
Evaluation of Posterior Hip Pain

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Hip Pain in the Adult

Various etiologies:

- Traumatic
- Infectious
- Neurovascular
- Degenerative
- Congenital
- Pathologic



Hip Pain

- Complex interaction of both intra-articular and extra-articular pathology causing pain. Origins may be:
 - Capsulolabral
 - Osseous
 - Neurovascular
 - Musculotendinous
 - Pathology involving the lumbar spine

Pain patterns

- Hip pain patterns:
 - Anterior (groin pain) typically intra-articular pathology such as osteoarthritis
 - Lateral (trochanteric pain) typically extra-articular pathology such as trochanteric bursitis
 - Posterior (buttock pain) typically ???
 - Intra-capsular pathology
 - Extra-capsular pathology
 - Emanating from the lumbar spine or SI joint
- Involves a complex interaction between anatomic structures, ROM, and neuromuscular activity

Main differential of posterior hip pain

- Various types of impingement
- Hip-spine syndrome
- Hamstring syndrome or proximal hamstring tendinitis
- Sciatic nerve entrapment
- Pudendal nerve entrapment
- Deep gluteal syndrome
- Piriformis syndrome
- SI joint pain
- Referred pain from the lumbar spine
- GU disorders
- Labral tears
- Osteoarthritis
- Inflammatory arthritis

History

- Understanding the origin of hip pain is key to identifying the pathology and which patients would benefit from a conservative vs a surgical approach to treatment
- Diagnosis involves a complete history, physical exam, and any necessary imaging
- Every hip exam should include a back exam to rule out lumbar spine pathology
 - Any pathology that limits hip extension may emanate from the lumbar spine...
- A proper history should lead you to the diagnosis

History taking

- Should include:
 - Chief concern documented
 - Date of onset
 - Presence or absence of trauma
 - Localization of pain
 - Mechanism of injury
 - Referred pain patterns
 - Severity of pain
 - Aggravating or Alleviating factors
 - Prior surgeries and hardware present
 - Treatments tried thus far

History

Sometimes a history will point you in the right direction:

- If severe hip pain with history of chronic steroid use or alcohol abuse - think osteonecrosis of the hip
- If elderly or frail patient with osteoporosis - think fragility fracture
- If inability to bear weight with a mechanism of injury - think traumatic fracture
- If pain or paresthesias that radiate down the leg past the knee - think lumbar spine pathology

History

Always document sports or hobbies patient is involved in:

- Female ballet dancers or gymnasts can experience hip laxity and instability
- Recent increases in activity may suggest a stress fracture
- Many athletes can suffer from a wide range of hip pathology

Physical exam

- Posterior hip pain typically occurs from extra-articular sources and causes a more global pain distribution
 - Intra-articular pathology typically radiates to the anterior or medial thigh due to the femoral or obturator nerves
 - Difference between hip pain and "C sign"



Physical exam

- Step 1 – rule out lumbar spine pathology:
 - Range of motion
 - Increasing pain with extended or flexed posture
 - Radiating or radicular pain patterns
 - Dermatomal sensory loss
 - Strength testing
 - Straight leg raise test
 - Reflexes

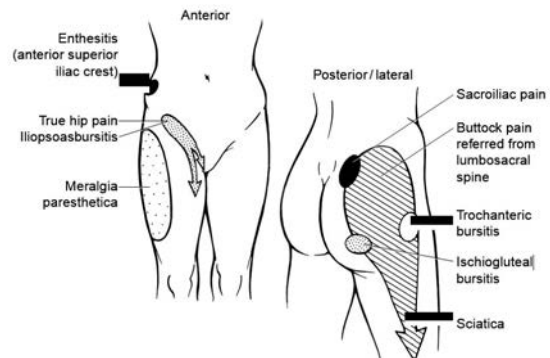


Figure 5. Origins of hip pain.

Physical Exam

- Step 2 – Determine the location of pain:
 - TTP over the greater trochanter suggests trochanteric bursitis
 - TTP over the ischial tuberosity (gluteal crease) suggests ischial bursitis
 - TTP medial to the ischial tuberosity suggests pudendal nerve entrapment
 - TTP posterior or lateral to the ischial tuberosity suggests hamstring tendinitis
 - TTP over the SI joint suggests sacroiliitis

Documenting the patient's localization of the pain is a key finding!

Physical Exam

- Step 3 – Assess gait pattern:
 - Antalgic gait
 - Trendelenburg sign
 - Wide based gait (myelopathy)
 - Long stride walking test
 - Use of assistive devices (and which hand they use it in)
 - Asymmetric shoe wear



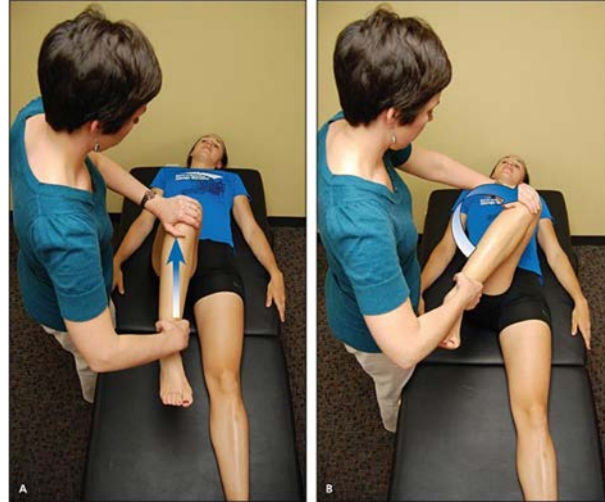
Physical exam

- Step 4 – Assess ROM, strength, and sensation
 - Long tract signs - Babinski and clonus
 - Tension signs
 - Don't forget to rule out claudication symptoms



Physical Exam

- Step 5 – Special testing
 - Log roll
 - FABER and FADIR tests for impingement
 - Hamstring active test
 - Straight leg raise test
 - SI joint tests – Gaenslen, distraction, compression, thigh thrust



Physical Exam

Step 6 - Think outside the box.

If no obvious source of hip pain, then think of spine or SI joint:

- Neurovascular exam
- Pain worsened with lumbar flexion or extension?
- SI joint tests
- Other source of symptoms - gynecologic or urologic



More common posterior hip pathology

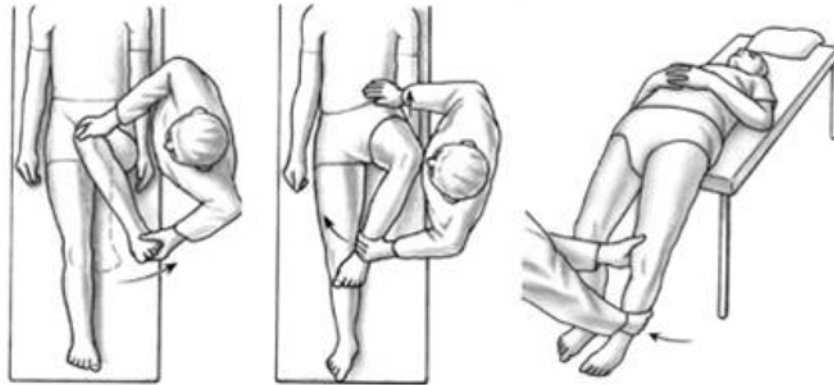
- Lumbar spine pathology
 - With or without radiculopathy
- SI joint pain
- Piriformis syndrome
- Proximal hamstring pathology
- Impingement

Impingement

- When two structures come into contact with each other and cause pain
- Various etiologies of impingement:
 - Sciatic nerve can rub against the greater trochanter as the hip moves into deep flexion, abduction, and external rotation
 - A prominent AIIS or part of the ischium can come into contact with the lesser trochanter or proximal femur and cause pain
 - Various musculotendinous structures can be impinged between bony structures with extremes of motion

Impingement testing

Anterior vs Posterior impingement:

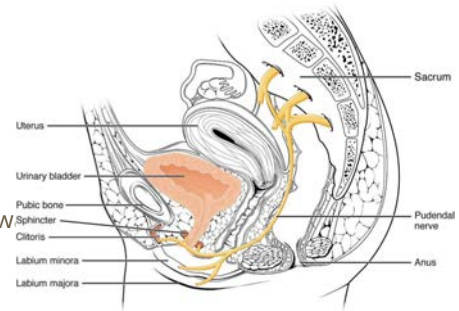


Deep gluteal syndrome

- A syndrome in which the sciatic nerve is entrapped between various structures in the deep gluteal space
- Often presents with a traumatic mechanism of injury
- Pain with prolonged sitting in a balanced position; frequently offloads the affected side during sitting
- May present with sciatica symptoms
 - Pain and/or paresthesias that radiate down the posterior thigh to the knee

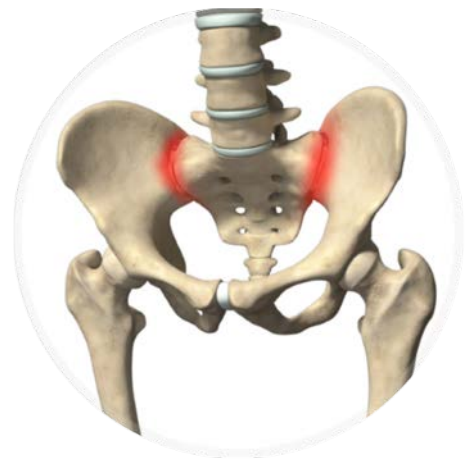
Pudendal nerve entrapment

- TTP medial to the ischial tuberosity
- Worsened with sitting, partially relieved with standing and walking
- May present with pain or paresthesias in the perineum
- Alleviated when sitting on a toilet or pillow
 - patients who ride bicycles for prolonged periods can be affected
- Damage to this nerve may represent a broader syndrome including pelvic floor insufficiency or incontinence



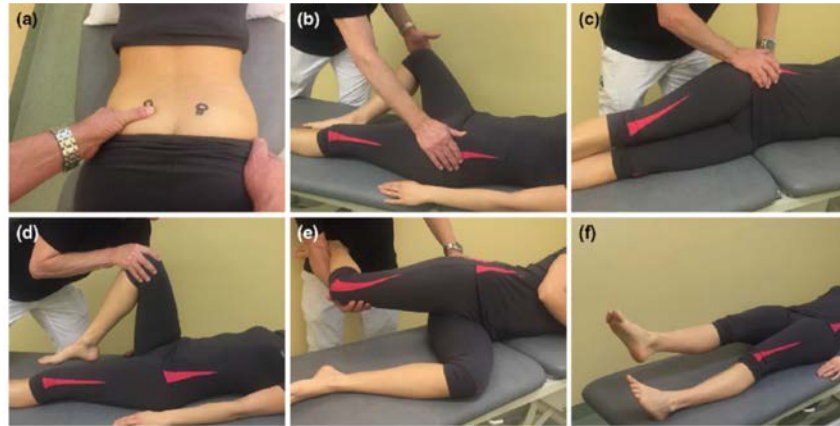
SI Joint pathology

- TTP that is medial and inferior to the PSIS likely emanates from the SI joint and has high sensitivity
- Various etiologies:
 1. Traumatic
 2. Degenerative
 3. Inflammatory
 4. Hypermobility related to pregnancy
 5. Infection



SI Joint pain

Testing:



Proximal hamstring tendinitis

- TTP localized lateral or posterior to the ischial tuberosity
- May have pain or weakness with resisted hip extension and knee flexion

- Hamstring syndrome = irritation of the sciatic nerve due to inflammation and scar tissue associated with hamstring pathology
 - Can present with sciatica symptoms



Piriformis syndrome

- Presents with buttock pain or pain in a sciatic nerve distribution
- Pain is exacerbated by forward bending or heavy lifting
- Gluteal atrophy may be present
- Diagnosis of exclusion



Frierberg test ->

Imaging

1. Xrays

- Good initial imaging modality
- Evidence rating of C by AAFP

2. CT

- Rarely needed except in surgical planning

3. MRI

- High sensitivity and specificity
- Can be used to rule out occult fracture or lumbar spine pathology
- Can demonstrate nerve entrapment

4. Ultrasound

- Becoming more common to diagnose musculoskeletal pathology, especially with more superficial structures

Treatment options

- Pain medication
 - Tylenol, NSAIDs, or trial of corticosteroids
- Physical therapy
 - Home exercises vs formal therapy
 - Mackenzie exercise program for low back pain
- Rest and temporary cessation of aggravating activity
- Other modalities
 - Heat, ice, stretching, OMT, acupuncture, iontophoresis
- Diagnostic lidocaine injections
 - Especially helpful for diagnosing SI joint pain

If no relief, then referral to an Orthopedist is recommended



References

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