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”

![Image of posterior hip pain](image1.png)

![Image of C sign](image2.png)
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

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 or 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

Frieberg 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


