

## **Athletic pubalgia: Core injuries**

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## **Syllabus abstract:**

**Background/Anatomy:** Clinical presentation of athletes with pain in the groin or pubic region is called athletic pubalgia. One of the main causes of athletic pubalgia is an injury to the two largest core muscles, the rectus abdominis and adductor longus. The rectus abdominis muscle is contiguous with the adductor longus muscle (see Fig. a) and both share a common aponeurosis overlying the pubic bone, the so called “rectus abdominis-adductor aponeurosis”.

**Detachment of the aponeurosis:** The anterior detachment of the aponeurosis (which then lifts off the pubic bone and creates a gap, Fig. b, c, d) was formerly misinterpreted as “sports hernia”. Today, the general term “core muscle injury” is used which is then specified as “detachment of the aponeurosis”. The detachment can also extend further distal as a tear into the adductor longus origin or proximal into the rectus abdominis muscle.

**Osteitis pubis:** The aponeurosis detachment leads to instability of the biomechanical forces at the pubic symphysis causing secondary osteitis pubis with reactive, painful bone marrow edema. Other indirect signs of the aponeurosis detachment are atrophy of the rectus abdominis muscle bulk.

**Imaging protocol:** The two most important imaging planes to diagnose the detachment are the axial oblique plane perpendicular to the aponeurosis (see Fig. b) and the sagittal plane.

**Differential diagnosis** for athletic pubalgia: Hip pathology especially labral tears; other muscle and tendon pathology at the pelvis, especially iliopsoas bursitis, rectus femoris strains; true inguinal hernias; sacroiliitis; transitional vertebral body anatomy; pelvic visceral pathology, e.g. adnexal cysts, endometriosis.

**Treatment:** Dedicated core muscle strengthening program with physical therapy; Ultrasound guided percutaneous tenotomy/dry needling of the aponeurosis and adductor origin; surgical repair of the detachment and surgical strengthening/enhancement of the pelvic floor and core musculature.

**Treatment response on follow-up imaging:** Substantial improvement of the osteitis pubis on MRI is as a marker of restored stability at the core and pubic symphysis; aponeurosis detachment heals and fills with granulation tissue on MRI.

