Hip Examination

As with all orthopaedic examinations, follows a simple: look, feel, move sequence.

Standing Inspection

- Start with the patient standing ALWAYS
- Ensure adequate exposure
- Always remember to inspect the patient globally as this may give some clues – e.g. do they have a walking stick etc…

- It is often not a bad idea to start by looking at the patients hands, looking for any signs of Heberdens or Bouchards nodes, which may indicate that the patient may have osteoarthritis

- Inspect from the front of the patient looking for any obvious swelling, deformity, skin changes, scars, confirm that the pelvis is level by identifying the ASIS bilaterally with a finger
- Inspect from the side, looking for any kyphosis, paying attention for any scars, as hip operative scars are often postero-lateral
- Inspect from behind, looking at the alignment of the body from the shoulders, noting scoliosis, if the iliac crests are level, any valgus/varus deformity of the knee, ankle alignment, and again noting any scars or obvious skin changes.
- Comment on muscle bulk – particularly gluteal, hamstrings and quads
- Ask the patient to walk looking for any obvious gait deformity – particularly trendelenberg gait, antalgic gait or short leg gait.

- Perform the **Trendelenberg test** at this point. Ask the patient if they are able to stand on one leg without too much trouble. If ok, proceed as follows. You cannot easily tell just by inspection from the front, and it is bad practice to stand behind the patient. Therefore the key, is to place your index fingers on the anterior superior iliac spines bilaterally and then to ask the patient to stand on one leg. You are looking for the pelvis to tilt downwards, towards the leg that is raised. This is abnormal because the hip abductors usually stabilise the pelvis, and this may even lead to slight raising of the pelvis on that side. Therefore, falling on raising a leg implies a positive trendelenberg sign ON THE SIDE THAT IS SUPPORTING THE BODY WEIGHT – not the side with the leg lifted.

Standing palpation

- There is not really much to palpate on the hip examination, and this is much better performed when the patient is lying.

Supine Inspection

- Just another opportunity to really inspect the groin and upper thigh, to make sure that you have not missed anything.
- Look for scars, swelling, skin changes etc.
- Comment on the quadriceps muscle bulk

- As part of inspection you should measure the **True and Apparent leg length**. Using a tape measure, identify the apparent leg length, from a fixed midline point, easiest is the umbilicus, to the medial malleolus. Then measure the true leg lengths measuring from the ASIS to the medial malleolus. If there are normal true lengths but different apparent lengths, this suggests that the problem is with the pelvis, and suggests that the pelvis is tilted. Ensure that the pelvis is level before commencing. If there is an true leg length discrepancy, this suggests bone shortening is present which can be due to neck of femur #, shaft of femur/tibia #, femoral dislocation, avascular necrosis. Also consider developmental problems, such as perthes, developmental dysplasia of the hip, slipped upper femoral epiphysis and even polio infection.

Palpation

- Because the hip joint is deep in the groin, it is difficult to palpate the joint directly.
- Aim to identify any soft tissue swelling and tenderness as best you can
- Palpate along the iliac bone looking for any tenderness
- Palpate the greater trochanter – look at an anatomy text to note the position of this as it is more posterior than you may think
- Palpate the adductor tubercle as there can be adductor tendonitis

- As part of inspection/palpation you should perform **Thomas Test**, which aims to identify fixed flexion deformity. Ask the patient to fully flex both hips and knees, bringing them up to their chest. Place your hand under the patients back, noting that the lumbar lordosis has been obliterated. Holding one leg flexed, then ask the patient to extend the other fully, and the angle between the bed and the femur is the degree of fixed flexion deformity. This is then repeated for the other leg.

Movement

Need to assess active and passive movements of the hip joint.

- Flexion – ask patient what limits their movement if reduced – pain or just wont go – if not pain, then attempt passive movement
- Extension – the patient must be PRONE for this movement (ask examiner if wanting you to attempt this)
- Abduction and Adduction – ensure that you have a hand over the pelvis whilst these movements are performed to identify the true movement at the hip joint as there can be significant compensatory movement of the pelvis
- Internal and external rotation – perform both with the leg extended and flexed. This is a passive movement. Would be good to comment on any crepitus in the knee when performing flexed internal/external rotation if present.

- Assess the power of the hip flexors and extensors.

This concludes examination of the hip joint. You should offer to examine the joint above and below – ie spine and knee, as pain can be referred, or indeed due to deformity at these joints. Also offer to perform neurovascular examination of the lower limb – could be important if considering surgery etc.

You can tell a lot about the patient from just inspection and predict what you may find – for example, noting a scar suggestive of a hip arthroplasty, you can predict that the patient will have a trendelenberg sign on that side due to the lesion of the superior gluteal nerve responsible for the gluteus medius muscle which acts as the abductor of the hip, stabilising the pelvis when standing on one leg, and also that there will be reduced range of movement at that hip.

Most patients at a hip station will have osteoarthritis, and may have scars of previous surgery. Ensure that you are aware of the details of the management of OA:

Conservative:
- weight loss
- exercise

- Occupational therapy
- Physiotherapy

- analgesia – WHO analgesia ladder, starting with paracetamol and **topical** NSAIDS, moving to oral only when severe (new NICE guidelines)
- glucosamine – there is a suggested role for this in reducing pain from OA
- hyaluronic acid injections (more appropriate for knee)

Surgical
- arthroscopic washout and debridement (again more applicable to the knee)
- arthroplasty predominantly
- others more rarely e.g., excision arthroplasty, realignment osteotomy (again more applicable to the knee)