Osteopathic Evaluation and Treatment of the Hip

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Low Back Pain: Hip as an etiology

- A common complaint to the primary care office
- One of the top three workman’s comp expenses
- When the pain does not resolve within the first few days or weeks and workup negative patients become:
  - High utilization of office resources
  - At risk for narcotics habituation
  - Strain on physician/patient relationship due to suspicions of malingering
- In these patients consider Hip Pathology as an etiology for the complaints
Anatomy/ Biomechanics

- Medial, posterior and superior
  - loaded via the sacroiliac joint
  - transmits weight from the axial spine
- Medial, anterior and inferior
  - the pubic symphysis point of stabilization
  - does so for both hips
- These points of attachment can affect the angle and rotation of the acetabular fossa
Compartments of the Hip

- Central Compartment
- Lateral Compartment
- Peripheral Compartment

Femur
Compartmental Structures

- **Central**
  - Labrum
  - Ligamentum Teres
  - Articular surfaces

- **Peripheral**
  - Femoral neck
  - Synovial lining

- **Lateral**
  - Gluteus medius
  - Gluteus minimus
  - Iliotibial Band
  - Trochanteric bursae
    - Deep
    - Superficial

- **Psoas**
  - Iliopsoas insertion
  - Iliopsoas Bursae
Central Compartment

- Signs & Symptoms
  - C-sign
    - Pathognomic of Labral pathology
  - Catching, Locking
  - Pain
    - Lumbar Spine
    - Groin/ Medial
    - Pelvic Rim
      - Anterior to Posterior
      - (L5-S1) radicular pattern
    - In the a.m. or after a run
  - Instability
Central Compartment

- **Initial insult**
  - Trauma
    - Traffic accidents
    - Collisions
    - Bad falls
  - Twisting on a hip that has excess weight on it
  - Repetitive strain
    - Golfers
Central Compartment

- **Pathology**
  - Labral tears
  - Ligamentum Teres Disruption
  - Osteochondral defects
  - Chondromalacia/ Osteoarthritis
  - Loose Bodies
Central Compartment

- **Maneuvers**
  - Log Roll
  - Apprehension (FABER)

- **Positive Finding**
  - Pain
  - Pain, Apprehension (FABER)
Central Compartment

- **Maneuvers**
  - Labral Loading
  - Labral Distraction
  - Scour

- **Positive Finding**
  - Pain

- **Relief of pain**
  - Pain
Peripheral Compartment

- Signs & Symptoms
  - Catching/Locking
  - Pain with hip movement
    - Deep Hip
    - Groin
  - Limited range-of-motion
- Congenital
- Injury - trauma
  - Fall
  - MVA
Peripheral Compartment

Impingement
MIXED
Peripheral Compartment

- **Pathology**
  - Loose Bodies
    - “catch”
  - Impingement syndrome
    - Pincer Type (brim of ball cap)
    - CAM Type (gun stock deform)
  - Synovitis
Peripheral Compartment

- **Maneuvers**
  - Log Roll

- **Positive Finding’s**
  - Pain
Peripheral Compartment

**Maneuver**

- Ely’s test
  - Positive Findings: Ipsilateral Hip Flexion

- Rectus Femoris test
  - Positive Findings: Knee Flexion <90°
Lateral Compartment “Rotator Cuff”

- **Signs & Symptoms**
  - **Weakness**-difficult lifting leg to climb stairs
  - **Pain**
    - Lateral hip
    - Pelvic rim
    - Radiating down leg to knee
    - Piriformis “compensation”
      - Sciatic n compression
    - Knee pain
  - **Instability**
Lateral Compartment

- **Injury**
  - Lifting
  - Trauma
  - Overuse

- **Pathology**
  - IT Band Syndrome
  - Bursitis
  - “Rotator cuff” Tendonopathies
    - Gluteus Medius
      - Like supraspinatus
    - Gluteus Minimus
Lateral Compartment

- **Maneuvers**
  - ITB Syndrome
    - Straight Leg
  - Ober's
  - Bursitis
    - Jump sign

- **Positive Finding**
  - Pain (>15deg)
  - Pain, inability to adduct
  - Withdrawal
Lateral Compartment

- **Rotator Cuff Pathology**
  - Piriformis Test
  - Trendelenburg
  - FABER

Pain
Weakness of wt bearing side glut med creates crest drop on lifted leg
Weakness
Illiopsoas Compartment

- Signs & Symptoms
  - Pain
    - Anterior hip
    - Medial Groin
    - Anterior deep thigh

- Injury
  - Hyperextension
    - Jumping
    - Running
  - Overuse
Iliopsoas Compartment

- Pathology
  - Psoas Tendonitis
  - Iliopsoas Bursitis
Iliopsoas Compartment

- **Maneuvers**
  - FABER
  - Psoas test
  - Thomas test

- **Positive finding**
  - Pain anterior medial groin
  - Pain anterior thigh
  - Inability to extend
Compensatory Conditions

- Snapping hip
  - Can be internal or external
    - Internal
      - Psoas “snaps” over femoral head
    - External
      - IT band “snaps” over trochanter
Compensatory Conditions

- **Lumbar**
  - Lumbar Somatic Dysfunction
  - Facet Syndrome

- **Sacrum**
  - Sacral Somatic Dysfunction with Sacral Torsion
  - Sacroillitis

- **Pelvic**
  - Pelvic Somatic Dysfunction
  - Pelvic Instability
  - Psoas Tendonitis
  - Pyriformis syndrome with sciatica

- **Leg**
  - Hamstring Syndrome
  - Illiotibial Band Syndrome
  - Trochanteric Bursitis
<table>
<thead>
<tr>
<th>Test by Compartment</th>
<th>Log Roll</th>
<th>FABER</th>
<th>Labral Loading</th>
<th>Labral Distraction</th>
<th>Scour</th>
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OMT

- **Muscle Energy**
  - Engage a restrictive barrier
  - Isometric contraction (3-5 sec)
  - Post-isometric relaxation
  - Engage new barrier
  - Repeat cycle

- **Myofascial Release (MFR)**
  - Soft tissue tx
  - Direct MFR engages a restrictive barrier
  - Waiting for “tissue creep”
Somatic Dysfunctions of the Hip

- Hip Range Of Motion– ranges for reference only, important to compare symmetry and end-feel to assess for dysfunction
  - Flexion (90 deg knee ext, 120-135 deg knee flex)
  - Extension (20-30 deg)
  - Abduction (40-50 deg)
  - Adduction (20-30 deg)
  - Internal Rotation (35 deg)
  - External Rotation (45 deg)
Somatic Dysfunctions of the Hip

- Hip Extension Dysfunction
  - Restriction to Flexion
  - Hypertonic Hamstrings
    - Muscle Energy Tx – supine w/knee ext
  - Hypertonic Gluteus Maximus
    - Muscle Energy Tx – supine w/knee flex

- Hip Flexion Dysfunction
  - Restriction to Extension
  - Tight Iliopsoas
  - Muscle Energy Tx – can be done supine or prone
Somatic Dysfunctions of the Hip

- **Hip Abduction Dysfunction**
  - Restriction to adduction
  - Fascia Lata/IT band tightness
  - Ober’s test
  - IT band myofascial release
  - Muscle Energy Tx

- **Hip Adduction Dysfunction**
  - Restriction to Abduction
  - Muscle Energy Tx
Somatic Dysfunctions of the Hip

- **Hip Internal Rotation Dysfunction**
  - Restriction to External Rotation
  - Muscle Energy Tx – can be done supine or prone

- **Hip External Rotation Dysfunction**
  - Restriction to Internal Rotation
  - Muscle Energy Tx – can be done supine or prone
Somatic Dysfunctions of the Hip

- Hip Articulation/Spencer technique
  - Flexion
  - Extension
  - Circumduction - compression
  - Circumduction - traction
  - Internal Rotation
  - External Rotation
  - Abduction
  - Adduction
Somatic Dysfunctions

- SI Joint Restriction to Motion
  - Articulatory technique

- Innominate Dysfunction – Muscle Energy
  - Anterior or Posterior Rotation
  - Superior or Inferior Shear
  - Inflare or Outflare
  - Pubic bone superior or inferior shear
  - Pubic bone abduction or adduction
“Hip” Motion