

Anterior Thigh Pain in a Division I Football Player.

Madaleno JA, Mattacola CG, Allen JR. Department of Athletics, College of Allied Health Professions, University of Kentucky, Lexington, KY

Personal Data/Medial History

The athlete is a 6' 1", 200 lb, 21 year old Division I collegiate football player who is an outside linebacker. The athlete reported the day after a game with anterior thigh pain which was exacerbated with knee joint flexion. The athlete reported no previous injury to the quadriceps.

Physical signs and symptoms

The athlete reported the mechanism of injury as a direct contact to the left quadriceps that occurred during the athletic event but did not limit play. Symptoms 24 hours after the injury included moderate swelling of the lateral mid-third of the left thigh. Initial examination revealed 120 deg of flexion. No palpable mass was present and the athlete was placed on crutches (NWB).

Differential diagnosis

Quadriceps contusion

Femoral nerve injury

Compartment syndrome

Myositis ossificans

Periosteal osteosarcoma

Synovial sarcoma

Results of diagnostic imaging/laboratory tests

X-rays 9 days post-injury confirmed no ossification within the anterior compartments.

Twelve days post-injury, blood work revealed that serum calcium and CBC were normal.

Twenty-three days post-injury knee joint ROM was 100 deg and x-ray revealed early appearance of ossification within the quadriceps and onset of myositis ossificans. At 2 months post-injury x-ray revealed advanced myositis ossificans.

Clinical course

The athlete was diagnosed with a grade one quadriceps contusion. Treatment included cryotherapy with compression. Crutches were supplied and the athlete was instructed to maintain a position of knee flexion and ambulate in a non-weight bearing position. Over-the-counter NSAIDS were initiated 24 hours post-injury. At 48 hours post-injury the athlete was partial weight bearing and at 72 hours the athlete was full weight bearing.

The athlete was evaluated by an orthopaedic surgeon at this time and allowed to progress and return to function as tolerated. Five days post-injury the athlete had 133 deg of knee flexion, minimal pain, decreased swelling and was able to participate in running drills.

The athlete was returned to competition and played in the first quarter but was ineffective. The athlete suffered no direct trauma.

Deviation from the expected

Two days following the competition and 9 days post-injury, motion was decreased to 120 deg knee flexion. X-ray examination revealed no ossification within the anterior compartment. NSAID (600 mg b.i.d.) were prescribed. The athlete was given a strict home program as he left for Thanksgiving weekend. The athlete was weight bearing and the physician prescribed no contact for 2 weeks in fear of the injury becoming a chronic problem. Upon return from thanksgiving, swelling had increased and ROM decreased (110 deg knee flexion). A review of the literature revealed that it is uncommon for myositis to develop when knee range of motion is greater than 120 deg at initial evaluation. Therefore, our study represents an occurrence whereas knee flexion of greater than or equal to 120 degrees resulted in a case of myositis ossificans. In addition, during compilation and verification of data for this abstract, it was brought to our attention by the athlete that he had received, unbeknownst to us, massage therapy to the affected area during Thanksgiving break by his girlfriend. Therefore, it is recommended that clinical staff proactively reinforce that no additional treatments should be performed prior to releasing an athlete for home therapy.