Common Overuse Musculoskeletal Injuries

Dr Karen Holzer
Sports Physician

Shoulder

1. Rotator Cuff Impingement
2. Rotator Cuff Tendinopathy
3. AC joint Inflammation/Degeneration

Rotator Cuff Impingement:

- **Impingement** is a clinical sign – not diagnosis
- Occurs when rotator cuff tendons are impinged as they pass thru the SA space – formed bw the acromion, coracoacromial arch & AC joint above & the glenohumeral joint below
- Causes mechanical irritation of the RC tendons – may result in swelling & damage

Rotator Cuff Impingement

- Types:

1. Primary External Impingement

- Encroachment from above due to structural abnormalities eg acromial spurs, AC joint degeneration

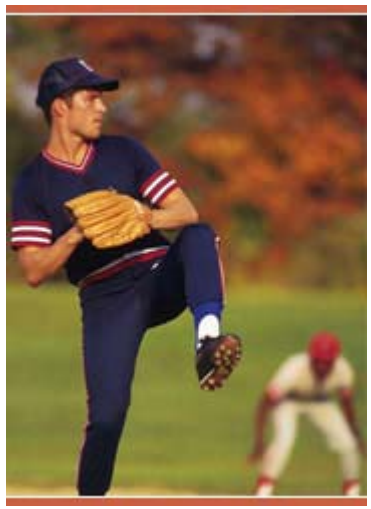
2. Secondary External Impingement

- Encroachment from above due to functional abnormalities:
  - weak scapular stabilisers - anteroinf movement of acromion or anterior instability
  - RC weakness and imbalance bw humeral elevators (deltoid) & stabilisers (rc muscles) resulting in humeral elevation
  - Ant instability – anterosuperior elevation of humeral head

Rotator Cuff Impingement

3. Internal Impingement:

- Occurs mainly in overhead athletes during late phase of cocking or catch and pull phase of swimming when impingement of RC occurs against the post – sup surface of the glenoid



Rotator Cuff Tendinopathy:

- Common cause of shoulder pain and impingement
- Results in swelling and weakness of tendons
- Major determination of onset is the volume of work
- Apoptosis (cell death) & assoc pathways are increased in overuse tendinopathy & may play a role in tendinopathy

Rotator Cuff Tendinopathy:

- Clinical Features:

1. Pain with overhead activity
2. More severe cases – pain in bed at night

Rotator Cuff Tendinopathy:

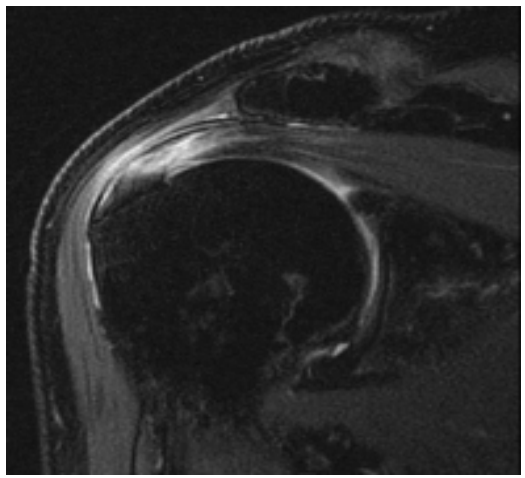
Examination:

- Painful abduction arc bw 70 and 120 degrees
- Internal rotation commonly reduced
- Pain at extremes of abduction
- Positive impingement testing
- Pain with resisted contraction of supraspinatus (resisted upward movement in 90’ abd, 30’ HF and IR

Rotator Cuff Tendinopathy:

Investigations:

- Ultrasound or MRI – swelling &/or partial tearing of the supraspinatus, or occasionally subscap, often swelling of the subacromial bursa



Rotator Cuff Tendinopathy:

Treatment:

1. Rest
2. Physiotherapy – strengthening or the rotator cuff and scapulothoracic muscles
3. Corticosteroid injection into the SA space
4. Surgery – shoulder arthroscope and decompression

Rotator Cuff Tears:

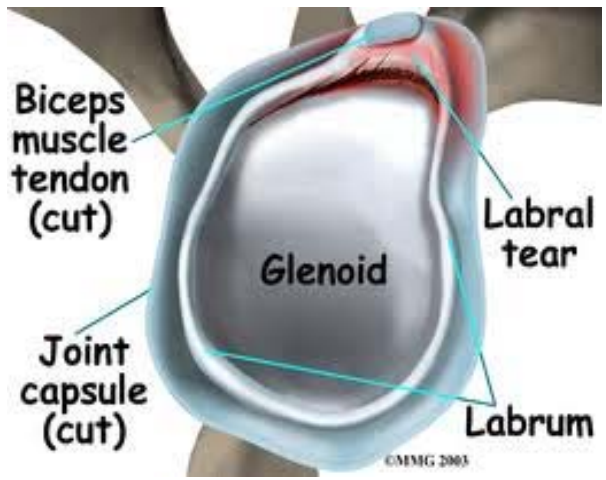
- Complete and partial tears of the RC tendons common in older athletes
- Present with pain with activity and lying in bed at night
- Examination – similar to RC tendinopathy but with weakness on SS testing
- Treatment:
  - Partial – conservative
  - Full thickness - surgery

Calcific Tendinopathy

- Calcification within RC tendons esp SS
- Cause – previous damage to the tendon
- Presentation: pain – often severe – at rest, with movements & in bed
- Diagnosis: Xray and US
- Treatment:
  - Cortisone injection
  - Physiotherapy
  - ?ESWT

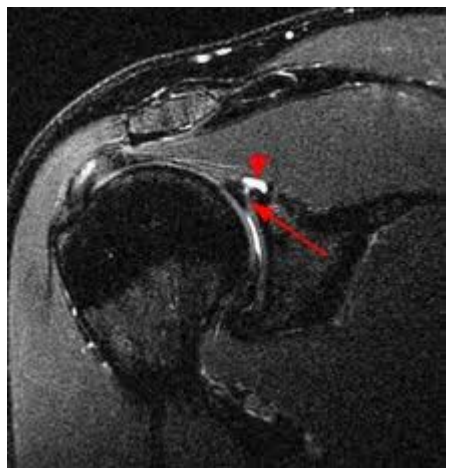
Labral Tears

- Divided into:
  - SLAP – superior labral tears extending from ant to biceps tendon to post
  - Non SLAP



SLAP lesions

- Cause: repetitive overhead activity and excessive inferior traction
- Present: poorly localised pain with overhead and behind the back arm motions
- Examination: tenderness over ant joint, pos ant slide, Obrien's and Crank Test
- Investigations: MRI
- Treatment: surgery



Adhesive Capsulitis

- Glenohumeral joint stiffness
- Cause:
  - Spontaneous – us. in 40 – 60 yo age group, esp Female
  - Post trauma or Surgery
- Present: pain and stiffness
- Examination: painful generalised reduction in ROM
- Treatment: Hydrodilation and followup physiotherapy

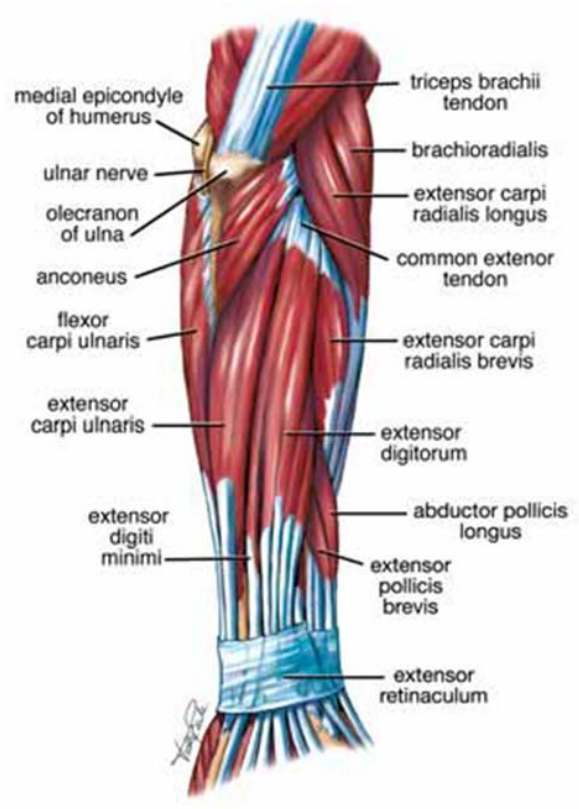
Chronic AC joint Pain

- Cause: repetitive minor injuries or following previous trauma may result in damage to fibrocartilaginous menisci in joint or osteolysis of distal end of clavicle (esp wt lifters)
- Present: Pain with HF & signs of impingement
- Diagnosis: Xray – osteophytes or osteolysis
- Treatment:
  - Physiotherapy – electrotherapy , strengthening
  - Corticosteroid injection
  - Occas surgery

Acromioclavicular Joint Arthritis

Elbow:

1. Tennis Elbow
2. Golfer's Elbow
3. Posterior Impingement
4. Triceps Tendinopathy
5. Olecranon Bursitis
6. Osteochondritis Dissecans



Tennis Elbow

= Extensor Tendinopathy – inflam +/- degen of the ECRB tendon at the lateral epicondyle

Tennis Elbow

Cause: marked tightness of the wrist extensors secondary to repeated wrist extension resulting in a shearing force on the tendon

Can be related to racquet sports, computer use etc

Onset: us. slow & insidious but may come on after a heavy load of work

Examination:

- tenderness us. 1-2 cm distal to lateral epicondyle
- Pain with resisted wrist and 3rd finger extension

Tennis Elbow

Treatment:

- Combination required:
  - Massage forearm extensors
  - Ice, NSAIDS
  - Brace
  - Corticosteroid injection
  - Autologous blood injection – may instigate an inflammatory cascade & promote healing – initial studies show a 79% success rate
  - Surgery – debridement & release of ECRB tendon from lat epicondyle

Golfer’s Elbow

- Excessive activity of the wrist flexors results in inflammation +/- degeneration of the tendons of pronator teres & the flexor group = flexor/pronator tendinopathy

Golfer's Elbow

- Presentation: medial elbow pain with lifting or activity
- Examination:
  - Tenderness at or just below the medial epicondyle
  - Pain with resisted wrist flexion & resisted forearm pronation
- Treatment: similar to tennis elbow

But particular attention to tennis or golf technique

Olecranon Bursitis

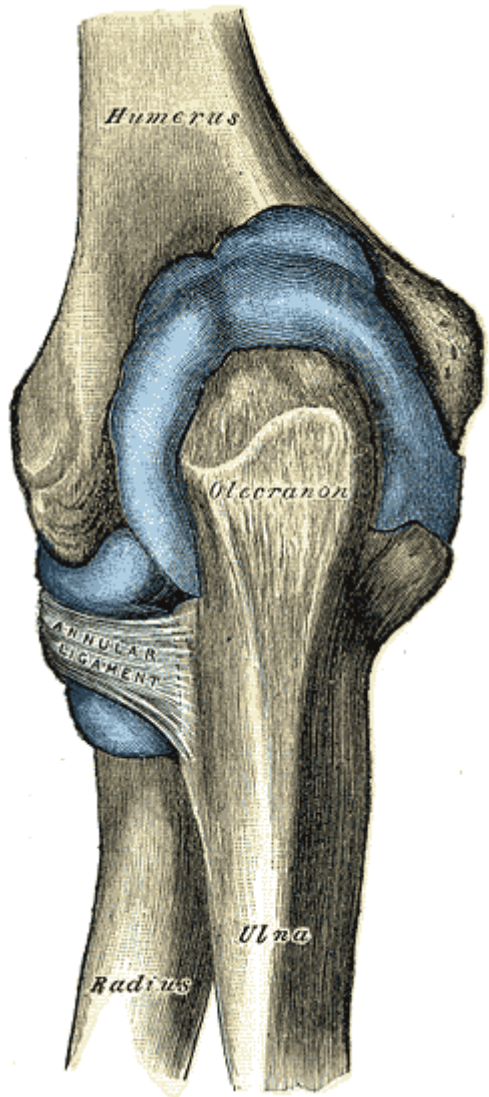
- A subcutaneous bursa overlying the olecranon that becomes filled with blood & fluid
- Cause: single episode of trauma or more commonly after repeated trauma eg Student's elbow
- Treatment: rest, NSAIDs, ice
  - If not settling – aspiration and corticos
  - If chronic – may require excision
- RISK –

may occasionally become infected

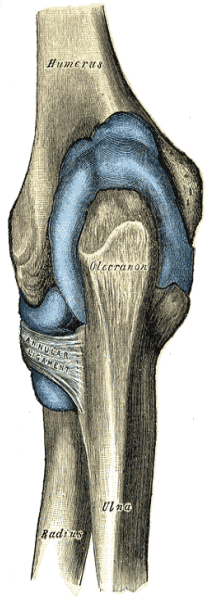
Posterior Impingement

- Most common cause of posterior elbow pain
- Causes:

1. Younger – “hyperextension valgus overload syndrome” = results in impingement of the posteromedial olecranon tip on the olecranon fossa
2. Older – us. arthritis of the radiocapitellar joint. Impingement of osteophytes results in posterior pain



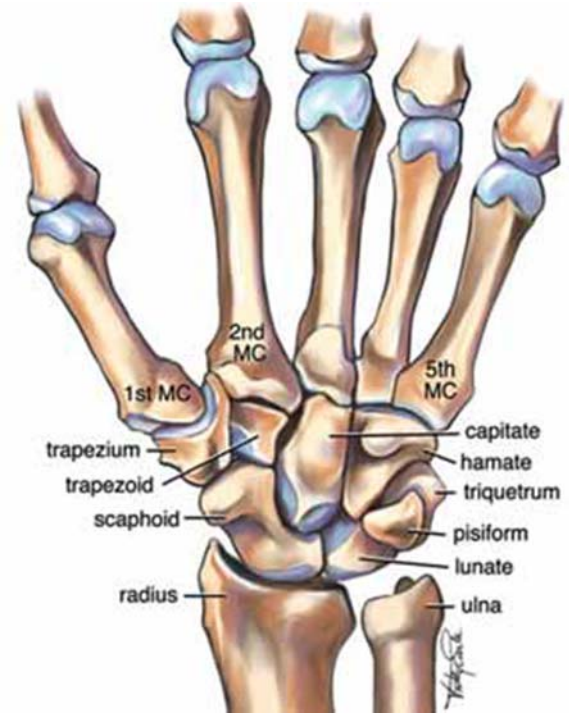
Posterior Impingement



- Presentation:
  - posterior elbow pain with extension.
  - With increasing severity or duration may result in flexion deformity of the elbow
- Examination:
  - Tenderness of the posterior joint line
  - Pain with forced extension
- Treatment:
  - Rest, NSAIDS
  - Corticosteroid injection
  - Surgery – removal of inflamed tissue and osteophytes

Wrist:

1. Ganglions
2. Ligament Tears
3. Tendinopathies/ Tenosynovitis



Ganglions

= synovial cyst communicating with the joint space

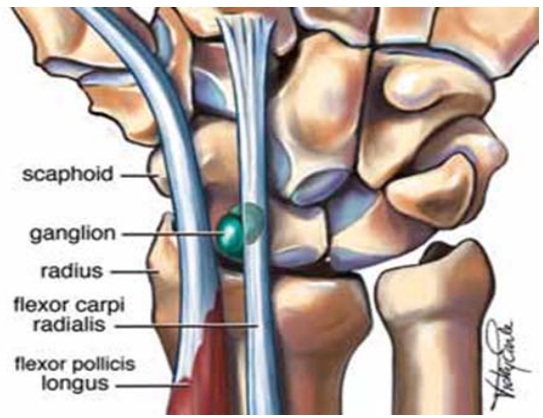
- Occur at several sites, but mainly in the scapholunate space

Presentation:

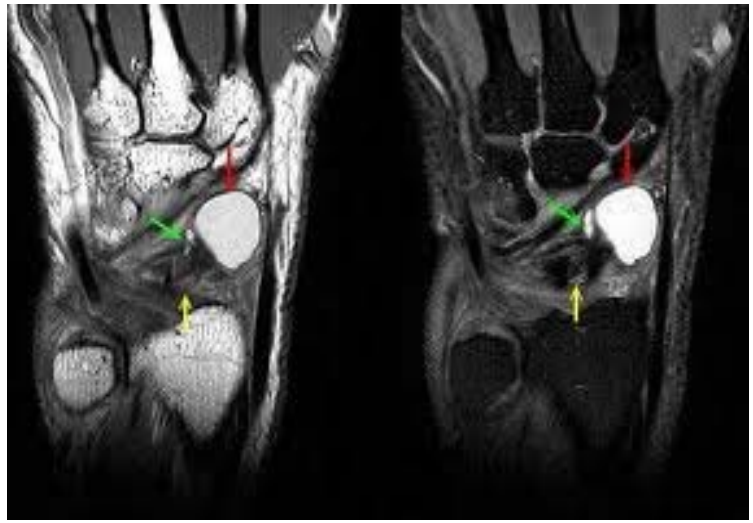
- Painless swelling
- Intermittent wrist pain & reduced movement

Examination:

- +/- palpable swelling
- Localised tenderness
- Pain with wrist extension



Ganglions



- Diagnosis:
  - MRI gold standard
  - US
- Treatment

  *only indicated if painful
  - Aspiration and corticosteroid injection
  - Surgery if recurrent or failure with conservative management

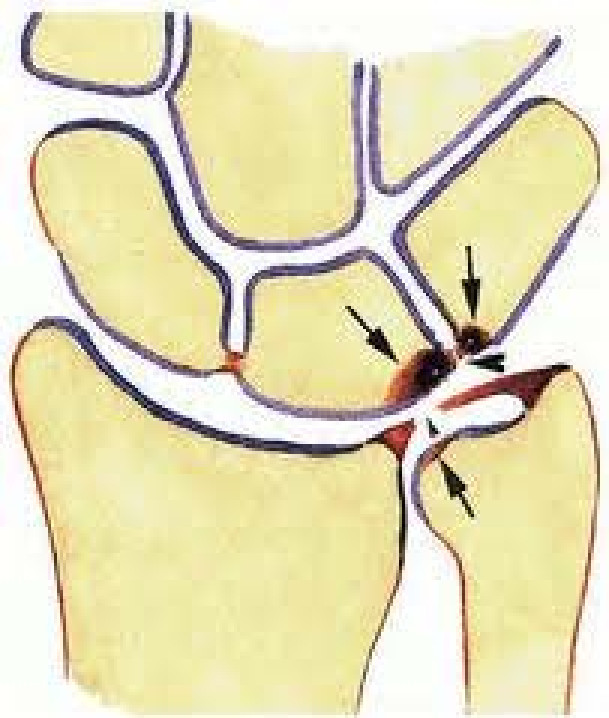
Ligament Tears

1. TFCC Tear

   *Lies bw the ulnar and carpus

   *Main stabiliser of the distal radio-ulnar joint

   - Cause = compressive loads to the wrist esp if accompanied by ulnar deviation eg gymnastics, diving, golf, racquet sports



Ligament Tears

Examination:

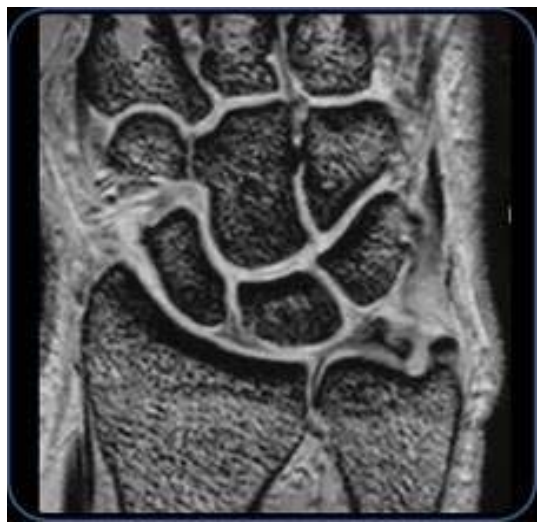
- Tenderness & swelling along the dorso-ulnar aspect of the wrist joint
- Pain on resisted wrist extension & ulnar deviation
- Clicking
- Reduced grip strength

Investigations:

- MRI

Treatment:

- Brace, strengthening
- Surgery: arthroscope



De Quervain's Tenosynovitis

= inflammation of the synovium of APL and EPB tendons as they pass thru a fibro-osseous tunnel at the level of the radial styloid

*occurs esp in racquet sports, 10 pin bowlers, rowers, canoeists

De Quervain's Tenosynovitis

Presentation:

- Activity related radial sided wrist pain

Examination:

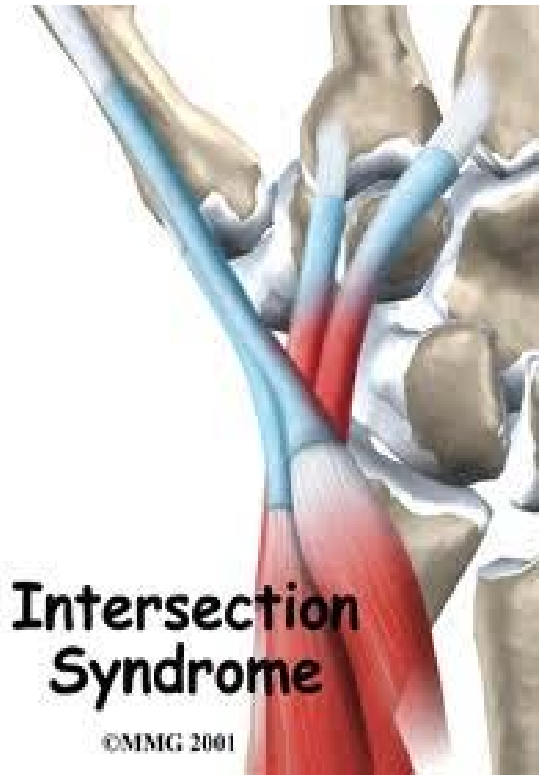
- Localised swelling & tenderness at the level of the radial styloid
- Positive Finkelstein's test

Treatment:

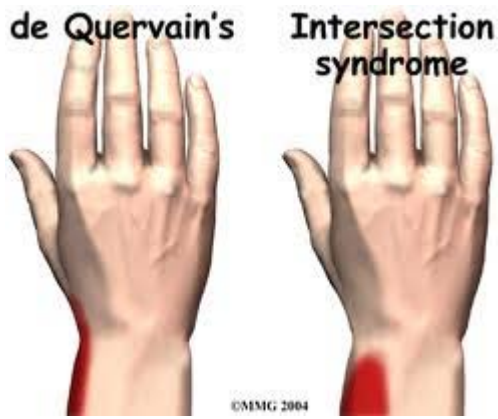
- Brace, ice, massage, NSAIDS
- US guided corticosteroid injection into tendon sheath
- Surgery – surgical release

Intersection Syndrome

- Bursitis at the site where APL & EPB cross over the ECR tendons
- Cause:
  - Friction at the site of crossing or
  - tenosynovitis of the 2 extensor tendons within their synovial sheaths
- Occurs in: rowers, canoeists, wt trainers, racquet sports



Intersection Syndrome



Examination:

- Tenderness radio-dorsally
- Crepitus proximal to the radial styloid

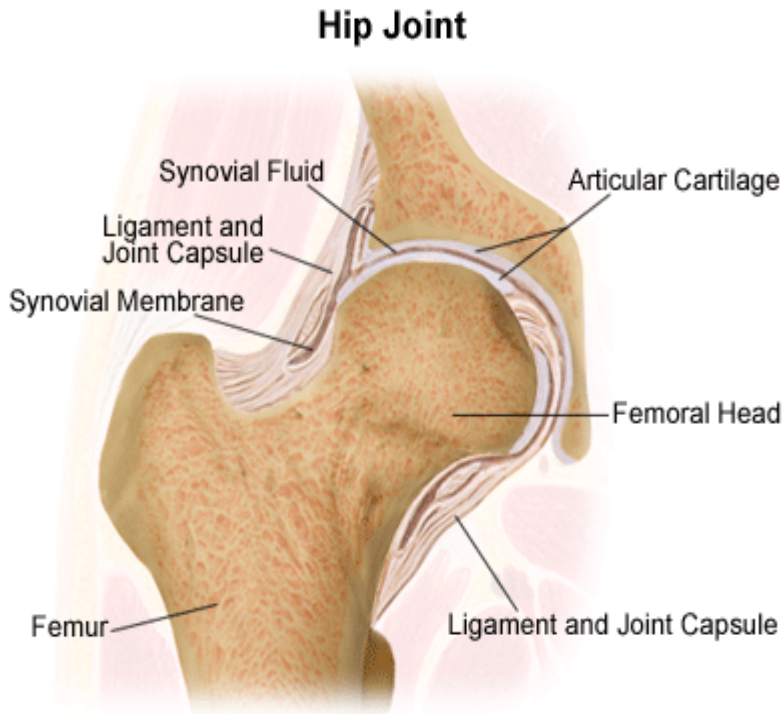
Investigations: ultrasound

Treatment:

- Rest, NSAID, ice
- Early intervention with corticosteroid inj into bursa
- Correction of technique
- Surgical Decompression rarely

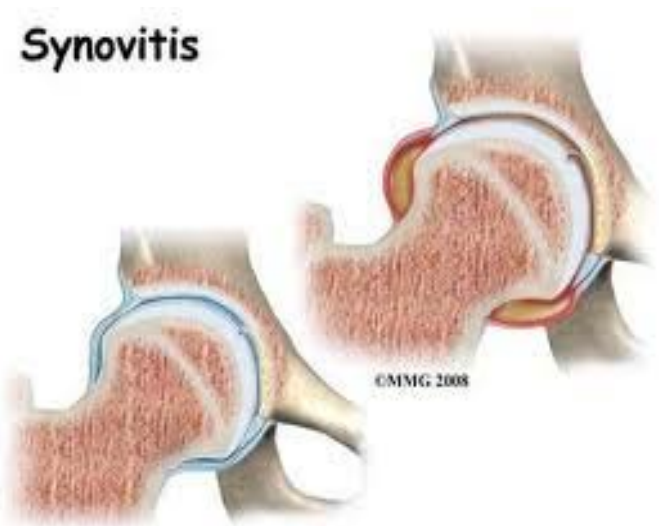
Hip

1. Synovitis
2. Labral Tear
3. FAI
4. Gluteal Tendinopathy/Trochanteric Bursitis



Hip Synovitis

- Inflammation of the hip joint
- May be associated with most hip injuries but can also represent underlying structural issues:
  - Arthritis
  - FAI



Hip Synovitis

Presentation:

- Anterior groin pain associated with:
  - Activity
  - Flexion &/or rotation of the hip joint

Examination:

- Tenderness in anterior groin
- Pain &/or restriction with flexion and IR

Investigations:

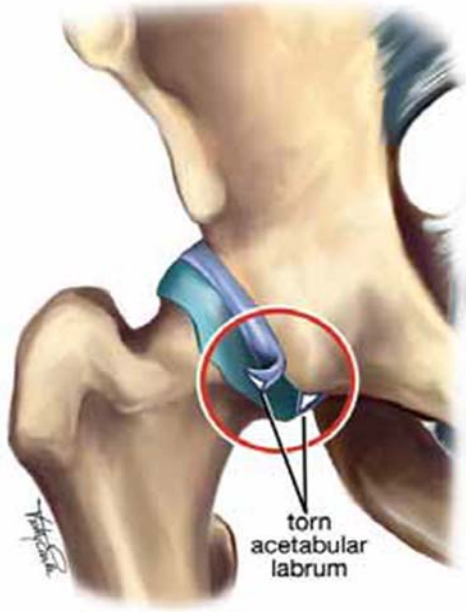
- Xray – structural
- MRI

Hip Synovitis

Treatment:

- Xray guided corticosteroid injection
- Physiotherapy – soft tissue therapy to hip flexors, strengthening of gluteal muscles
- If degenerative – role for synvisc inj

Labral Tears



<u>Cause</u>:

- Extrinsic:
  - Lifting/twisting incidents
  - Squatting/loading
  - Passive impingement: cyclists, horse-riders, truck drivers, up adders
  - Active impingement – dancers, martial arts, water polo
- Intrinsic
  - Dysplasia
  - Old slipped Fem Epiphyses
  - FAI – ganz lesions etc

Labral Tears

Presentation:

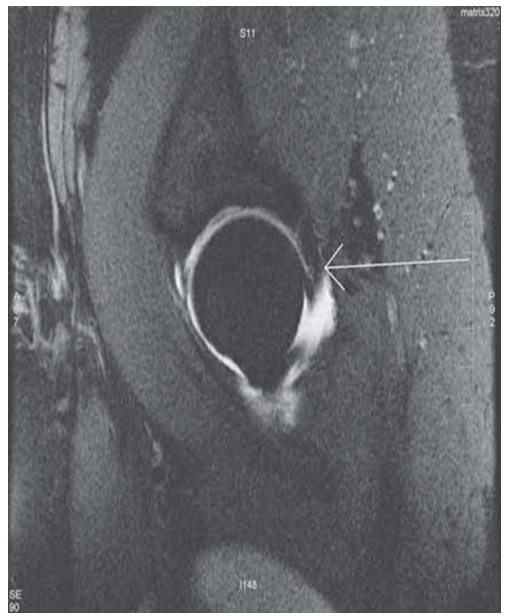
- Anterior groin pain with flexion & rotation movements
- Clicking

Examination:

- Anterior groin tenderness
- Pain +/- restriction with flexion and IR of hip

Investigations:

- MRI

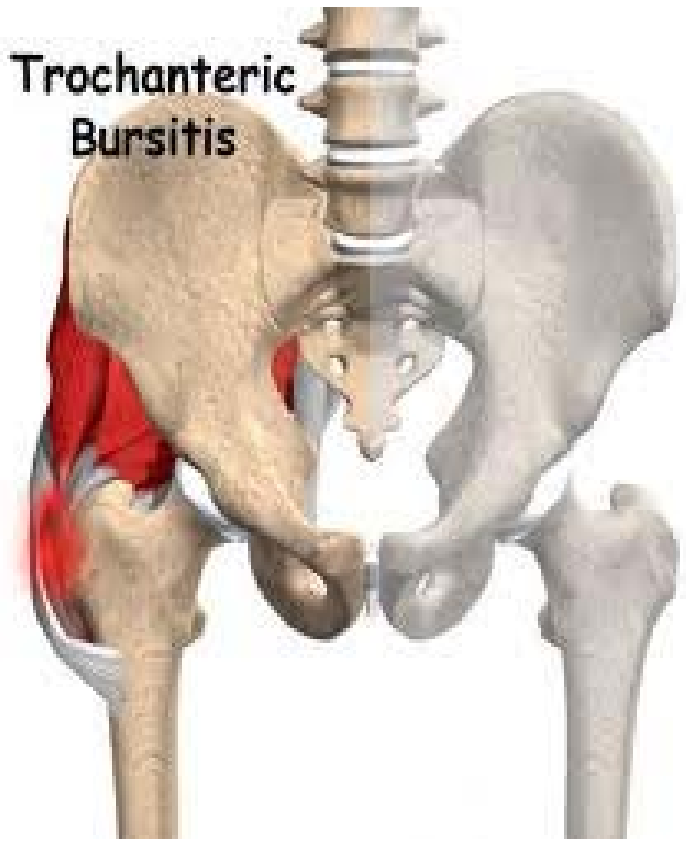


Treatment:

- Surgery - arthroscope
- Strengthening of gluteal and pelvic stabilising muscles

Trochanteric Bursitis/Gluteal Tendinopathy

- Trochanteric bursitis and Gluteus Tendinopathy/enthesopathy often co-exist
- Cause:
  - Weakness of pelvic stabilising muscles
  - Excessive tightness of gluteal, TFL muscles
  - Leg length discrepancy



Trochanteric Bursitis/Gluteal Tendinopathy

Presentation:

- Pain in the lateral hip which may radiate down the lateral thigh
- Aggravated with:
  - Prolonged sitting
  - Lying on it in bed
  - Stairs

Examination:

- Tenderness posterior and superior to greater trochanter
- Pain with stretching the gluteal tendons

Trochanteric Bursitis/Gluteal Tendinopathy

Investigations:

- Ultrasound
- MRI

Treatment:

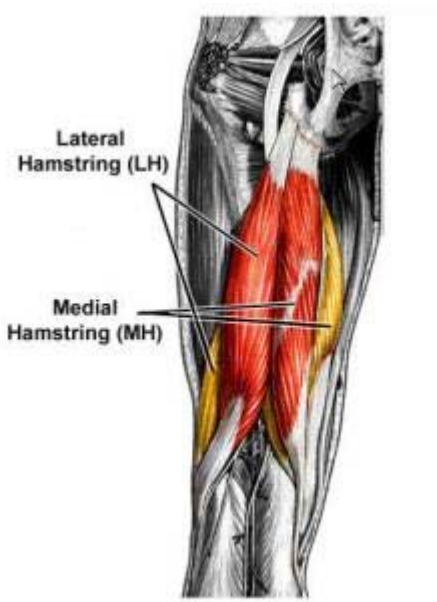
- Rest, massage, NSAIDs
- Corticosteroid inj into Bursa
- Strengthening of gluteal and pelvic stabilising muscles
- If moderate tendinopathy – autologous blood injections

Buttock Pain

1. Hamstring Tendinopathy
2. Referred from Lumbar Spine

Hamstring Tendinopathy

- May occur near the ischial tuberosity after an inadequately treated tear or more commonly as a result of overuse
- Occurs either at:
  - the attachment site
  - Within the tendon
  - Musculotendinous junction



Hamstring Tendinopathy

Clinical:

- Usually insidious onset of buttock pain aggravated by running, stairs and prolonged sitting

Examination:

- Localised tenderness
- Pain on passive stretch or resisted contraction of the hamstring

Investigation:

- Ultrasound or MRI

Treatment:

- Rest, massage
- Physiotherapy – strengthening of core and pelvic stabilising muscles, eccentric strengthening of the hamstring
- Autologous Blood Injections

Lumbar-related Buttock Pain

- May or may not be back pain
- Us referred from either the disc or facet joint

Lumbar-related Buttock Pain

Presentation:

- Diffuse buttock pain often aggravated with prolonged sitting

Examination:

- Lumbrosacral stiffness or tenderness
- Positive slump
- Painfree hamstring stretch or resisted hamstring contraction

Investigation:

- MRI

Lumbar-related Buttock Pain

Treatment:

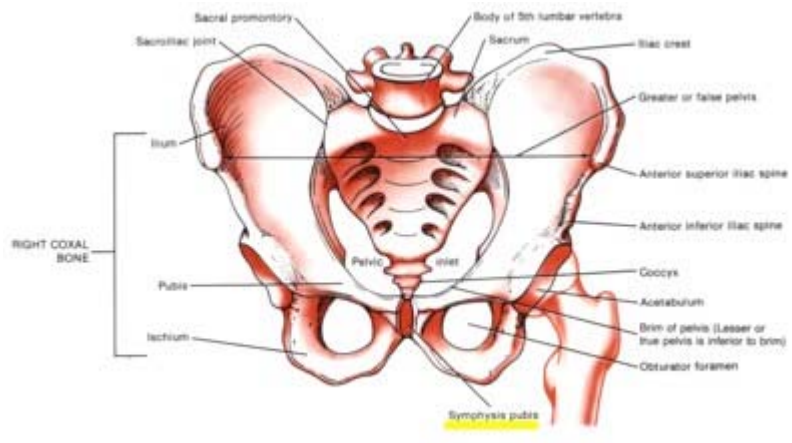
- Physiotherapy – lumbrosacral mobilisation, soft tissue therapy progressing to strengthening of core muscles
- NSAIDS
- CT guided nerve root or facet joint injections

Osteitis Pubis

- Inflammation of pubic symphysis
- Rarely isolated – us assoc with:
  - Adductor tendinopathy &/or
  - Rectus Abdominus tendinopathy

Often with underlying:

- FAI
- Pelvic Instability



Osteitis Pubis

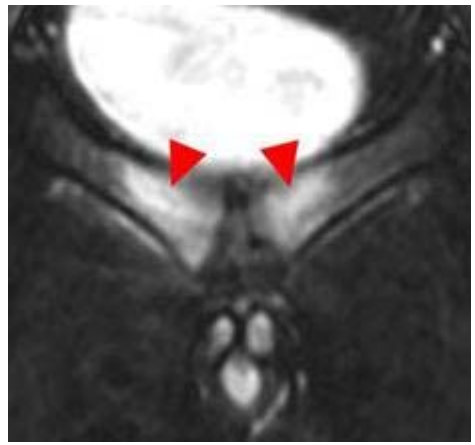
Presentation:

- Activity related unilateral or bilateral groin pain

Examination:

- Tenderness of pubis symphysis and pubic bone
- Often with:
  - Tenderness at the adductor tubercle
  - Superior pubis – insertion of rectus abdominis
  - Generalised muscle tightness – iliopsoas, adductor, rectus abdominus
- Positive Squeeze Test
- Lumbopelvic weakness

Osteitis Pubis



Investigations:

- MRI – gold standard
- Bonescan – may be negative

Treatment:

- Rest
- Massage
- Strengthening of lumbopelvic muscles
- Corticosteroid – pubic symphysis, adductor tendon sheath
- Prolotherapy
- Surgery
- Graduated return to sport when painfree

Knee

1. Patellofemoral Inflammation
2. Patella tendinopathy
3. Fat Pad Inflammation

Patellofemoral Inflammation

= inflammation bw the patella & underlying femur

- Us associated with maltracking of the patella within the femoral trochlea
- Possible Contributing factors:
  - Weak gluteal muscles
  - Weak VMO muscle
  - Tight VL, ITB and lateral structures
  - Pronation

Patellofemoral Inflammation

Presentation:

- Anterior knee pain often aggravated by:
  - Prolonged sitting
  - Walking downstairs or hills
  - running
- Occasional swelling

Examination:

- Tenderness underneath the patella
- Lat tracking patella
- Signs of underlying cause

Patellofemoral Inflammation

Investigations:

- Us not required, but if not settling MRI

Treatment:

- Rest, NSAIDs
- Correction of underlying cause:
  - Physiotherapy – strengthening of gluteal and vmo muscles, stretching ITB and gluteal muscles
  - Podiatry – assessment and correction of biomechanics and footwear

Patella Tendinopathy

= inflammation and degeneration of the patella tendon

*patella = pulley bone within quadriceps tendon to give power on knee extension

*most common site is at the attachment of the patella tendon to the inf pole of the patella

*commonly seen in jumping sports, and sports requiring rapid changes in direction

Patella Tendinopathy

Presentation:

- Anterior knee pain aggravated by running, jumping, bounding

Examination:

- Tenderness localised to the inferior pole of the patella
- Pain with a deep lunge or jumping

Investigations:

- Ultrasound or MRI

Patella Tendinopathy

Treatment:

- Rest, Ice, NSAIDs
- Massage
- Strengthening of gluteal and VMO muscles, progressing to eccentric loading of the tendon
- Corticosteroid injection administered by injection or ionophoresis
- Autologous Blood Injections
- Surgery – only after failure of conservative management

ITB Bursitis/Friction Syndrome

- Occurs as a results of friction between the ITB & underlying lateral femoral epicondyle
- Us occurs in runners and cyclists – 2’ to repetitive knee flexion
- Associated with weak gluteal muscles

ITB Bursitis/Friction Syndrome

Presentation:

- Ache over the lateral knee aggrav by running
- Pain us comes on at the same distance

Examination:

- Tenderness over the lateral epicondyle of the femur
- Repeated flex/ext of the knee reproduces the pain

Investigations:

*if required

- US or MRI – thickening of the ITB over the lateral femoral condyle often with an assoc collection of fluid

ITB Bursitis/Friction Syndrome

Treatment:

- Rest, NSAIDs, ice
- Massage and Stretching – ITB & Gluteal Muscles
- Corticosteroid injection into the ITB bursa
- Strengthening of the Gluteal and VMO muscles
- Correction of biomechanical abnormalities – podiatrist
- Surgery – excise bursa & release ITB if failure of conservative management

Shin/Calf Pain

1. Shin Splints
2. Stress Fracture
3. Chronic Exertional Compartment Syndrome

Tibial Tenoperiostitis (Shin Splints)

= inflammatory, traction associated pain on the medial aspect of the leg esp in running sports

- Contributing factors:
  - Excessive pronation
  - Muscle weakness – calves, gluteal
  - Incorrect shoes
  - Increased load
  - Inappropriate running surface – hard, uneven

Tibial Tenoperiostitis (Shin Splints)

Presentation:

- Diffuse pain along the medical border of the tibia which us warms up, but aches after

Examination:

- Diffuse tenderness & thickening along the posteromedial border of the tibia
- Often assoc calf tightness
- Assoc muscle weakness – gluteal, calf

Investigations:

- Xray – nad
- Bonescan/MRI – diffuse increase in activity

Tibial Tenoperiostitis (Shin Splints)

Treatment:

- Rest, ice, NSAIDs
- Cross train – swim, bike, pool run
- Massage – calf muscles, periosteal border
- Physiotherapy – strengthen gluteal, calf muscles etc
- Podiatry – assessment & correction of biomechanics & footwear
- Graduated return to activity

Chronic Exertional Compartment Syndrome

- Defined as in increased pressure within a closed fibro-osseous space causing reduced blood flow leading to ischaemic pain
- Thought repetitive overuse may lead to fibrosis & reduced elasticity of the fascia surrounding the muscles – leading to an inability for the muscle to expand with exercise

Chronic Exertional Compartment Syndrome

Presentation:

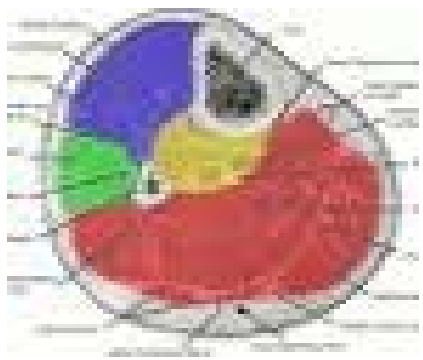
- Increasing pain and tightness with exercise us dissipating within mins of ceasing (maybe achey for up to 30 min)
- If moderate-severe paraesthesiae or motor weakness with exertion
- Painfree at rest

Examination:

- At Rest – unremarkable
- With Exertion – palpable tenseness within the muscle compartment

Chronic Exertional Compartment Syndrome

- Compartments involved:
  - Anterior
    - Anterolateral pain
  - Lateral
    - Lateral pain often with paraesthesiaes on dorsum of foot (sup peroneal n)
  - Deep Posterior
    - Posteromedial pain



Chronic Exertional Compartment Syndrome

Investigations:

- Intracompartmental pressure measurements – assess peak pressure and time to recovery (N <10 mmHg, Pos >25mmg Hg)

Treatment:

- Mild – Mod: deep massage, correction of biomechanical abnormalities
- Mod – severe: surgical release – fasciotomy +/- fasciectomy (80-90% success rate)

Achilles Tendinopathy

= thickest & strongest tendon in body

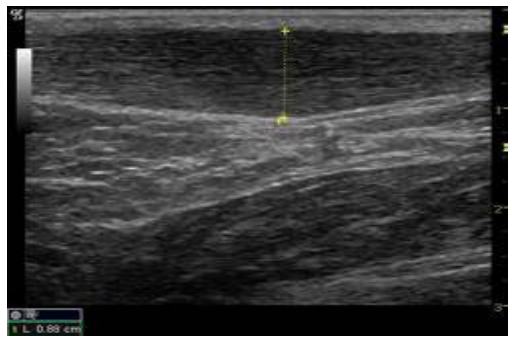
*combined tendon of gastrocnemius & soleus

Achilles Tendinopathy

- 2 main sites:
  - Mid body
  - Insertional
- Cause: increased training volume or intensity
- DDx:
  - Achilles bursitis (bw achilles insertion & skin)
  - Retrocalcaneal bursitis (bw post calc & achilles insertion)

Achilles Tendinopathy

- Presentation:
  - Post heel pain & stiffness in am & post activity
  - Pain init warms up but aches after activity
- Examination:
  - Swollen/thickened achilles
  - Pain with heel raise or hop
  - Often pronated, tight calves etc



- Investigations:
  - US or MRI – abnormal signal in tendon, often with partial tearing
  - Doppler US – assess degree of abnorm vascularity ?sclerotherapy

Achilles Tendinopathy

**Treatment – important to differentiate bw mid achilles and insertional achilles tendinopathy

1. Mid Achilles:

- Correct causes – podiatrist, massage, ice, stretching
- Physiotherapy – heel drop program
- Sclerosing injections – if considerable neovascularisation
- Autologous blood injections
- Other – GTN, ESWT, csi

Achilles Tendinopathy

2. Insertional:

- Us coexist with: retrocalcaneal bursitis & Haglund's Deformity (prominence of psoterolat calcaneum)
- Prominence of the calcaneum predisposes to mechanical irritation of the bursa & tendon
- Furthermore – strain on the tendon insertion with dorsiflexion

Achilles Tendinopathy

2. Insertional

- Treatment:

- Must treat all 3 contributing factors:
  - RC bursitis – NSAIDs, csi, silicone heel sleeves, remove heel counters
  - Achilles - ?sclerotherapy ?ABI
  - Haglunds deformity

  *Often requires surgery

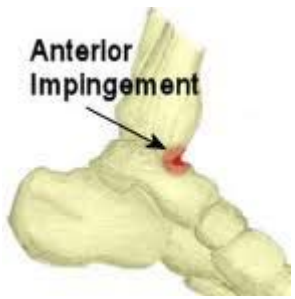
Ankle

1. Impingement – Anterior and Posterior
2. Peroneal Tendinopathy
3. Tibialis Posterior Tendinopathy

Anterior Ankle Impingement

= additional soft or bony tissue is trapped between the tibia and talus during dorsiflexion

- Causes:
  - Exostoses on ant rim of tibia & upper ant surface of neck of talus due to repetitive extreme dorsiflexion (osseuos impingement)
  - Ligamentous injuries following inversion injuries – imp of damaged ligament fibres



Anterior Ankle Impingement

- Presentation:
  - Ant ankle pain worse with activity – esp running, stairs, kicking
  - Stiffness
- Examination:
  - Tenderness – ant ankle joint
  - Restricted dorsiflexion
  - Lunge – ant pain
- Investigations:
  - Xray – exostoses, and lunge Xrays – bony impingement

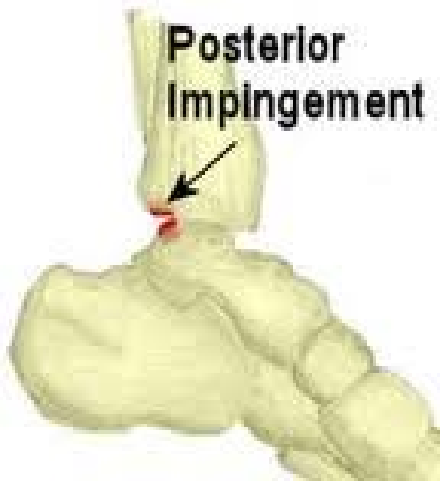
Anterior Ankle Impingement

- Treatment:
  - Rest, heel lift, NSAIDS
  - Physiotherapy
  - Podiatry ?taping ?orthotics
  - Csi
  - Surgery - arthroscope

Posterior Ankle Impingement

= impingement of post talus by the post tibia in plantarflexion

- often an associated and enlarged posterior talar tubercle or an os trigonum is present

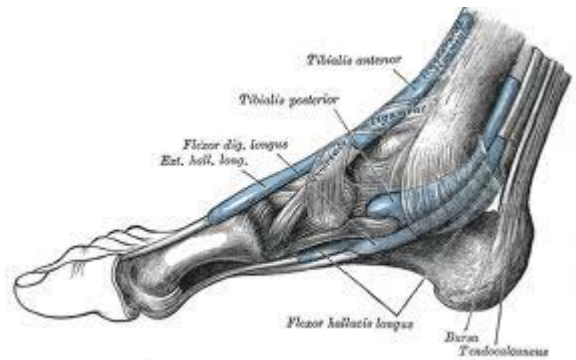


Posterior Ankle Impingement

- Presentation:
  - Pain & tenderness at post aspect of ankle with pos post impingement test
- Investigation:
  - Xray
- Treatment:
  - Rest, NSAIDs
  - Corticosteroid injection
  - Surgery – often requires debridement & removal of os trigonum

Tibialis Posterior Tendinopathy

= inverts the subtalar joint & is the main stabiliser of the hindfoot. Also maintains the arch



- Causes:
  - Overuse
  - Occas traumatic
  - Inflammatory – RhA, seroneg arthropathies

Tibialis Posterior Tendinopathy

- Presentation:
  - Medial ankle/foot pain – often worse in am and warms up, but as severity increases becomes worse with activity
  - Occas swelling
- Examination:
  - Tenderness along tendon esp post and inf to med malleolus
  - Resisted inversion – pain and weakness
  - Single Heel Raise (from behind) – lack of inversion of hind foot

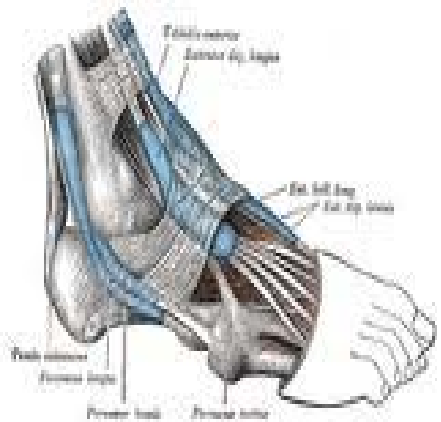
Tibialis Posterior Tendinopathy

- Investigations:
  - MRI or US – MRI most sensitive
  - Bloods – if suspect an inflammatory tenosynovitis – serological and inflam markers
- Treatment:
  - Mild – ice, rest, podiatry, physiotherapy – init electrotherapy and later strengthening
  - Mod – immobilise in cam walker then as for mild
  - Severe: surgical reconstruction often required

Peroneal Tendinopathy

*Either peroneal longus, brevis or both

*Primary evertors and dorsiflex the ankle



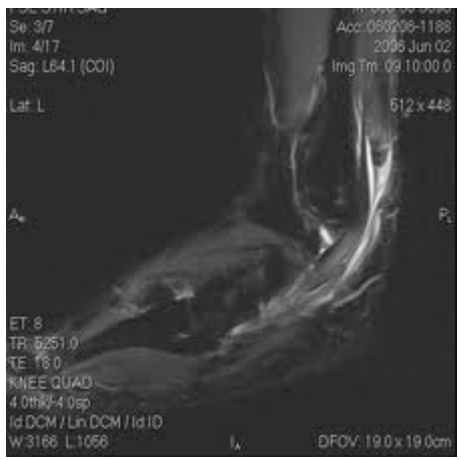
- <u>Causes</u>:
  - Traumatic – post ankle inversion injury
  - Overuse:
    - Excessive eversion – running on slopes
    - Excessive pronation
    - Soft footwear
    - Tight ankle plantarflexors (soleus) increasing the load on the peroneals
  - Inflammatory

Peroneal Tendinopathy

- Presentation:
  - Lateral ankle or heel pain aggrav with activity
- Examination:
  - Local tenderness over the peroneal tendons
  - Painful passive inversion & resisted eversion
  - Often xs pronation or stiff subtalar joint
- Investigations:
  - MRI or US – MRI gold standard
  - Blood tests – if suspect inflammatory arthropathy

Peroneal Tendinopathy

- Treatment:
  - Mild – ice, rest, podiatry, physiotherapy – init electrotherapy and later strengthening
  - Mod – immobilise in cam walker then as for mild
  - Severe: surgical reconstruction often required



Plantar Fascitis

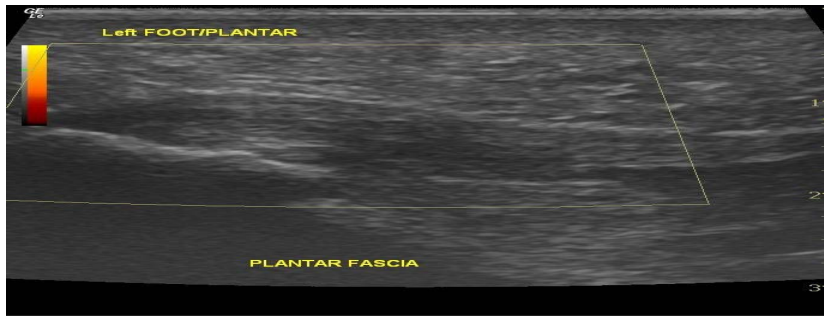
= overuse condition of the pl fascia at its attachment to the calcaneus

- Causes:
  - Pes cavus (high arches) or Pes planus (flat) – increased strain on pl fascia as it tries to maintain a stable arch during gait (planus) or inability to evert the heel to absorb the shock (cavus)
  - Inappropriate footwear
  - Activities involving max plantarflexion with simultaneous dorsiflexion of 1st mtp joint – dancing, running
  - Tight calves, hamstrings etc

Plantar Fascitis

- Presentation:
  - Medial heel pain & stiffness that init warms up, but aches post activity
  - Morning and post rest stiffness
  - As worsens – pain increases with wt bearing
- Examination:
  - Localised tenderness at med calcaneal tuberosity
  - Tight pl fascia with pain with stretching
  - Assoc – supination, pronation, muscle tightness

Plantar Fascitis



- Investigations:
  - US – swelling of pl fascia =/- microtears
  - Xray – not necessary – may reveal spurs, but spurs DO NOT cause pain
- Treatment:
  - Rest, ice, NSAIDs, massage – ball, frozen bottle
  - Corticosteroid injection
  - Podiatry – biomechanical correction
  - Other: ESWT, night splints etc
  - Surgery – endoscopic pl fascia release

QUESTIONS: