Hip Pain in the Athlete: A Diagnostic Challenge

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Hip Pain in the Athlete

- Common in all sports, especially with pivoting, cutting, accelerating activities.
- At least 6% of sports injuries, and this rate is increasing.
- **Hip pain is a diagnostic challenge!**
  - Large physical area.
  - Multiple structures with complex biomechanics.
  - Adjacent to non-musculoskeletal structures (pelvis and abdomen).
  - Symptoms and findings can be vague, and conditions can mimic each other.
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Differential Diagnosis

- Adductor strain.
- Other muscle strain.
- Sports hernia.
- Osteitis pubis.
- Femoro-acetabular impingement and labrum pathology.
- Bursitis (trochanter, ischium, psoas).
- Snapping hip.
- Piriformis syndrome.
- Lumbar spine/radiculopathy.
- Peripheral nerve entrapment.
- Referred knee pain.

- Pediatric issues! (SCFE, developmental hip dysplasia, avulsion fractures)
- Adult issues! (UTI, ovarian cyst, ectopic pregnancy)
- Hernia.
- Other abdominal pathology (appendicitis, many others).
- Lymphadenopathy.
- And more!
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General approach

• What sport? Endurance sport or cutting/pivoting sport?
• Acute injury?
• Or insidious onset?
• Where is the pain?

If anterior ...
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Muscle strain

- Hip muscles create athletic movement and force, and also stabilize pelvis during closed chain activity.
- Adductor strains account for 25% of muscle injuries in soccer players.
- Think in basic terms: Hip flexors, adductors, abductors, and extensors.
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Muscle strain

- Swelling, bruising? Maybe.
- Tenderness along muscle/tendon unit.
- Pain with activated or resistance.
- Pain with passive stretch.

- Fairly basic, but ...

- Need to keep other possible diagnoses in mind!
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Sports Hernia

- Also known as athletic pubalgia or core muscle injury.
- Partial injury of common lower abdominal and adductor aponeurosis.
- No bulge or true hernia.
- Fairly common!
- In chronic groin pain, sports hernia is primary source in up to 39% to 85% of cases.
- Insidious onset of adductor pain and lower abdominal pain. May easily mimic adductor strain.
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Sports Hernia

• Tender at body of pubic bone, and typically the lower abdominal wall adjacent to pubic bone.
• Possible adductor tenderness.
• Pain with resisted adduction is to be expected.
• Pain with sit-up/crunch, pain with combined sit-up/crunch and simultaneous resisted adduction, and/or pain with resisted sit-up!

• Resisted sit-up, with stabilized contralateral pelvis and stabilized ipsilateral shoulder.
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Osteitis Pubis

- Non-infectious inflammatory condition of pubic symphysis.
- Etiology not clear, but due to repetitive stress and unbalanced abdominal and hip forces.
- Can cause cartilage breakdown and bony erosions.
- Midline pubic pain.
- Point tender at pubic symphysis. Possible exquisite tenderness.
- Lateral compression test.
- Rest of exam variable, possibly diffusely positive.
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Femoro-acetabular impingement (FAI)

- Cam – Aspherical head.
- Pincer – Acetabular over-coverage.
- Often limits athletic ability, and temporarily improves with rest.
- Pain distribution can vary! In patients who had surgery for impingement:
  - 88% groin pain.
  - 29% anterior pain.
  - 67% lateral pain.
  - 29% buttock pain.
  - 27% knee pain.
  - 23% low back pain.
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Femoro-acetabular impingement (FAI)

**Examination**

- Decreased ROM, typically decreased IR, particularly with flexion past 90°.
- Special tests:
  - FADIR (Flexion, Adduction, Internal Rotation) test:
  - Stinchfield test (resisted hip flexion at 45°):
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Femoro-acetabular impingement (FAI)

**Examination continued**

- Posterior impingement test. The unaffected hip is held in flexion, and the affected side is moved into extension and external rotation.

- McCarthy extension test. The hip is moved from flexion into extension, rotating from ER to IR. Assess for pain.
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Other diagnoses ...
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Apophyseal Avulsion Fractures

- Teenage athlete.
- Sudden pain.
- Often a pop or crack.
- Initial inability to bear weight.
- Initial severe pain.
- Possible dramatic presentation.
- Pain location depends on which apophysis is involved.
- Typically improves fairly substantially within several weeks. Initial treatment is symptom relief, followed by rehab.
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Hip/femur stress fractures

- Distance runners.
- Overuse injury.
- Insidious onset.
- Usually the athlete cannot run through the pain.
- Pain is typically anterior, at groin, thigh, and/or knee.
- Nonspecific exam with variable and often minimal findings, except there usually is a positive hop test!
- Definitive diagnosis made with imaging – possibly on x-ray, usually on MRI.
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Snapping hip syndrome

External (lateral).
• Lateral pain/tenderness.
• Often described as hip coming out of socket.
• Lateral pop or snap as proximal iliotibial band moves over greater trochanter.
• Patient can often voluntarily make the pop occur.

Internal (anterior).
• Anterior (hip flexor) pain, related to iliopsoas tendon passing over bony prominence.
• Variable pain with hip flexor testing.
• Pain/pop with large passive circumduction movements of the hip.
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Thank you!