A Diagnostic Approach to the Acutely Painful knee

Differential Diagnosis – Acute Trauma

- Patellar dislocation
- Fracture (osteochondral, tibial plateau)
- Collateral ligament injury
- Cruciate ligament injury
- Meniscal injury
- Patellar tendon/quads tendon injury

History

- Remember that pattern recognition is the name of the game
- The history often gives you a good idea of what you will find on examination
- Mechanism
  - Tackle
  - Twisting
  - Pivoting
- Swelling – when?
- Pain – where, severity
- Locking
- Instability episodes

Examination

- Observe
  - Gait
  - Stance (locked?)
  - Swelling
  - Scars
  - (Squat)
- Passive ROM
  - Recurvatum
  - Flexion
- Palpation
  - Effusion
  - Joint line, ligs (system)
  - Anterior knee
- Ligaments
  - Lachman
  - Collaterals (LA?)
  - PCL
- Meniscal provocation

Investigation

- Aspiration
  - Haemarthrosis – think ACL
  - Fat = fracture
  - May be therapeutic
- Plain XR
  - AP, notch, lateral, skyline
  - Tibial spine, Segond, patella, osteochondral
- CT
  - Bony pathology – eg, tibial plateau #
- MRI
  - Bone bruises
  - Chondral lesions
  - Menisci
  - Ligaments

A Diagnostic Approach to the Gradually Painful and/or Swollen Knee

Differential Diagnosis - Adolescents/Young Adults

- Patellofemoral pain syndrome
- Osgood-Schlatters disease
- Patellar tendinopathy
- Meniscal tear
- Ilio-tibial band friction syndrome
- Osteochondritis dissecans
- Inflammatory arthritis
- Referred (hip – SUFE)
- Red flags (infection, tumours)

Differential Diagnosis - Senior (!) Adults

- Osteoarthritis
- Degenerative meniscal cleavage tear
- Patellofemoral pain syndrome
- Patellar tendinopathy
- Ilio-tibial band friction syndrome
- Inflammatory arthritis
- Referred (hip – OA)
- Red flags (infection, tumours)

History

- Where is the pain?
  - Anterior
  - Medial
  - Lateral
- When is the pain?
  - Stairs
  - Sitting
  - During/after activity
  - Twisting/turning
  - Night pain (esp medial)
- Swelling
  - Generalised
  - Anterior
  - Lateral
- Locking/catching
- Instability
- Past history
  - Trauma
  - Surgery
  - Medical

Examination

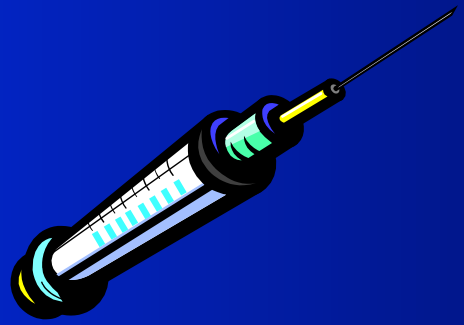
- Observe
  - Gait (inc feet)
  - Stance (varus/valgus)
  - Swelling
  - Quads
  - Scars
  - Squat (single leg/duck walk)
- Passive ROM
  - Recurvatum
  - Flexion
- Palpation
  - Effusion
  - Joint line (inc cyst)
  - Anterior knee (patella and tendon)
- Meniscal provocation
- ITB (palpate and provoke)
- Ligaments
- Do you need to examine the hip?

Investigation

- Plain XR
  - AP, notch, lateral, skyline, Rosenberg
  - Joint space, osteophyte osteochondral lesions
- Aspiration
  - Microscopy – crystals, cells and bugs
  - Culture and sensitiivity
- Bloods
  - CBC, ESR, CRP
  - RhF, ANA
  - UA
- Bone scan
  - Inflammatory/degen arthritis, malignancy
- MRI
- (Hip)

Knee Aspiration and Injection

- Protect couch
- Prepare
  - 2ml LA (23g)
  - 20ml with 19g
  - Sample container
  - (Steroid)
- Mark supero-lateral corner of patella
- Prep skin



- Infiltrate to capsule (test aspiration)
- Aspirate (same track)
- Always M, C & S (label the sample!)
- (Instill steroid)
- Make good notes
  - No touch technique
  - Side effects warning

Take Home Messages

- Always look for the pattern
- Non contact pivoting injury plus early swelling = ACL
- Inability to squat, joint line pain with change direction – think meniscus
- Patello-femoral pain is the commonest form of anterior knee pain
- Degenerative disease is common > 35y