Patellar Tendonitis

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The quadriceps muscle is a hip flexor and lower leg extensor. [pic 1] It becomes strained, damaged and weakened through activities such as squatting, running, jumping and climbing. The patient with patellar tendonitis complaints of knee pain just below the kneecap and/or on the tibial tuberosity when kneeling. The onset of pain is typically acute but may have a gradual progression.

It is commonly seen in adolescent athletes that have begun to participate in higher levels of activities such as track, basketball and soccer. Usually these young people have gone from playing on the playground to signing up for a new sport, training with a coach and competing against other skilled athletes. They begin to repeat sport specific movements for a longer duration and with more intensity. This tends to cause more wear and tear on the muscles and tendons and with less recovery time than their bodies are used to functioning.

Diagnosis

Evaluate knee range of motion bilaterally by having the patient squat fully until their buttocks touch the heels or are as closely approximated as possible. Limitations and pain during squats can be caused by ankle stiffness, patellar tendon dysfunction or excess muscle tension in the quadriceps, hamstrings and calves. Muscle test bilaterally and note the deficiency of the involved quadriceps.[pic1] To locate the fibers that are most strained, palpate the tendon insertion along the inferior border of the patella and at the tibial tuberosity for the points of maximal tenderness.

Various knee conditions need to be differentiated from patellar tendonitis. Prepatellar bursitis (aka carpet layer's knee, housemaid's knee or nun's knee) is an inflammation at the front of the knee which commonly occurs among individuals whose professions require frequent kneeling. Patellofemoral pain syndrome (runner’s knee) is characterized by pain originating from the contact of the posterior surface of the patella with the femur. Plica occurs when an extension of the synovial capsule of the knee becomes irritated, enlarged, or inflamed.

Treatment

Correcting the patellar tendon can be achieved by pressing the tendon fibers directly into the patella and tibia at the site of maximum tenderness.[pic2] This has been shown to stimulate positive osteoblastic activity which stabilizes the osteotendonous connection.[1] You can also utilize an adjusting instrument to correct the strained tendon fibers by directing the instrument to impulse into the tender fibers.

Post treatment evaluation should note increased strength and range of motion function while decreasing pain.

Rehabilitation

Repeatedly correcting the tendon to strengthen the connection between the bone and tendon fibers promotes faster healing of the injured tissues. I encourage my patients to ice the region first and then press into the tender fibers several times a day.

1) Am J Physiol Cell Physiol. 2007 Jan;292(1):C545-52. Epub 2006 Aug 2.
Mechanically stimulated osteocytes regulate osteoblastic activity via gap junctions.
Taylor AF1, Saunders MM, Shingle DL, Cimbala JM, Zhou Z, Donahue HJ.

[pic1]

[pic 2]