

Achilles Tendinosis

OVERVIEW

Achilles tendinosis is a spectrum of pathology involving the Achilles tendon. It often begins with acute inflammation and over time or with repetitive microtrauma progresses to degenerative changes within the tendon with risk of rupture.

ANATOMY

The Achilles tendon is the largest and strongest tendon in the body. It is a consolidation of the gastrocnemius and soleus and acts to plantarflex the ankle. It inserts broadly over the posterosuperior calcaneal tuberosity and has two bursae; the retrocalcaneal bursa between the Achilles and calcaneus and the tendon bursa between the skin and tendon. There is no true synovial sheath for the tendon, rather it is enclosed in a paratenon with an area of avascularity 2-6cm proximal to the insertion.

BIOMECHANICS

The Achilles tendon undergoes eccentric lengthening to help control dorsiflexion and concentric contraction for plantarflexion of the ankle throughout the gait cycle.

PATHOGENESIS

The early acute inflammation changes are localized to the paratenon. At this time, the tendon is typically normal in appearance but fluid may accumulate around it. As the inflammation continues, degenerative changes begin to occur in the tendon including thickening, nodularity,

softening, and fibrillation. The tendinosis stage consists of degeneration of the tendon without inflammation due to accumulated microtrauma, aging, or a combination of the two. This degeneration can lead to an interstitial, partial, or acute rupture.

CLINICAL PRESENTATION

In the early stages, patients will often have pain in the distal Achilles just proximal to the insertion. The pain may increase with activity and as it progresses, pain can be associated with lesser levels of activity. They may complain of thickening or swelling along the tendon as well as weakness or loss of motion.

EXAM

The physical exam revolves around determining the exact location of the pain as well as the amount of swelling that is associated with it. Patients should be able to do a single-limb heel-rise. The calf should be examined for any atrophy and a Thompson test should be performed, especially if there is concern for rupture.

STAGES

There has been a staging system for the spectrum of inflammation of the Achilles tendon proposed by Puddu et al. It consists of 3 stages. Stage 1 is peritendinitis, which is inflammation of the peritendinous structures. Stage 2 is peritendinitis with tendinosis, which is inflammation along with degeneration of the tendon. Stage 3 is tendinosis.

IMAGING STUDIES

Routine radiographs of the ankle should be obtained. This includes a weightbearing AP, lateral, and mortise view. There may be cortical erosion or calcification within the tendon in cases of inflammatory arthropathy. A Haglund's deformity may be present on the lateral radiograph. MRI can demonstrate partial or full thickness tears, peritendinous thickening, and calcifications as can ultrasound.

TREATMENT

Most cases of Achilles tendinosis can be managed nonoperatively, however, this becomes more difficult with chronic conditions. Initial treatment includes anti-inflammatory medication, immobilization in a CAM boot or Molded Ankle Foot Orthosis brace, activity modification, and heel lifts. Once the period of acute inflammation has passed, physical therapy can be used for stretching and strengthening. The period of immobilization typically lasts 6-8 weeks but may extend longer in more severe cases.

If conservative treatment fails, surgical options exist. This can include resection of the Haglund's deformity and debridement of the tendon and direct repair or in more severe cases augmentation with Flexor Hallicus Longus transfer.

CONCLUSION

Achilles tendinosis is a common problem seen by many orthopaedic surgeons and can be quite frustrating for the patient. It is typically an inflammatory process that can progress to degenerative changes in the tendon, which predispose it to rupture. It can often be managed nonoperatively with good results.

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