Ultrasound of the Hip

Common presentations
- Pain
  - Anterior and/or lateral hip pain
  - Other comorbidities present – complex
- Injury
  - Sports related
  - Older population – fall with no #
- Loss of range of movement/unable to weight bear
  - Effusion – paediatric patients commonly referred

Anatomy
- Iliopsoas tendon
- Anterior hip joint
- Tensor Fascia Latae (TFL)
- Rectus band
- Gluteus Minimus
- Gluteus Medius
- Gluteus Maximus
- Bursae

Iliopsoas tendon
- Origin – Psoas from vertebral bodies of T12, L1-3.
  - Tensor fascia latae & iliacus combine at level of the inguinal ligament.
- Insertion – Lesser trochanter of the femur
  - Strongest hip flexor, integral to standing and walking

Iliopsoas tendon pathology
- Bursitis
  - Largest bursa in body
  - Caused by trauma, RA or overuse
  - Will have some pain on transducer pressure
  - Can be anechoic or complex fluid
  - Haematoma/collections
    - Trauma
    - Post-biopsy
    - Haemorrhage disorders
    - Rare - anticoagulated patients

Snapping hip (Coxa sultans interna)
- Tendon slips medial fibres of iliacus to lie on lesser trochanter of hip
  - Tendon then slips back onto superior pubic ramus when extending or adducting
  - Other causes can be spur on ischial tuberosity or paralabral cyst

Tendinosis
- More common in young athletes, mainly female
  - Closely related to bursitis
  - Hypoechoic thickened tendon
  - Compare with asymptomatic side if unsure

Snapping hip (Coxa sultans interna)
Anterior hip recess

- Effusion
- Thickened synovium
- Hyperaemia of synovium
- Capsule thickening
- Contour of acetabulum
- Any lesions/masses
  when in doubt, compare with other side!

Tensor Fasia Latae (TFL)

- Origin - Anterolateral Anterior Superior Iliac Spine
- Insertion - Iliotibial band of the upper 3rd of the thigh
- Abducts and laterally rotates femur, works with gluteus medius and minimus as a hip stabiliser during extension
- Can be affected by tendinopathy, usually overuse by runners

Iliotibial band (ITB)

- Origin - Iliac crest and proximal tendon fibres of Tensor Fascia Latae
- Insertion - Gerdy's tubercle of the distal tibia
- Extends, abducts and laterally rotates hip
- Stabilises knee during flexion and extension
- Snapping hip (Coxa sultans externa), the ITB snaps over the greater trochanter on flexion/extension

Gluteal tendons

- G.Minus & G. medius
  - Abduct & medially rotate thigh
  - Stabilises midsection, prevents pelvic drop on contralateral side during walking
  - G.Maximus
  - Powerful extensor of hip joint
  - Lateral rotator of hip joint and knee joint
  - lateral rotator of thigh

Gluteal insertions
Greater trochanteric pain syndrome (GTPS)

- Complex disorder, etiology is not well known
  - May be related to myofascial pain
  - Frequently associated with gluteal tendinopathy or ITB dysfunction
- Risk factors
  - Age
  - Obesity
  - Female
  - RA or Gout

Mechanics

- Tension of ITB -> impingement on GT & TFL -> repetitive injury on gluteal tendons and bursae
- Gluteal tendons become tendinopathic
  - Partial thickness tear or calcific tendinosis
  - Full thickness tear: mass at bone surface & may induce dermatitis uncinata
- Bursae may become inflamed and/or contain fluid.

Other pathology

- Morel-Lavallee lesion
  - Depressed injury due to traumatic force
  - Usually appears as an anechoic or hypoechoic collection
  - Can resolve or encapsulate
- Snapping Gluteus maximus
  - Similar to ITB snapping hip
  - Transient synovitis
- Entrapped lateral cutaneous nerve
  - Impingement at the level of the inguinal ligament
  - Can also be injured from surgery for hip replacement
  - Be sure to ask patient if injected before and how many times