Physical Examination of the Hip & Knee

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BUY THIS BOOK!

- Essentials of Musculoskeletal Care
- Written for Primary Care Providers
- Perfect for 3rd & 4th year med students going into primary care

Where is your hip?

- Hip joint pain is most commonly felt in the groin and anterior thigh
- Hip joint pain may radiate to the knee
- Pain over the greater trochanter is typically trochanteric bursitis
- The buttck is not the hip!
- Buttok pain is typically from the sciatic nerve or lumbar spine
Musculoskeletal History

• Where is the pain?
• When did it start?
• How bad is it?
• Does it keep you awake at night?
• What makes it better/worse?
• What treatments have you had and did they work?

Hip Specific History

• How far can you walk?
• Do you use any assistive devices?
• Do you limp?
• Can you tie your shoes, put on your socks, and clip your toenails?
• Do you climb stairs normally or one at a time? Which foot first?
• How long can you sit?
• Do you have pain with the first steps after sitting?

Gait Analysis - Hip

• Abductor Lurch
  – Shoulder shifting gait
  – Moves center of gravity towards affected side to decrease forces across the hip joint
• Trendelenberg Gait
  – Weakness of abductor muscles
  – Pelvis drops away from the affected side
Trendelenberg Test

Negative Trendelenberg  Positive Trendelenberg

Hip Exam

- Palpation
  - Greater trochanter – bursitis
  - Pubic rami – fractures
  - Ischium – fractures, bursitis, sciatic nerve
- Meralgia Parasthetica
  - Numbness over the lateral thigh
  - Compression of the lateral femoral cutaneous nerve

Hip Exam

- Range of Motion
  - Flexion/Extension
  - Internal/External Rotation
  - Abduction/Adduction
- Check in several positions
- Know where the pelvis is!
- Compare with the contralateral side
- Neurovascular exam
Hip Range of Motion

- Flexion
  - Most pts > 90
- Flexion Contracture
  - Maximally flex opposite hip to fix pelvis
  - Thigh will not lie flat on the table

Hip Range of Motion

- Hip Rotation
- Check in several positions:
  - Supine with hip flexed
  - Supine with hip extended
  - Seated
  - Prone (most accurate)

Hip Range of Motion

- External Rotation
- Internal Rotation
- Seated
Hip Range of Motion

Prone

• Palpate ASIS to feel when pelvis begins to rotate

Imaging Studies – Hip

• AP Pelvis
  – Both hips
  – Entire bony pelvis
  – Lumbosacral spine
• Frog Lateral Hip (non-trauma only)
  – Lateral view of proximal femur
• Cross-table Lateral Hip (trauma)
  – Does not require moving the hip
• Do NOT order AP/Lat hip
• Order AP Pelvis & lateral hip
Knee History

- Knee pain stays in the knee
- Hip pain may be felt in the knee
- The knee is more complex than the hip
- More things can hurt in the knee

Knee History

- Mechanism of Injury
  - What exactly happened?
  - Which way did your knee go?
  - Did you hear or feel a pop?
  - Did your knee swell?

- Mechanism can often make the diagnosis
- Pop and immediate swelling almost always ACL

Knee History

- Location
  - Anterior, posterior, medial, lateral
  - Almost every structure in the knee except for the cruciate ligaments can be directly palpated
Knee History

• Instability
  – Most commonly due to pain or quad weakness
  – True instability usually has good history of injury
  – True instability usually occurs with specific activities or motions

Knee History

• Mechanical Symptoms
  – Locking or catching
  – NOT stiffness
  – Something blocks motion of the knee
  – NOT clicking!
  – Everybody’s knee clicks!
• Effusions
  – Intra-articular fluid
  – “Water on the knee”
  – NOT swelling or fat!

Knee Exam

• Observation
• Alignment (standing)
  – Varus/valgus
  – Procurvatum/recurvatum
• Skin
  – Redness
  – Warmth
  – Effusions
  – Lesions/wounds
Gait Analysis - Knee

• Antalgic (painful) Limp
  – Shortened stance phase of gait
• Stiff-knee gait
  – Knee does not bend through gait cycle
• Thrust
  – Varus or valgus bowing with each step
  – “trick knee”

Knee Exam

• Range of motion
  – Active and passive
  – Extensor lag
• Stability
  – Collateral Ligaments – varus/valgus
  – Cruciate Ligaments – Anterior/Posterior
  – Compare to opposite side!
• Stable or unstable? Endpoint?

Knee Exam

• Range of motion
  – Active and passive
  – Extensor lag
  – Extension (0 - -10)
  – Flexion (100 - 150)
Collateral Ligaments

Test collateral ligaments in 20-30 degrees of flexion to isolate the ligaments.

Cruciate Ligaments

- Ant drawer = ACL
- Post drawer = PCL
- Know where starting point is.
- Femoral Condyles are ~1 cm posterior to anterior tibia normally.
Cruciate Ligaments

- Posterior Sag = PCL injury
- Quadriceps Active Drawer
  - Dynamic test for PCL

Knee Exam

- Menisci
  - McMurray’s test
    - Flex/ext with varus/valgus and int/ext rotation
    - Goal is to get torn piece to pop in and out of place
    - Positive if pop or reproduction of pain
  - Apley’s grind test
    - Isolates menisci
    - Prone w/ knee flexed, axial load and rotation
**Knee Exam**

- Patellofemoral Joint
  - Patellar tracking/tilt
    - Should sit horizontally in the trochlear groove and track centrally with ROM
  - Patellar grind & shrug
    - Grind patella into trochlea
    - Contract quads while applying pressure to patella
    - Both will reproduce patellofemoral pain

**Imaging Studies – Knee**

- Radiographs
  - Weight-bearing (Standing) AP
  - Weight-bearing (Standing) AP
  - Weight-bearing (Standing) AP
  - Weight-bearing (Standing) AP
  - Lateral knee
  - Sunrise view

*These are the same knee!*
What about an MRI?

- You probably do not need one!
- Go by the patient's symptoms and your exam
  - Good history for ligament/meniscus injury
  - True mechanical symptoms or instability
  - Positive physical exam findings
  - Normal x-rays (Always get these first!)
- Do not order if significant DJD
- 76% of all pts >45yo will have meniscal changes on MRI. 94% if there is DJD!
- If you want to waste money send me the $2500

Go Examine Yourselves!