Athletic Pubalgia:
“In athletes, tremendous torque occurs at the level of the pelvis. The anterior compartment often, but not always, takes the brunt of the forces and contraction of many muscles, especially the rectus abdominis and adductor longus, creates tremendous force and counts as a major factor in this torque. When one muscle weakens, the result is unequal distribution of pelvic forces.”

-William C. Meyers, MD

The Pubic Symphysis:
• Amphiarthrodial joint
• Provides stability to the anterior pelvis with little motion (Minimal rotation (0.5-2.5 degrees) during walking)
• Able to transmit superior/inferior shear forces to the innominate bones evenly
• The pubic rami serve as struts to help distribute forces evenly to the remainder of the innominate bones
• Can be destabilized with ligamentous injury (pregnancy, childbirth) or injury to regional tendinous attachments (rectus abdominis and adductor longus)

• The rectus abdominis and adductor muscles oppose one another
• There is postero-superior direction of force by the rectus abdominis on the pubic symphysis, and antero-inferior force by the adductor muscles

Athletic pubalgia MRI protocol
• Place surface coil over pubic symphysis
• Acquire 3 large field of view sequences of pevis, including hips and SI joints
• Turn on surface coil and acquire 3-4 sequences dedicated to the pubic symphysis region
• Axial oblique sequences prescribed along arcuate line of pelvis

Injury about the pubic symphysis:
• The significance of “the secondary cleft

Osteitis pubis
- Subchondral osseous change spanning the symphysis joint
- Acute, chronic, acute on chronic
- Initially in spectrum of clavicular osteolysis and “SONK”
- Ultimately can become osteoarthritis
- Associated with rectus abdominis / adductor injury

**Adductor compartment injury**
- Many, many variants
- Osseous avulsions to chronic tendinopathies
- Injury at tendon origins or in muscle compartment
- “Baseball pitcher / hockey goalie syndrome” is muscle herniated through epimysium

**Rectus abdominis / adductor aponeurosis injury**
- Injury most commonly called “sports hernia” or “sportsman’s hernia”
- Confluent injury spanning caudal rectus abdominis and ipsilateral adductor longus origin
- Can be “peel back” like detachment or frank tear
- When involving lateral edge, leaves patulous superficial inguinal ring
- Often becomes chronic, debilitating injury requiring surgery

**Rectus abdominis / adductor aponeurotic plate disruption**
- Midline detachment of bilateral caudal rectus abdominis pubic attachments
- Arcuate ligament of pubic symphysis inherently injured
- Pelvic floor repair should be bilateral

Postoperative athletic pubalgia considerations
- With unilateral pelvic floor repair, 4% chance of contralateral injury
- Most common postop source of pain: adductor compartment myotendinous junction strain
- Postop hematoma in adductor compartment common
- 3T can be helpful in distinguishing granulation tissue secondary cleft from retear
- Look for mesh an localize with regard to injury

Confounders for athletic pubalgia lesions
- **Osseous pathology**
  - Stress fractures
  - Growth plates
  - Bony lesions (OO, EG)
- **Intraperitoneal pathology**
  - Adnexal lesions
  - Endometriosis / fibroids
  - IBD
- **Arthritidies**
  - Sacroiliitis
  - Primary synovial processes
- **Distant muscle strain / tendinopathy**
MRI of Athletic Pubalgia in 2010

Conclusions

- Use dedicated pubalgia MRI protocol
- Recognize patterns including osteitis pubis, adductor injury and rectus abdominis / adductor aponeurosis lesions
- Look for midline and bilateral lesions
  - Consider 3T protocol in postoperative setting
- Be aware of typical postoperative sources of pubalgia
- Watch for confounding sources of groin pain