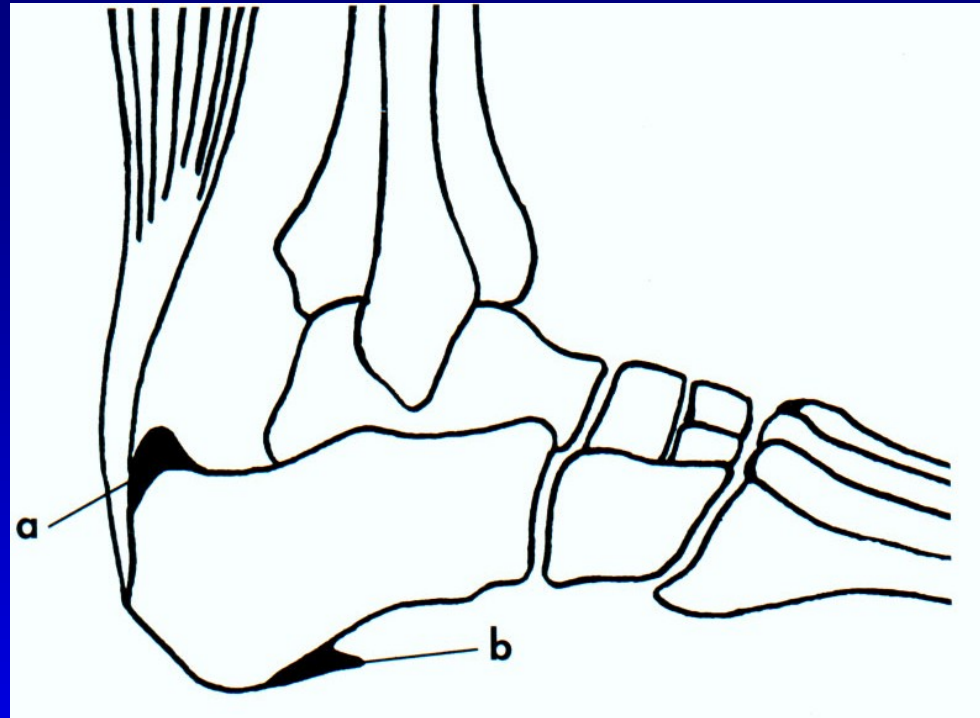


Os tibiale externum



# Calcaneal spur

Dorsal exostosis



Calcaneal spur

Therapy:

Soft padding, NSA ointments, corticosteroids locally,

Physiotherapy- magnetotherapy, ultrasound, laser, shock wave therapy,  
radiocobalt beams 4 Gy, arthroscopic removal

# Achilles tendinopathy

Painful Achilles tendon  
at midportion and it's insertion

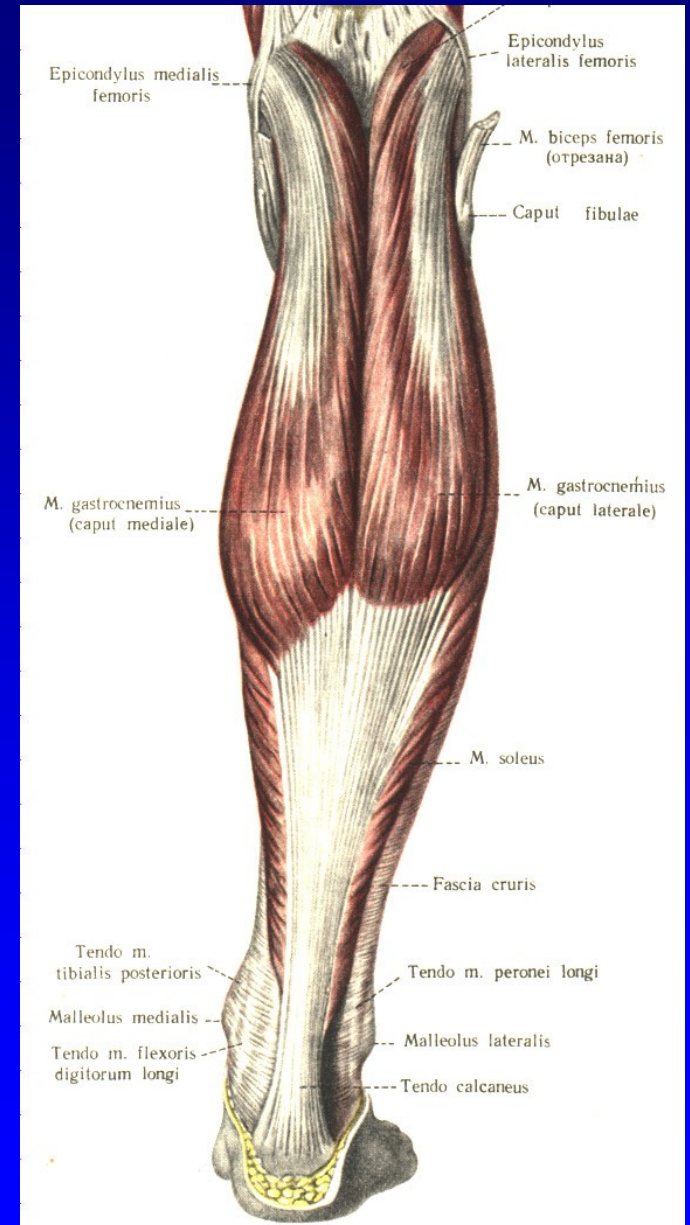
Thickening and pain

Degeneration

Haemorrhage, ruptures

Peritenonitis

The risk of rupture



# Achilles tendinopathy

## Conservative treatment

Rest, taping, NSAID

Physiotherapy:

Magnetotherapy

Ultrasound

Laser

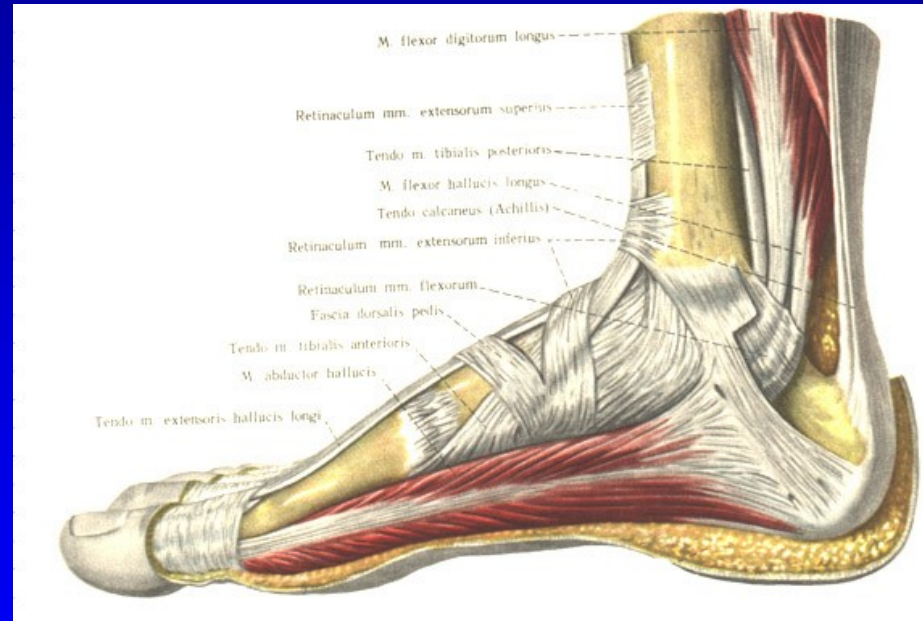
Hiltherapy

Orthosis- soft, rigid

Hyaluronic acid inj.(Hyalotend  
Sportvis)

Collagen - GUNA inj.

No corticosteroids-risk of rupture

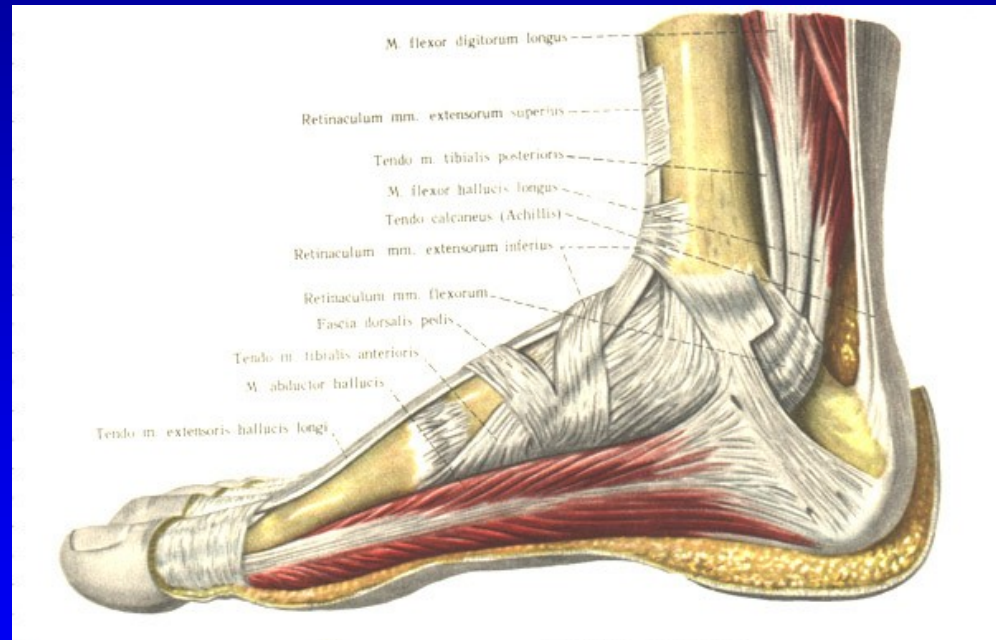


# Achilles tendinopathy

Surgery:

Peritenonectomy

Excision of necrotic tissue



# Entesopathy at the spine

Painful insertions of ligaments  
and tendons

Transverse or spinal processes

Scapula

Pelvis





# Entesopathies and tendinopathies in the shoulder region

Tenosynovitis of tendon of long head of biceps

Rupture of tendon of long head of biceps

Subacromial bursitis

Supraspinatus tendinitis

Rotator cuff tear

# Tenosynovitis of long head of biceps

Tenderness

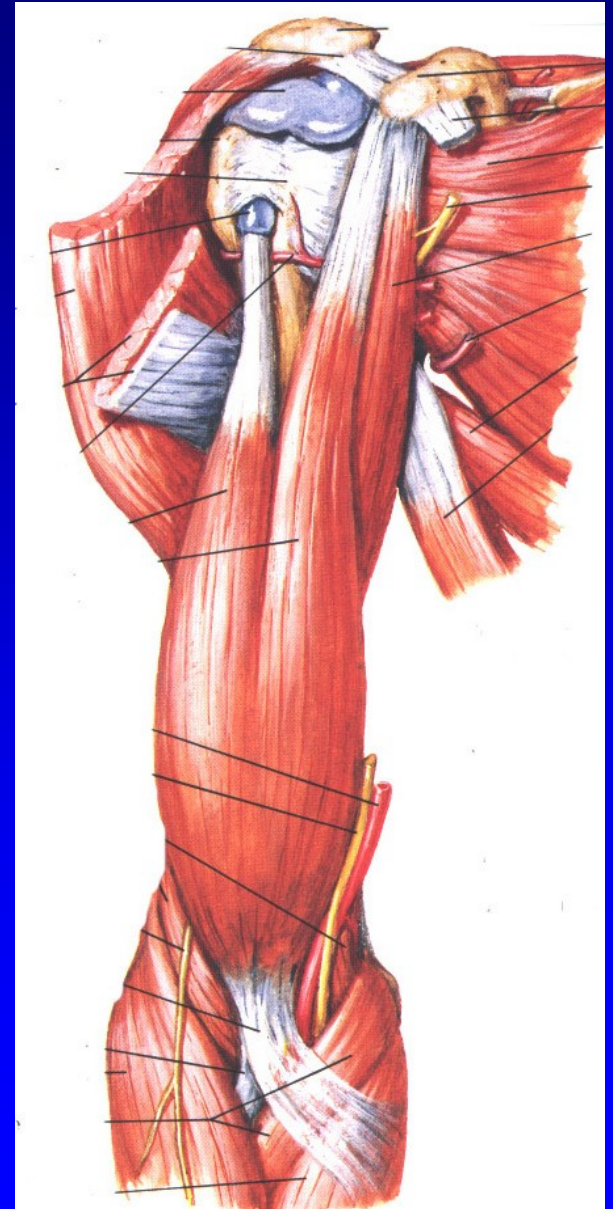
Resisted flexion and supination  
of the elbow

Therapy:

Corticosteroids locally

Rest, sling

NSAID

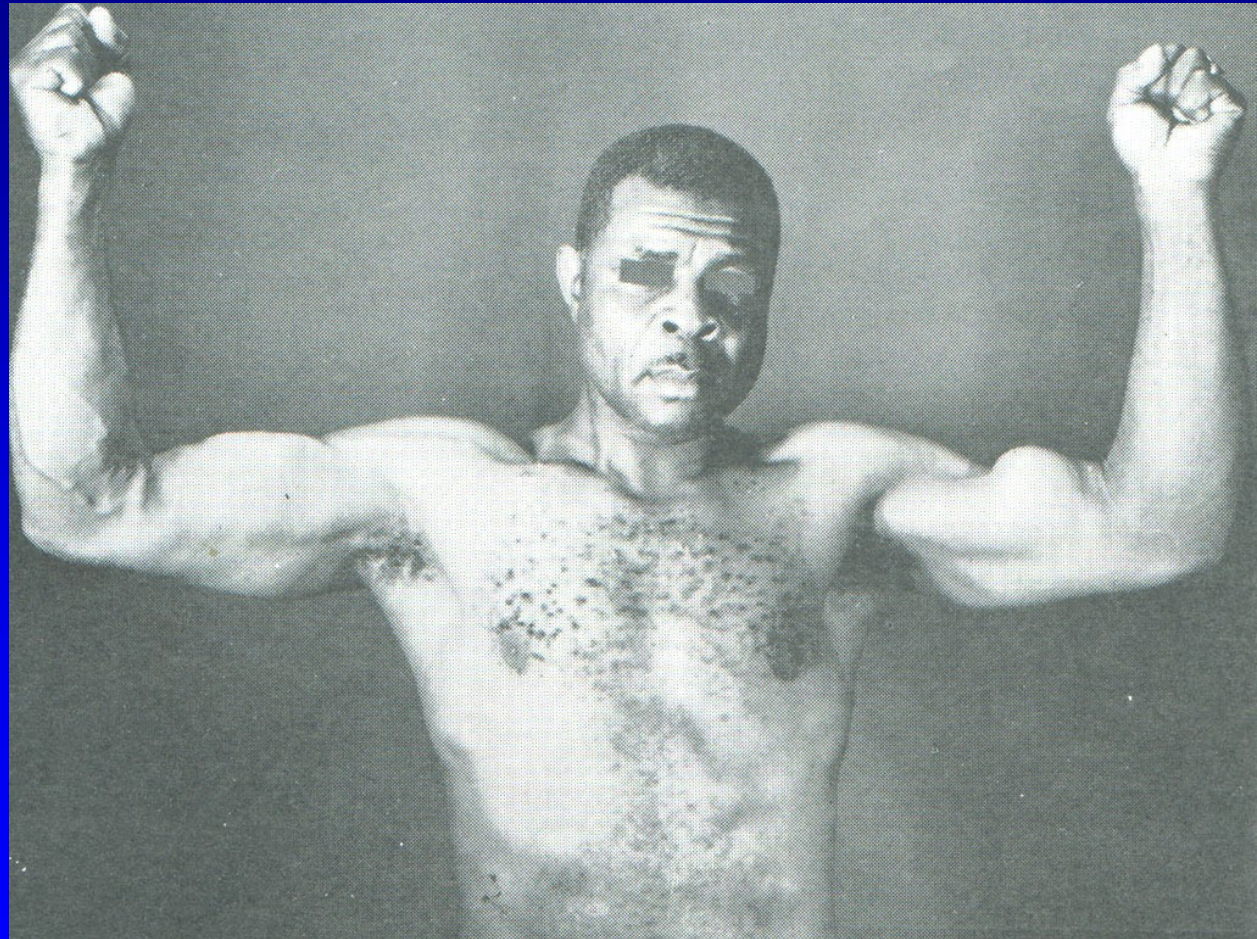


# Rupture of long head of biceps

Tenderness

Distalisation of  
muscle belly

Diminished strength



# Rupture of long head of biceps

Therapy:

Rest, sling

NSAID

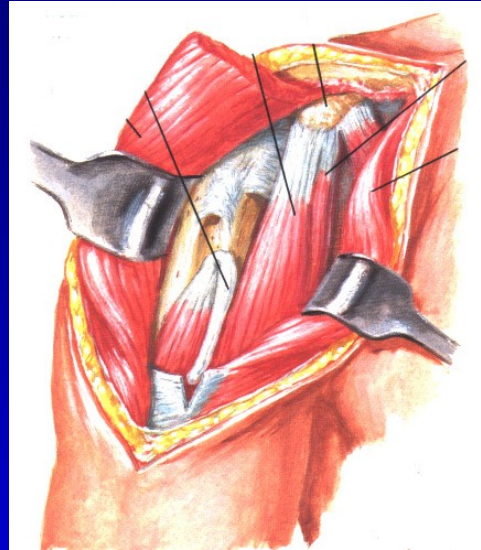
Surgery – up to 40 years

Conservative- over 40 years

Surgery:

Subpectoral tenodesis

Suture to the short head of biceps



Subpectoral tenodesis

# Subacromialis bursitis

Inflammation

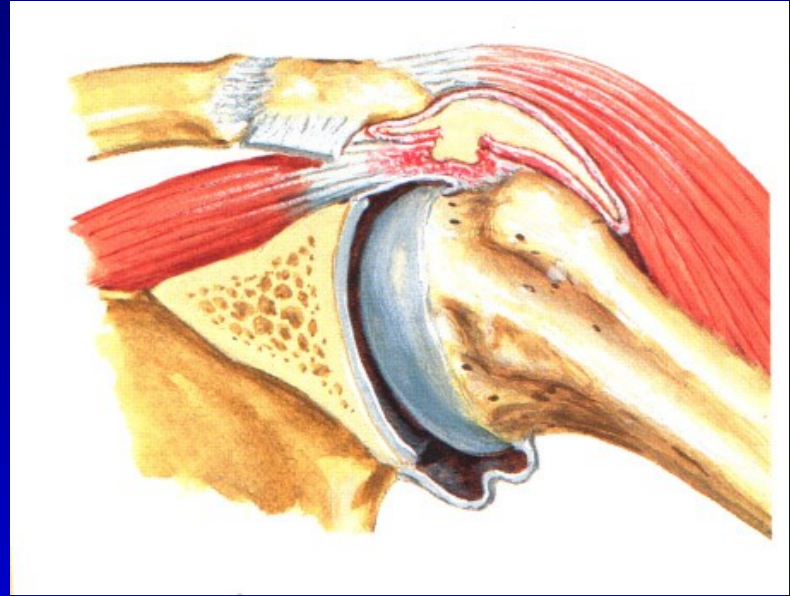
White fluid

Severe, burning pain

Restricted movements

Tenderness

Calcifications



# Subacromial bursitis

Conservative treatment:

Rest, sling

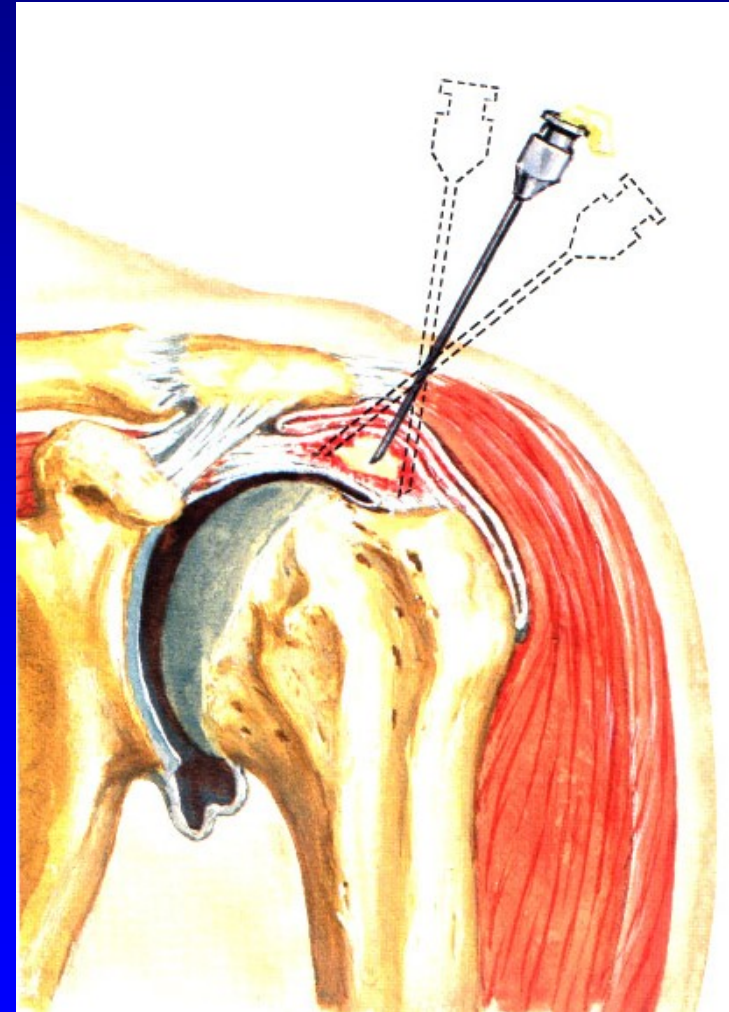
Corticosteroids locally

NSAID

Later- physiotherapy

Surgery:

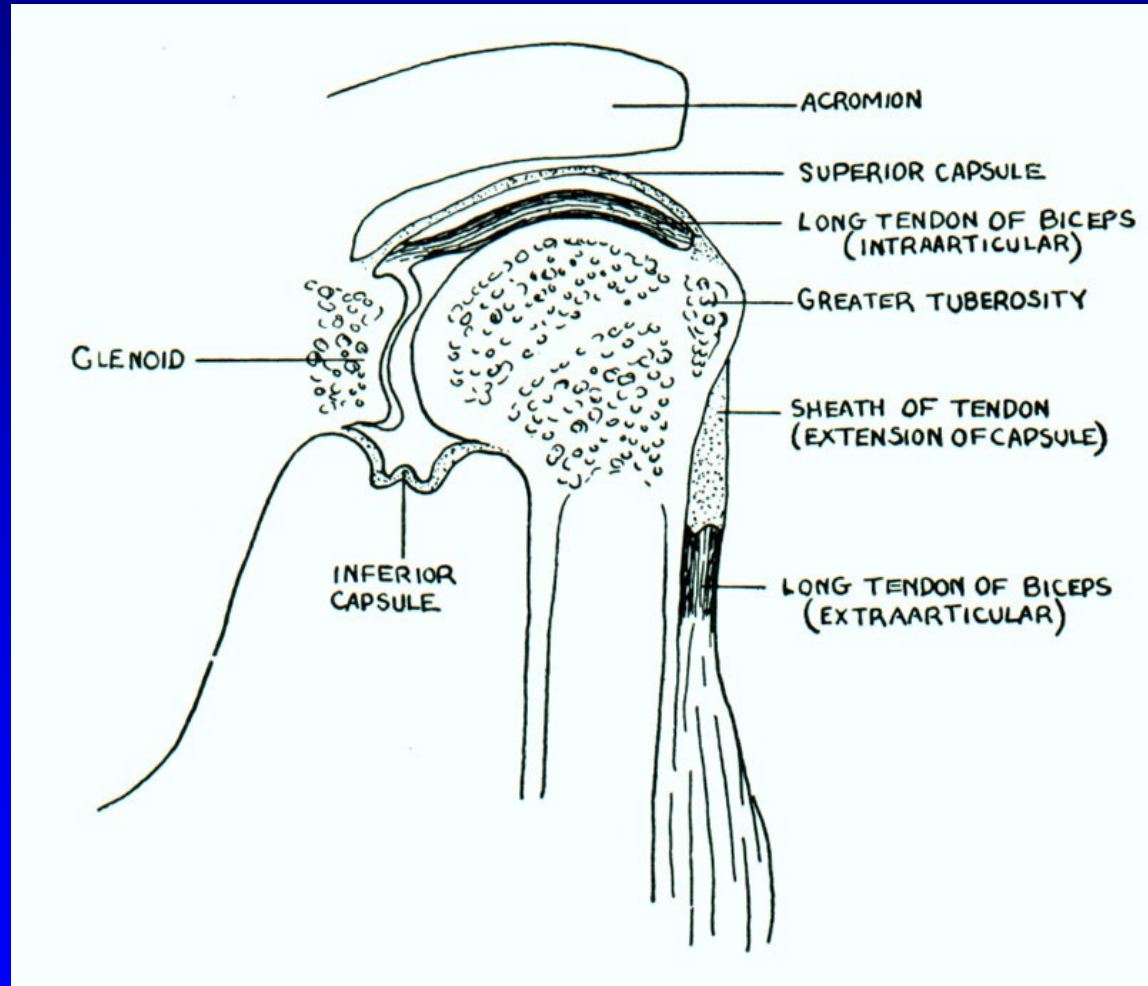
Arthroscopy- removal of bursa



# Supraspinatus tendinitis

Tenderness over greater tuberosity  
Limited movements

Therapy:  
Rest, NSAID  
Corticosteroids  
Physiotherapy



# Rotator cuff

Rotator cuff:

m. supraspinatus

m. infraspinatus

m. teres minor

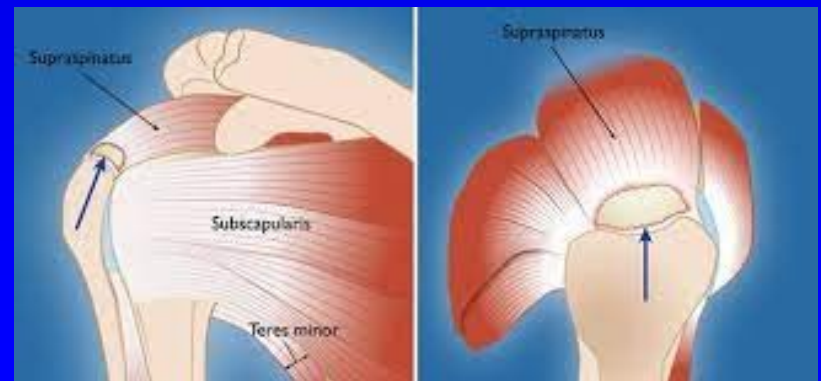
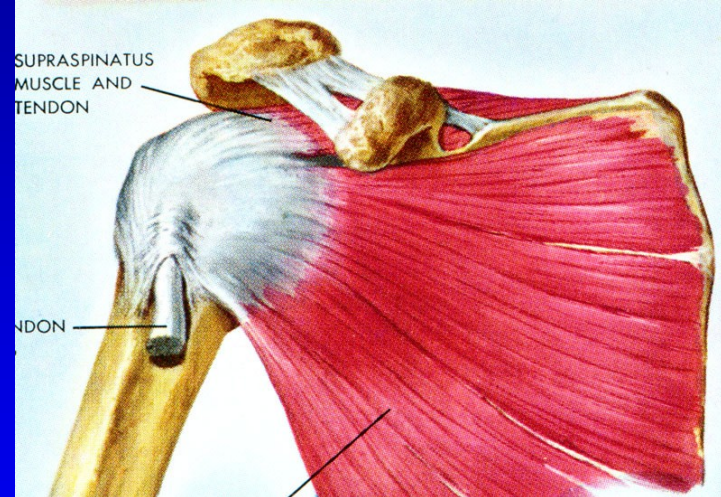
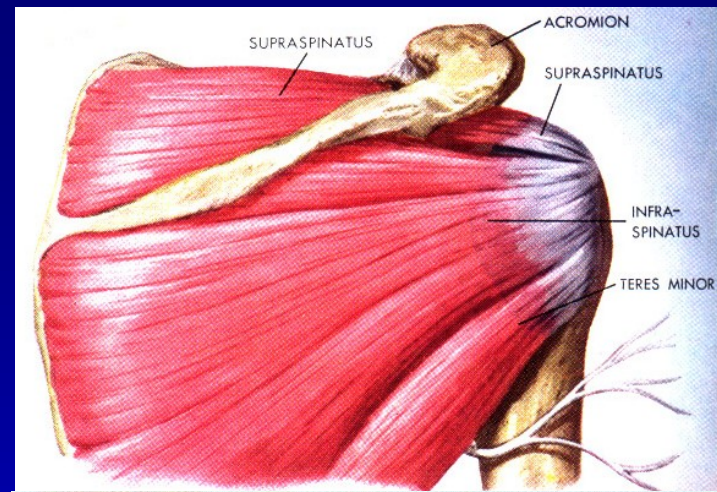
m. subscapularis

Function:

First 30° of abduction

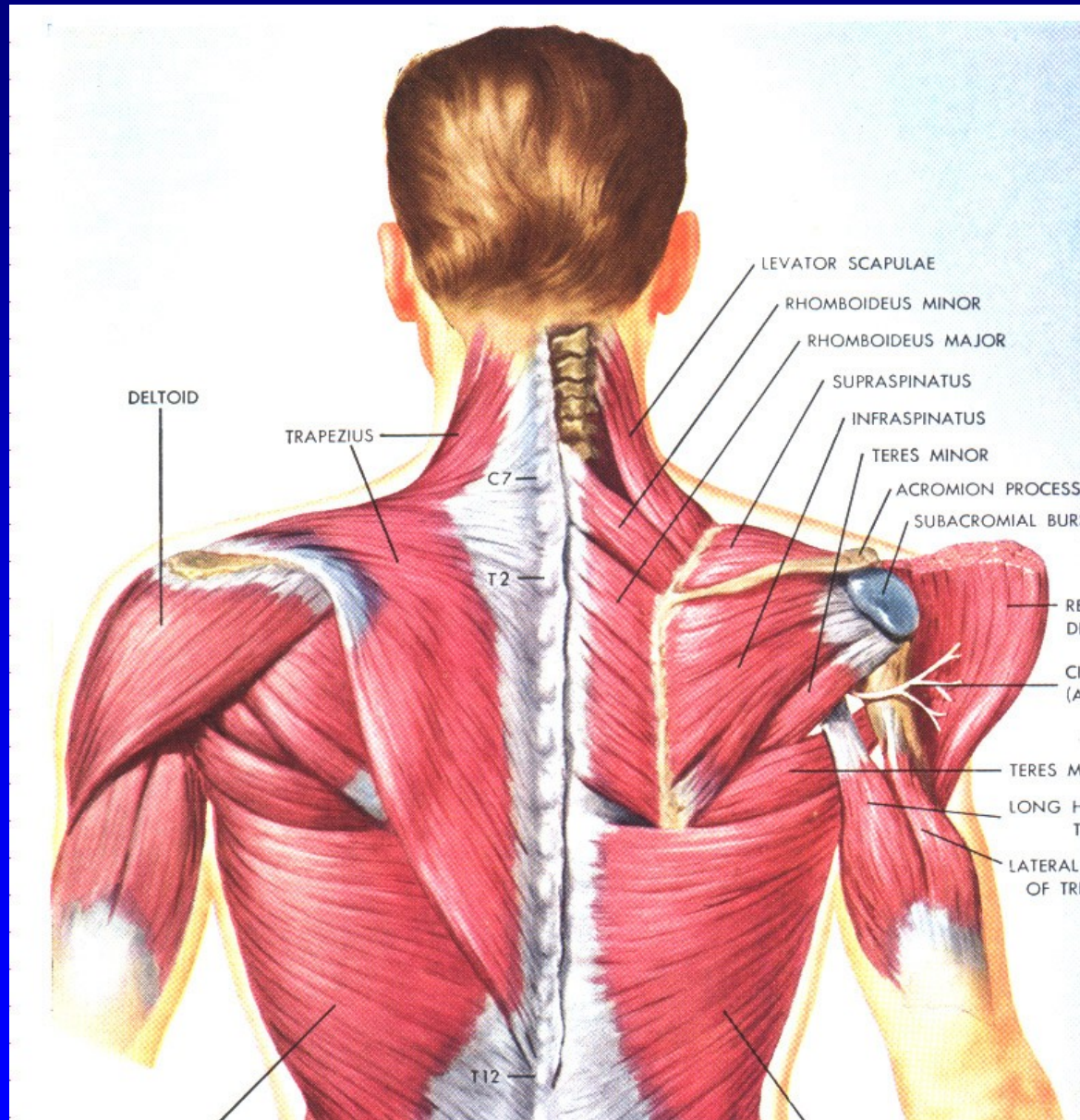
Pressure of the humeral head  
into glenoid cavity

Depressor of the humeral  
head





# Anatomy of the shoulder



# Rotator cuff tear

Partial tear:

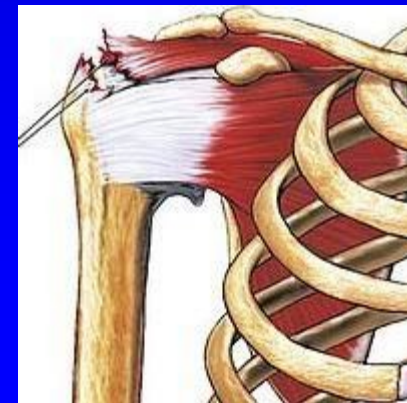
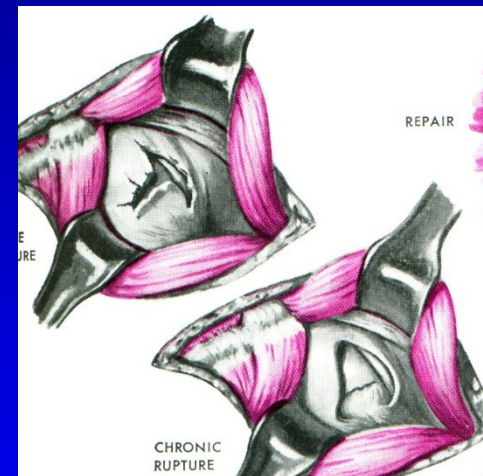
Severe pain

Painful abduction

Keeps the arm in position  
of adjusted abduction

Ultrasonography

Management: usually conservative



# Rotator cuff tear

Complete tear:

No active abduction

Lifting of the shoulder

Drop arm test

Pain

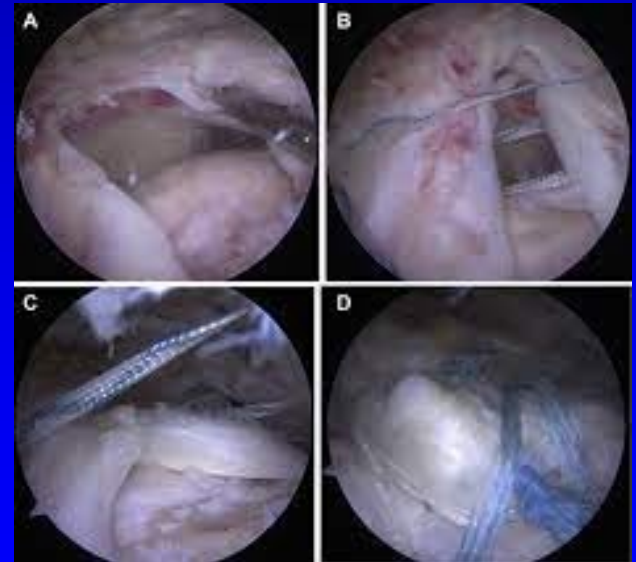
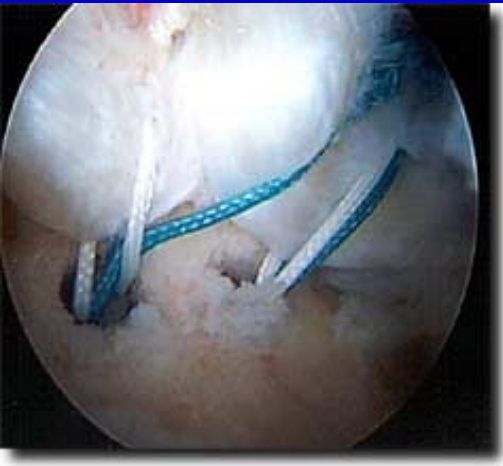


X-ray

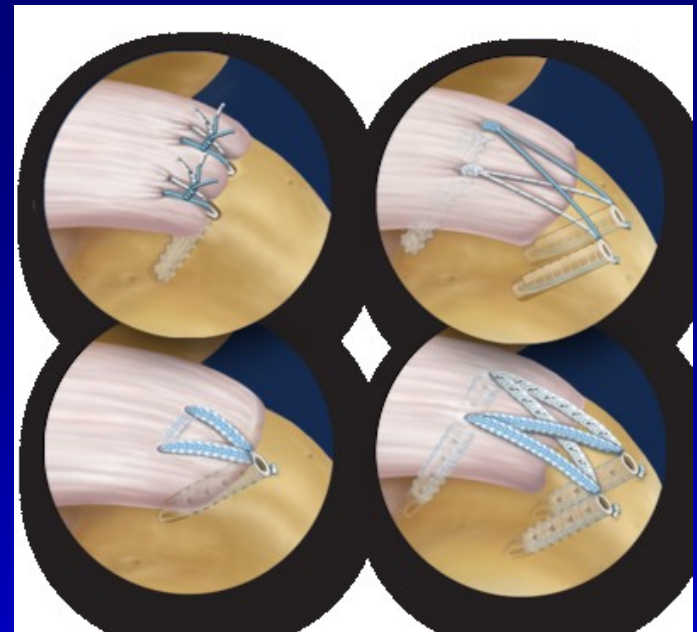
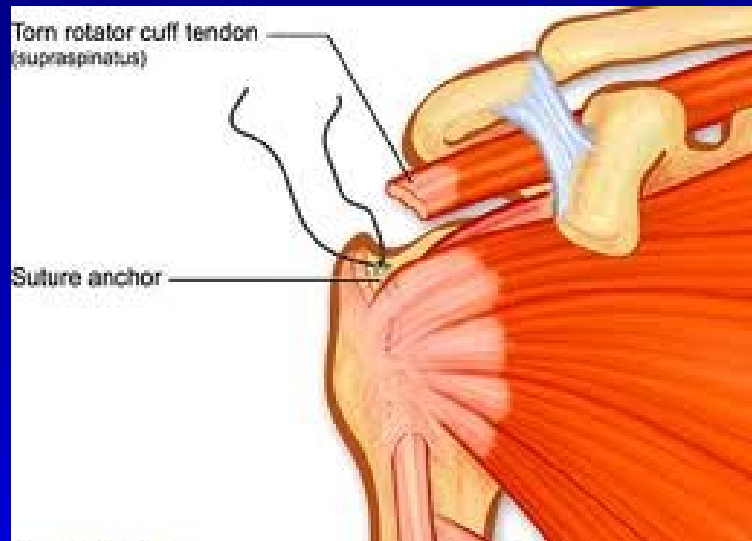
MRI

Management:  
suture: Arthroscopy

The aim: attachment to greater  
tuberosity



# Suture of RC



Management:  
suture: Open surgery

The aim: attachment to greater  
tuberosity

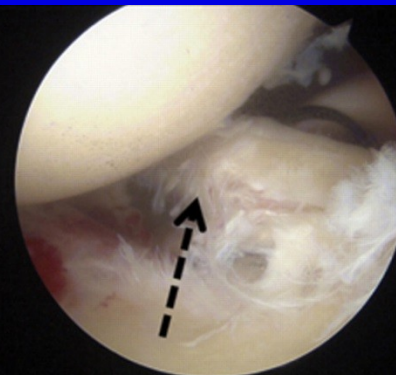
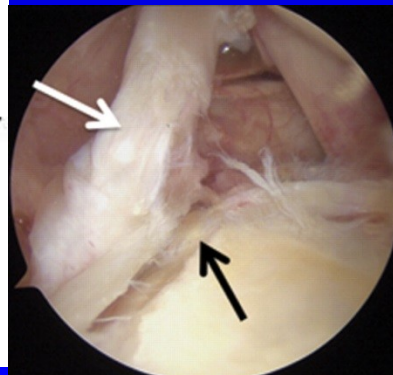
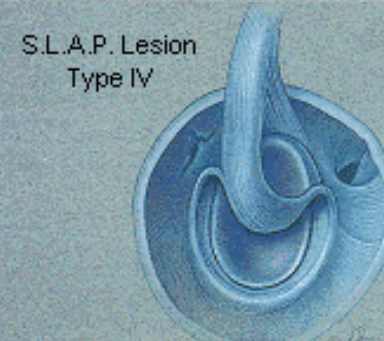
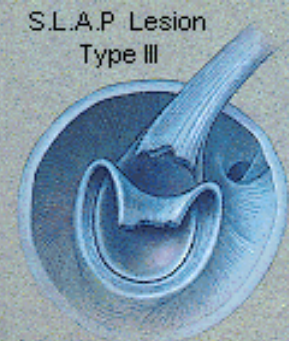
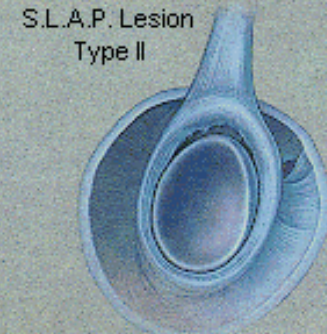
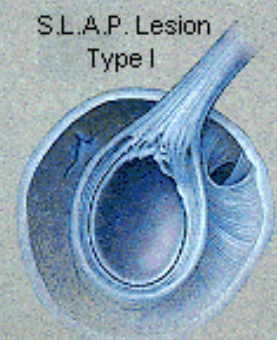


# SLAP lesion

= superior labrum anterior, posterior

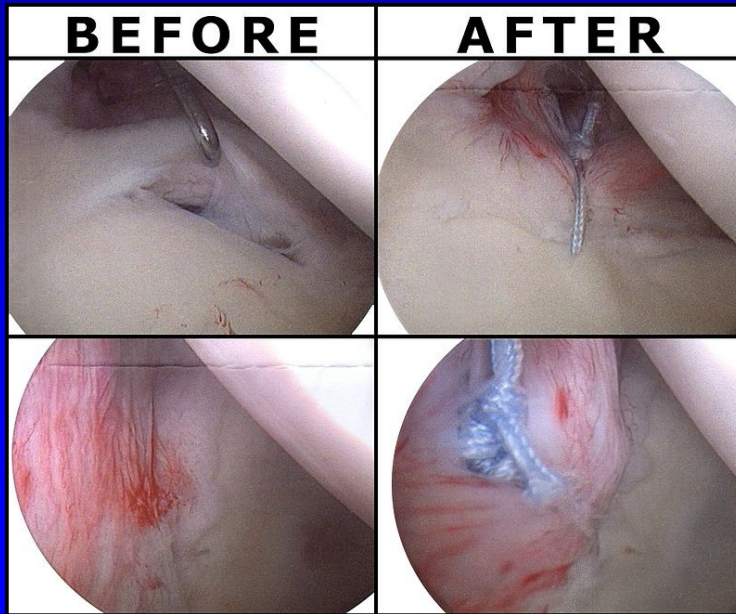
## Causes

- Subluxation, dislocation
- Microtraumatisation
- Throwing shoulder



# SLAP - management

Conservative  
Arthroscopy- debridement, suture  
Tenotomy  
Subpectoral tenodesis



suture



Subpectoral tenodesis



# Other disorders of painful shoulder

Impingement syndrom

Frozen shoulder syndrom

Osteoarthritis of glenohumeral joint

Rotator cuff arthropathy

Disorders of acromioclavicular joint

Disorders of sternoclavicular joint

Inflammations

Tumors

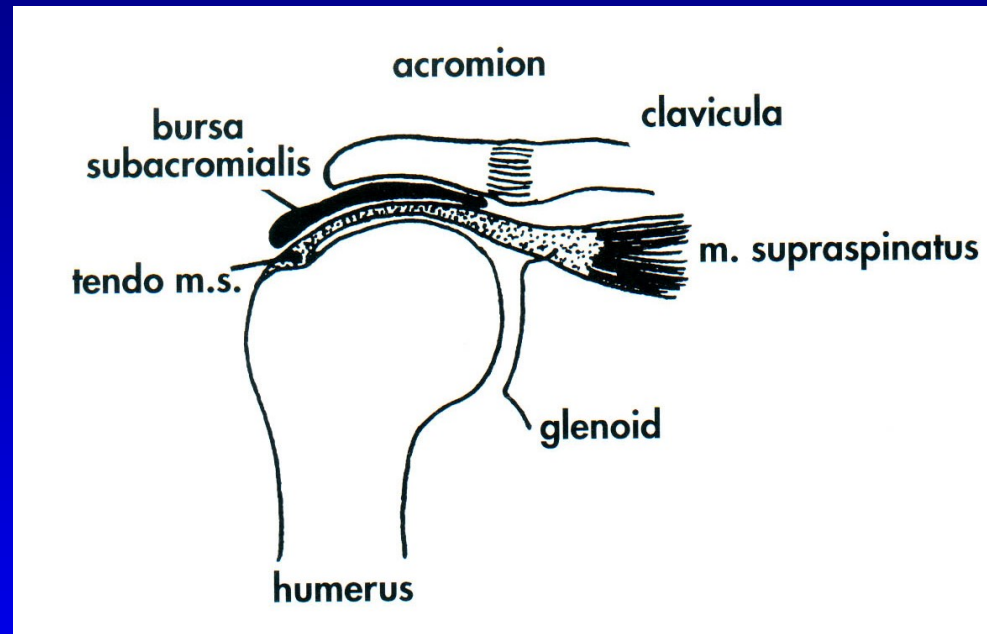
Referred pain to the shoulder

# Impingement syndrom

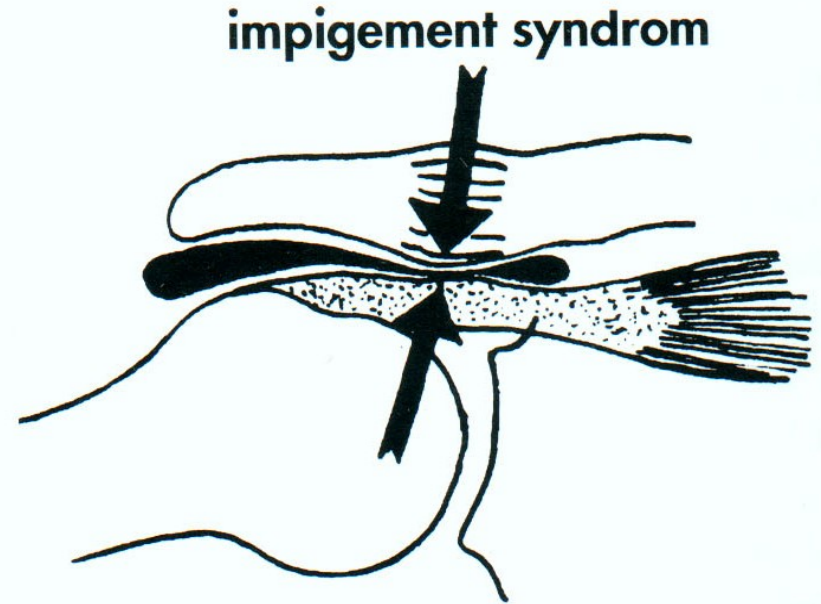
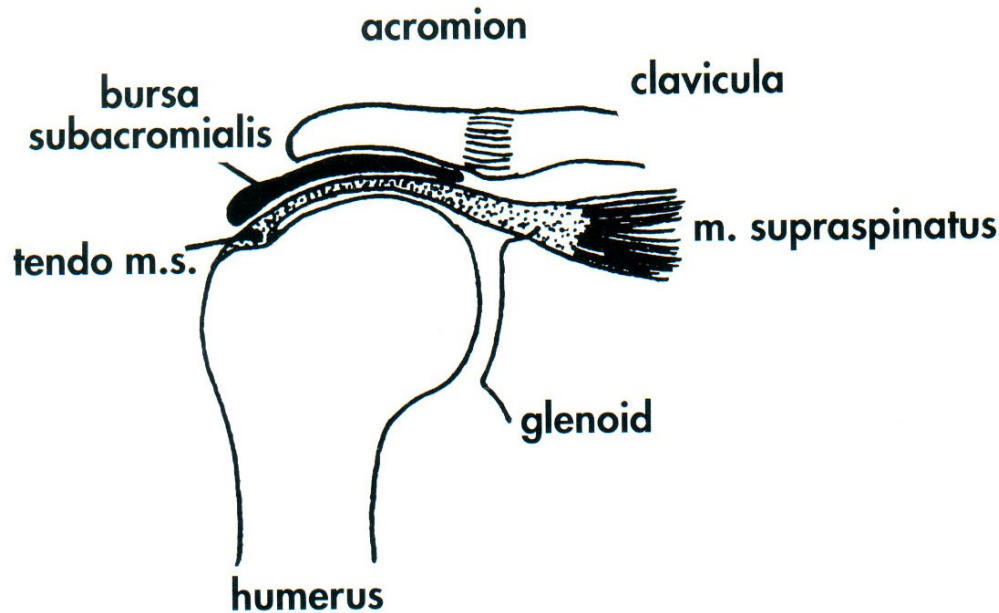
Greater tuberosity impinges  
to distal surface  
of acromion and  
coracoacromial ligament

Narrowing of subacromial  
space

Causing damage of corator cuff

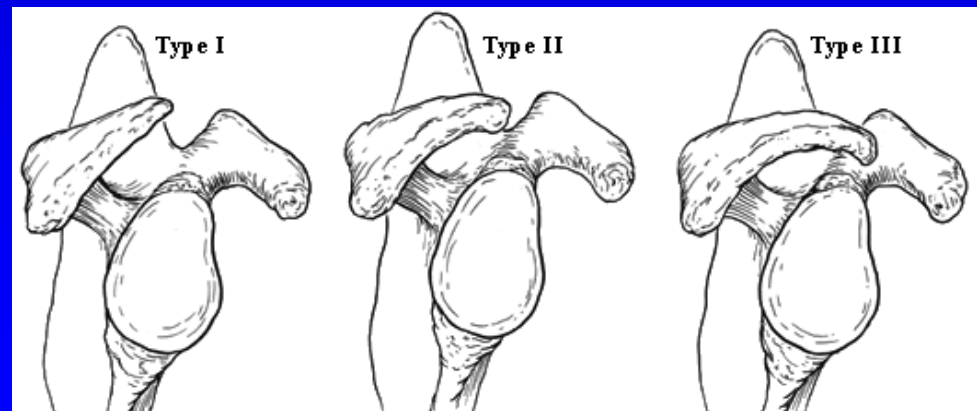


# Impingement syndrom



## Causes

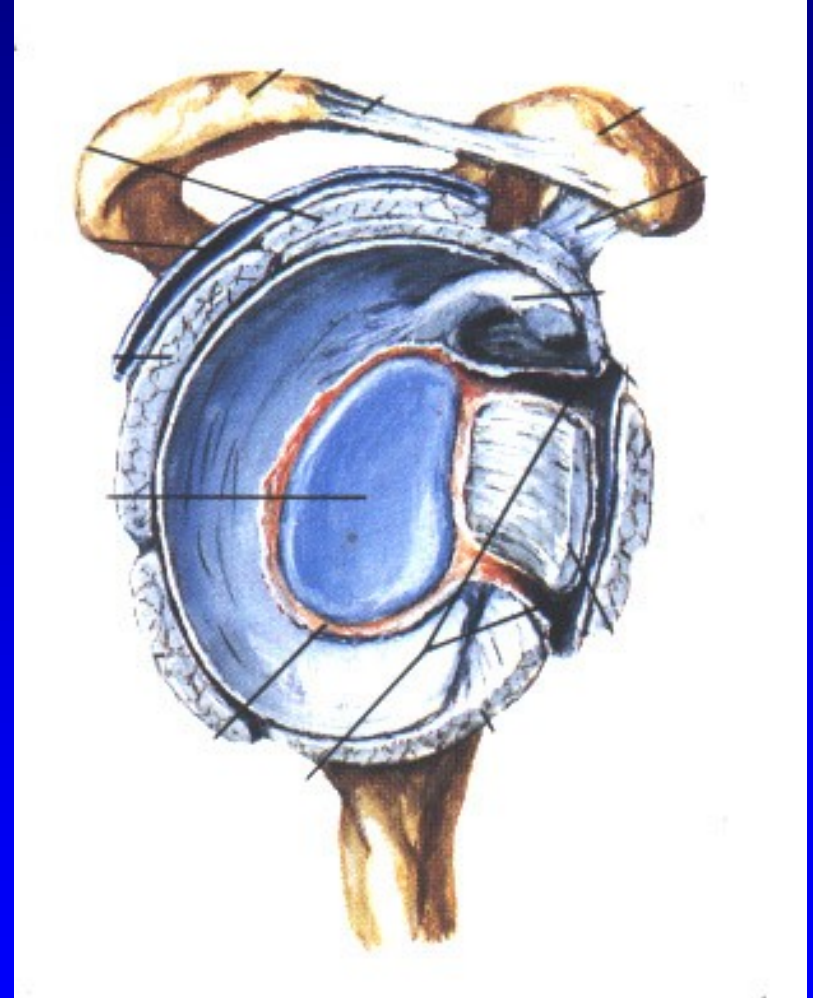
- Acromion spur
- Changes of acromion
- Distal osteophytes of AC
- Prominence of tuberculum maius



# Impingement syndrom

## Stages:

1. Swelling, hemorrhage of supraspinatus
2. Fibrosis, tendinitis, bursitis  
degenerative changes of cuff
3. Rupture of rotator cuff  
and long biceps tendon



# Impingement syndrom

Symptoms:

Painful arc

Impingement sign

Impingement test

Jobe test

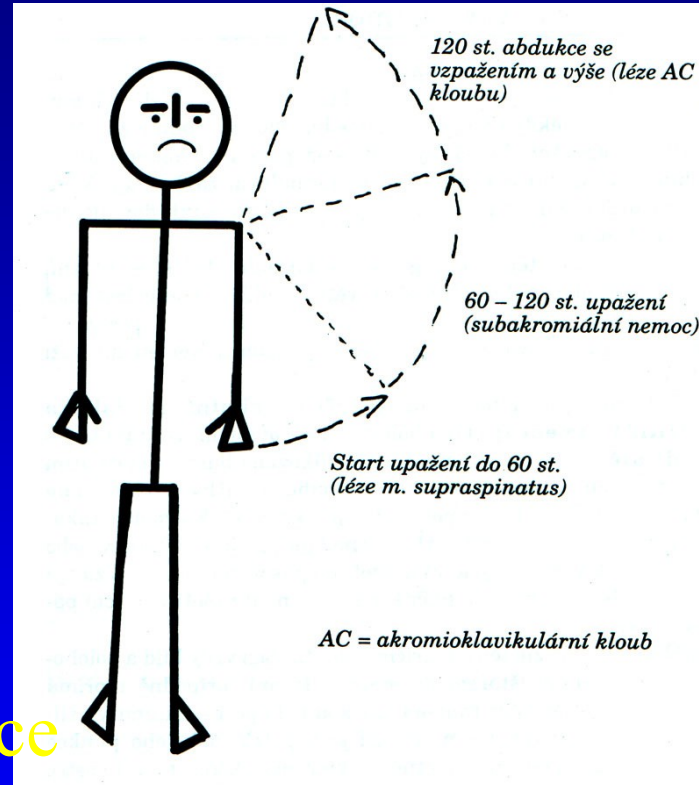
X-ray:

Narrowed subacromial space

Y view- outlet view

Arthrography

Ultrasonography



60-120 grades

painful arc

# Impingement syndrom

Therapy:

1. stage: conservative

Rest, NSAID,  
Physiotherapy,  
Local corticosteroids

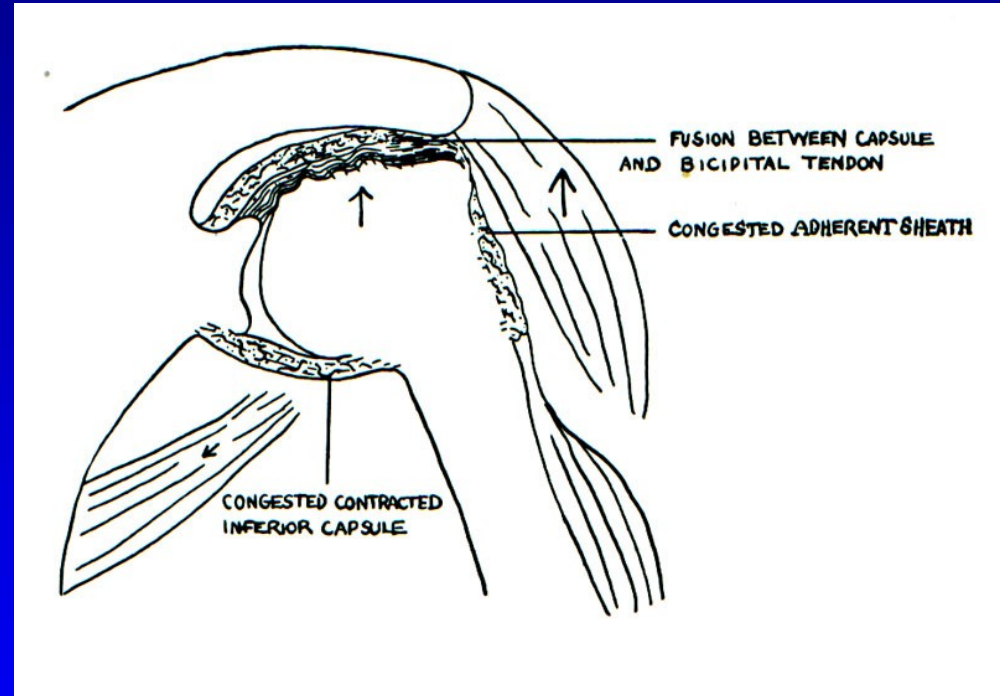
2. stage: the same  
+ bursectomy,  
subacromial decompression

3. stage:  
subacromial decompression



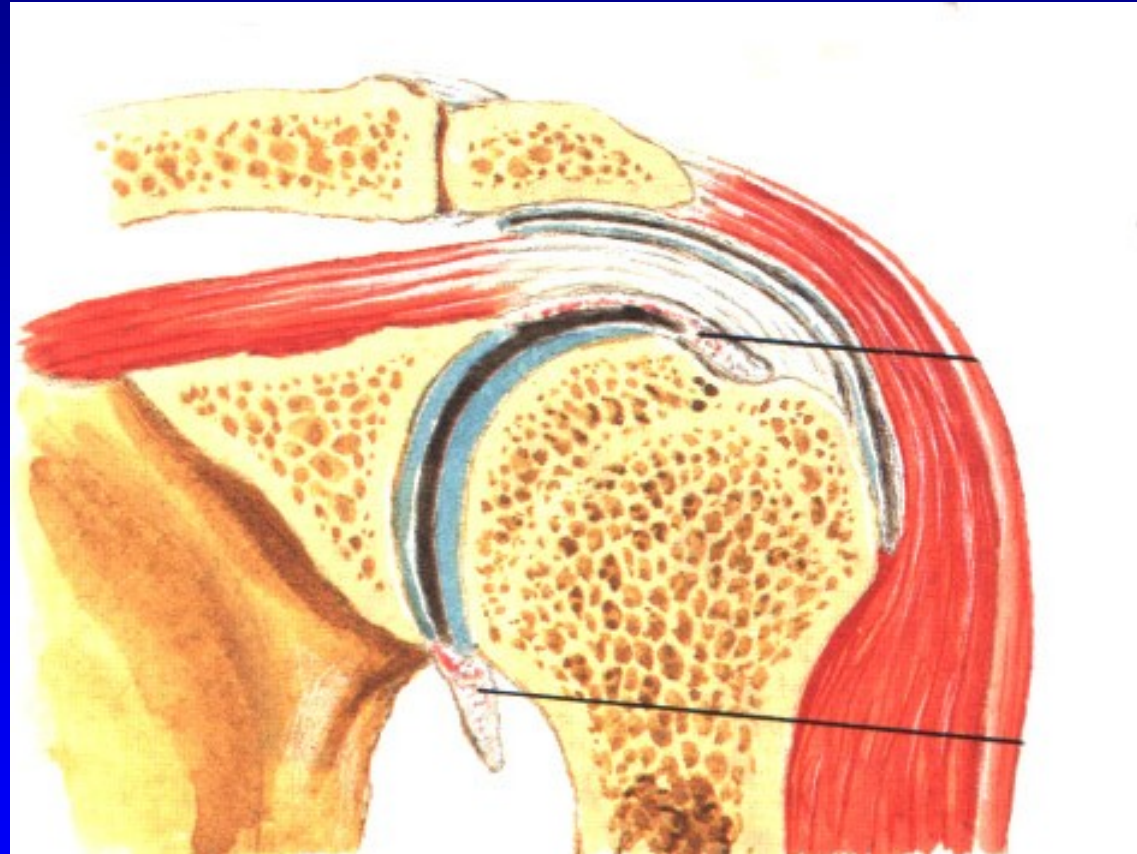
# Frozen shoulder- capsulitis adhesiva

- Progressive limitation of movements
- Pain
- No motivation for movement
- Shrinkage of capsule
- Adhesions in distal recessus
- Tightening of soft tissue
- Muscle spasm
- Low capacity of joint space



# The cause

All conditions limiting  
joint movements:  
Impingement syndrom  
Arthrosis of AC joint  
Posttraumatic conditions  
Inflammations  
Thoracic outlet syndrom  
Tumors of the lungs  
Disorders of pleura  
Cardiac disorders





# Frozen shoulder

Management:

Long lasting period

Heat

Passive movements

Positioning

Active movements

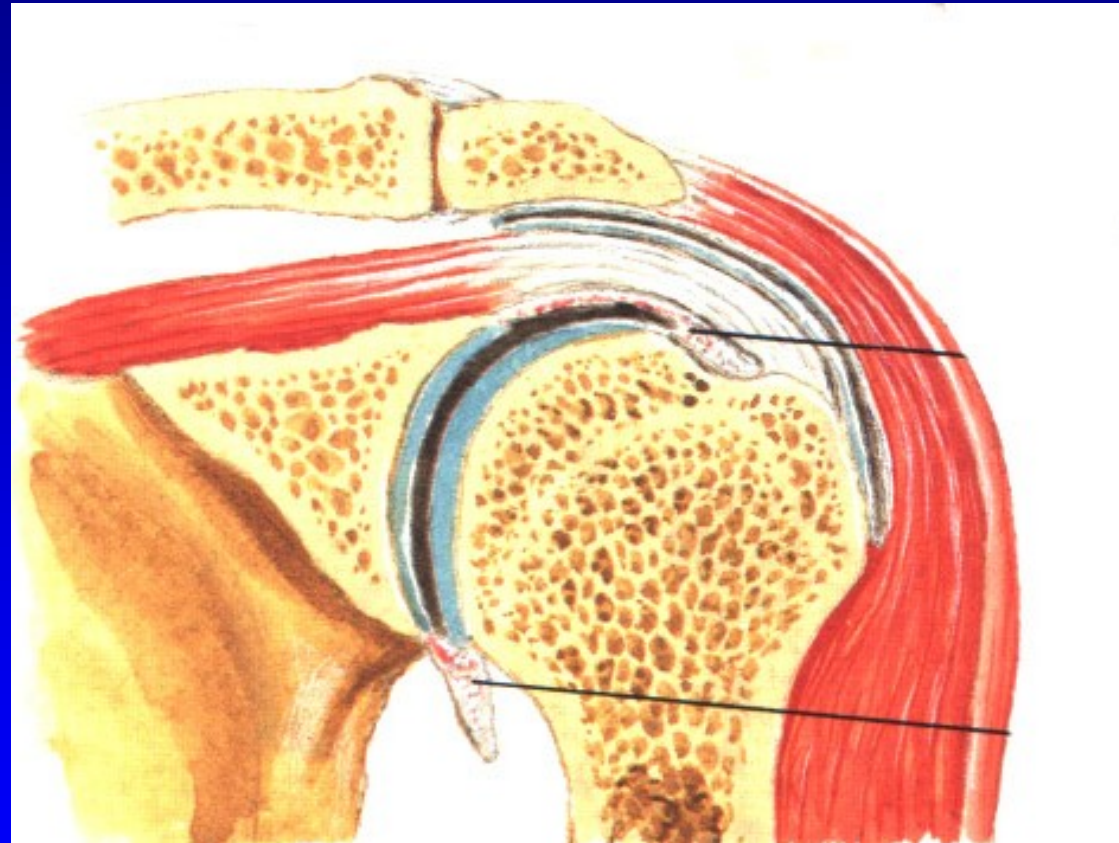
Physiotherapy

NSAID

Local corticosteroids

ASC- decompression

Removal of adhesions



# Glenohumeral osteoarthritis - omarthrosis

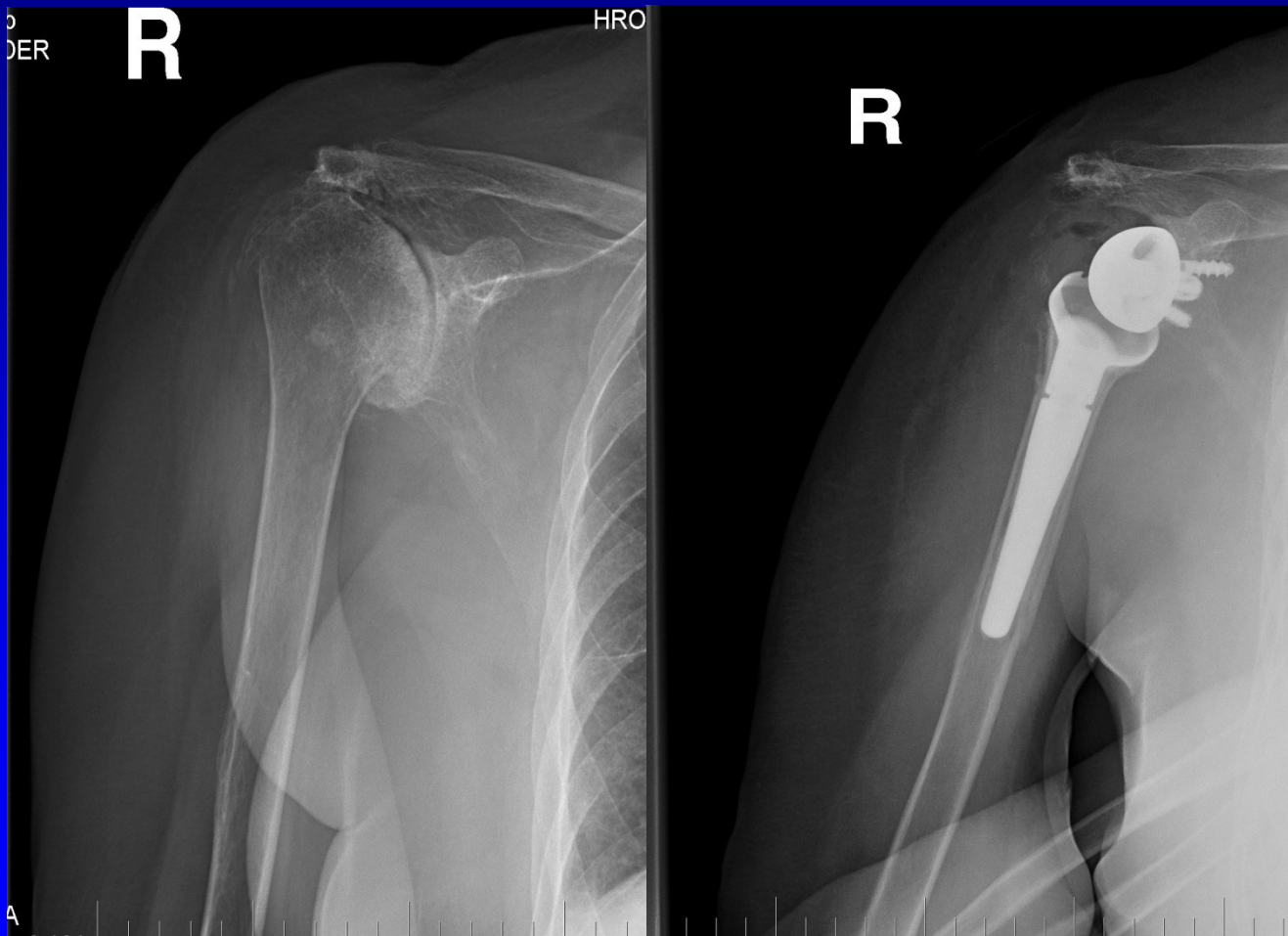


Therapy:

Conservative

Total shoulder replacement

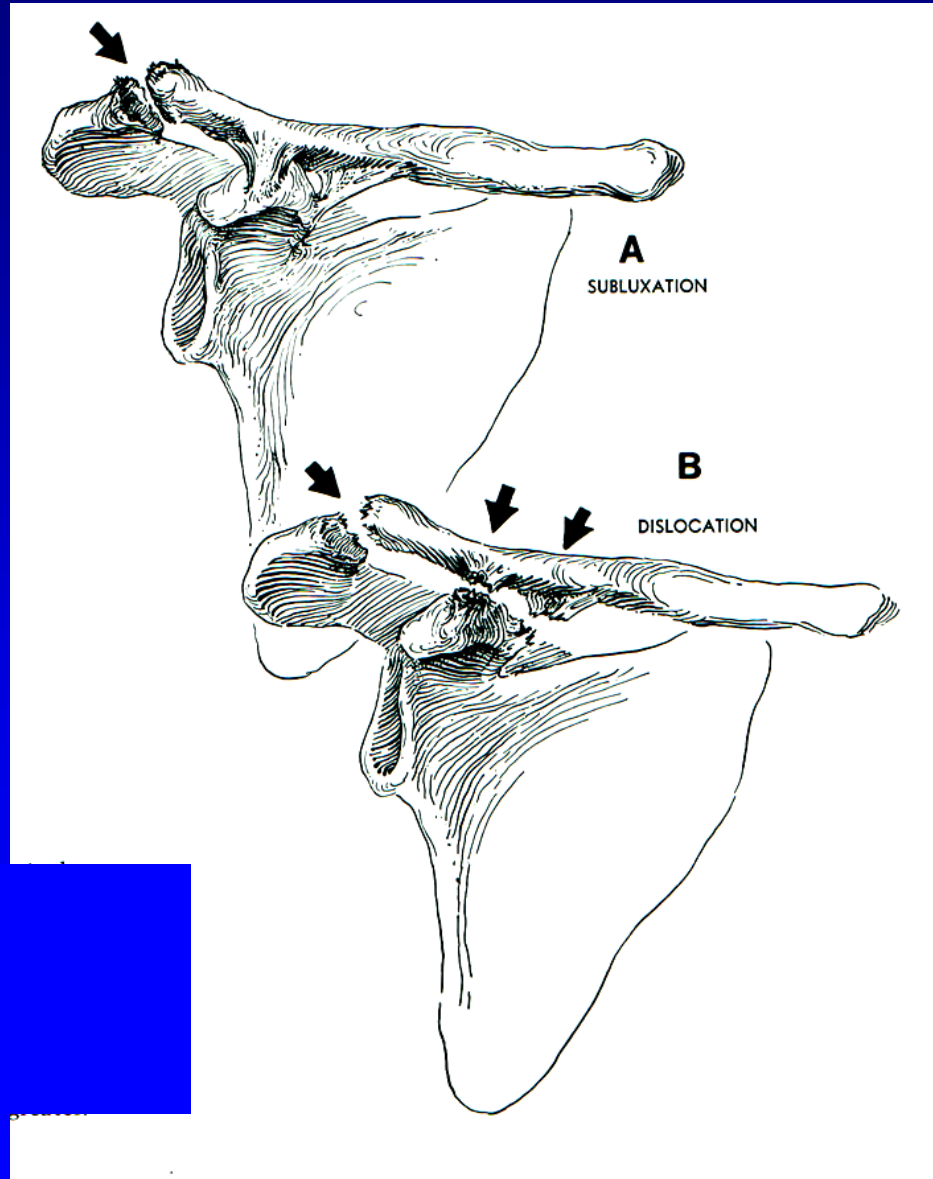
# Rotator arthropathy



Reverse total shoulder arthroplasty

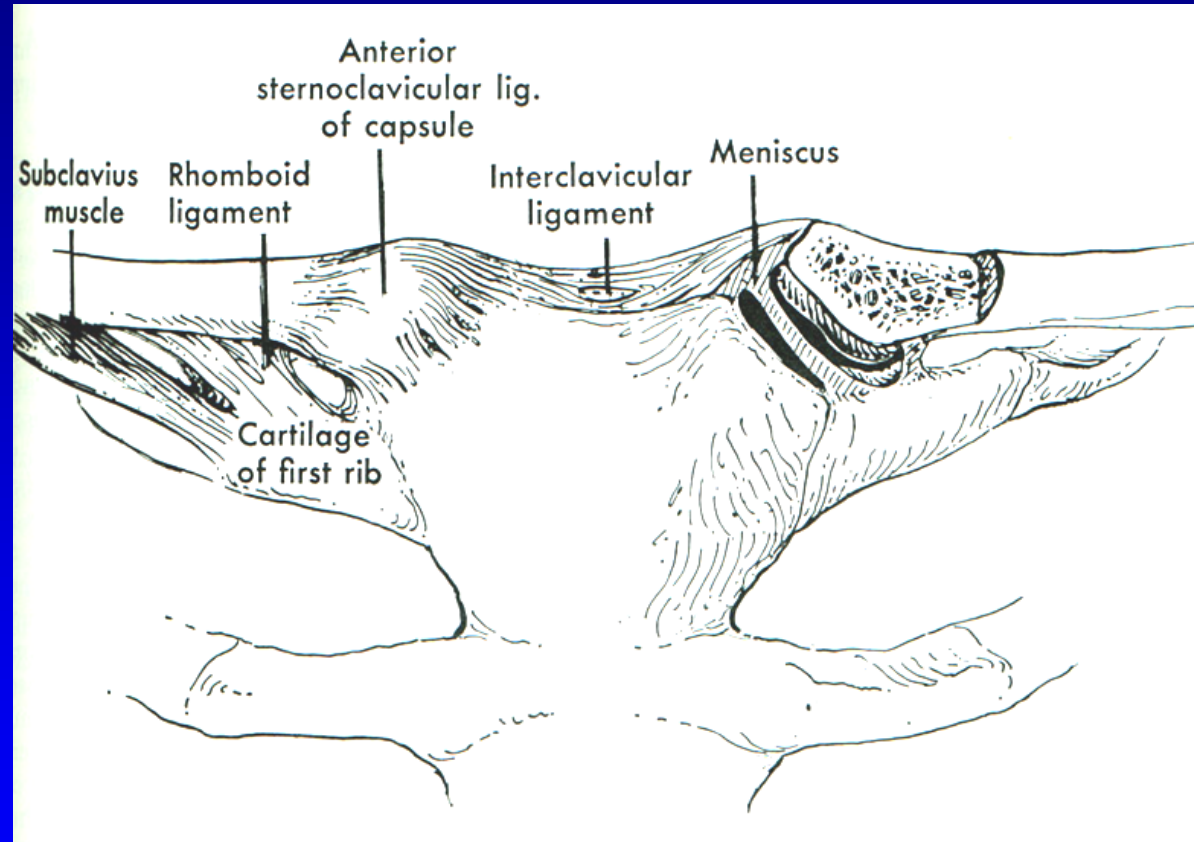
# Disorders of acromioclavicular joint

Synovitis  
O.A.  
Sprain  
Subluxation  
Dislocations



# Disorders of sternoclavicular joint

Synovitis  
O.A.  
Sprain  
Subluxation  
Dislocations  
Chronic subluxation



# Referred pain to the shoulder

Cervical spine

Thoracic outlet syndrom

Cardiac diseases

Lung and pleura disorders

Herpes zoster neuralgia