Sports Medicine Lecture: THE HIP EXAM

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Family Medicine Refresher Course
Hip Pain

• Anatomy
• Differential diagnosis based on location of pain
• Focused exam with special testing
• Take home points
Anatomy of the hip

• Ball and socket joint
  • Pelvis, acetabulum, femur
• Acetabulum
  • Lined by fibrocartilage (Labrum)
• Ligaments
  • Stabilization
• Muscles
  • Function
Muscles

- Hip Flexors
  - iliopsoas
  - rectus femoris
  - sartorius
  - pectineus
Muscles

• Hip Extensors
  • gluteus maximus
  • hamstring
Muscles

- Hip Ab/adductors, IR/ER
  - gluteus medius and minimus
  - piriformis
  - obturator externus and internus
  - quadratus femoris
  - adductors
-- May not be from the hip joint! --

- May be from...
  - Groin
  - Lateral thigh
  - Buttock/SI joint
  - Pelvis
  - Lower abdomen
  - Lumbrosacral spine (main nerves of hip originate from LS)
Signs

• Clues to intra-articular hip pain
  – Groin pain with radiation to medial thigh
  – “C-sign”
  – Mechanical clicking
  – Pain with sitting or getting into car
Causes of hip pain

- Anterior/groin pain:
  - arthritis
  - labral tear
  - FAI
  - hernias
  - internal snapping hip

- Lateral hip pain:
  - trochanteric bursitis
  - external snapping hip
  - meralgia paresthetica
Causes of Hip Pain

• Posterior hip pain:
  • piriformis syndrome
  • SI joint
  • referred from lumbar spine
  • Gluteus tendinopathy

• Traumatic:
  • contusion
  • muscle strain
  • fracture
  • dislocation

• Other: tumors, avascular necrosis
How to approach MSK exam

• Inspection
• Palpation
• ROM (Passive and Active)
• Strength testing
• Neurovascular
• Special tests
Inspection

- Posture abnormalities
  - Pelvic asymmetry
  - Leg length discrepancy
- Abnormal hip, knee or foot position
- Muscle atrophy: quadriceps
- Skin changes: erythema, ecchymoses
- Edema: difficult to detect around the hip
Palpation

- Can you reproduce the pain
- Bursa
- Muscles and muscle insertions
- Bones
Normal Hip Range of Motion

• Flexion: 110-120 degrees
• Extension: 10-15 degrees
• Adduction: 20-30 degrees
• Abduction: 30-50 degrees
• External rot: 40-60 deg
• Internal rot: 30-40 deg
Strength Testing

- Hip flexors
  - iliopsoas, rectus femoris

- Hip abductors
  - gluteus medius and minimus

- Hip adductors
  - adductor longus, adductor brevis, adductor magnus, gracilis

- Hip extensors
  - gluteus maximus, hamstrings
Neurovascular

- Pulses
- Sensation
- Deep tendon reflexes
SPECIAL TESTS!
Log Roll

Assess for intra-articular pathology

Pain → intra-articular pathology
Trendelenburg sign

Assess strength and function of abductor muscles

Positive test = weak gluteus medius muscle
The problem is on the side the patient is standing on.
Thomas’ Test

• For hip flexion contracture

Look at leg on the table:
Normal - knee will remain fully extended
Positive - knee will flex
IT band flexibility: Ober

- Lateral recumbant with test side up
- Knee flexed 30 to 90 deg
- Pelvis is stabilized
- Leg lifted into abduction and extension, then allowed to lower to the table

- + if the knee fails to adduct to the table
Hamstring flexibility

- Flex knee and hip to 90 degrees
- Passively extend knee
- Note angle short of full extension

Ideal normal angle is 5-15 deg
Patrick or FABER Test

• **Flexion** – **Abduction** – **External Rotation**

• Put pressure on knee and opposite pelvic brim
  • Pain at hip → impingement
  • Pain in sacroiliac joint
FADIR

- **Flexion** – **ADduction** – **Internal Rotation**

- Pain ➔ anterior impingement
Scour Test

• Assess for labral tear
• Hip and knee flexed to 90 degrees
• Internal and external rotation while placing compressive force on femoral head
• Pain $\rightarrow$ labral tear, articular cartilage defect
McCarthy Test

• Assess for labral tear
• Flex both legs at hip, then extend one leg
• Feeling a catch is positive for labral tear
Fulcrum Test

• Assess for stress fracture
• Patient sitting with legs off table
• Place forearm under mid-thigh
• Exert pressure on distal anterior thigh
• Pain in thigh $\rightarrow$ concern for femoral stress fracture
Take Home Points

• Get a good history
• Assess location of pain
• Watch the patient walk
• Inspect
• Palpate
• Strength and flexibility testing
• Special tests
Questions