SUN Orthopaedic Group, Inc.

ACHILLES TENDINOPATHY

SUMMARY

Achilles tendinopathy is the most common cause of heel pain that occurs behind the ankle joint. It has a prevalence of approximately 11% in the general population and is the single most common cause of tendinopathy in runners. While very common in athletes (Achilles tendinopathy ended the great Joe DiMaggio's baseball career), Achilles tendinopathy also afflicts the sedentary, as well as overweight individuals.

Nonoperative treatment includes relative rest, activity modification, and shoe wear inserts such as a heel lift. Nonoperative management is generally successful, however, when it fails, there are surgical options.

ANATOMY

The Achilles tendon is the largest tendon in the back of the calf and is made up of a confluence of fibers from the calf muscles. The tendinous portion attaches to the back of the heel bone. The Achilles tendon, like many tendons, has a very poor blood supply. Indeed there is a "watershed" zone that is located approximately 2-4 cm above the insertion of the tendon into the heel bone. This is often, but not always, the location of swelling, point tenderness as well as nodular formation.

CAUSES

Achilles tendinopathy is a classic overuse condition. Attempts to do too much too often too fast too soon are frequent predisposing factors. The repetitive microtrauma to the tendon often exceeds the tendon's natural ability

to heal and recover. The condition is often precipitated by the following:

- Increases in activity
- More intense activity such as speed running
- Up-hill running—the Achilles tendon has to stretch more than normal with each up-hill stride. Over time, the increased stretching and fatigue can lead to tendon injury.
- Less recovery time between activities
- Change of footwear or training surface
- Weak calf muscles
- Decreased ankle range of motion

TYPES

There are two types of Achilles tendinopathy. Insertional Achilles tendinopathy occurs when the area of damage and maximal tenderness is at the junction between the tendon and the heel bone. Often times there is a prominent spur in this location. The tendon is quite thick and

often times there is subtle yet palpable swelling at this location.

The second type of Achilles tendinopathy is non-insertional Achilles tendinopathy. In this condition, maximal pain, swelling, and nodule formation occur approximately 4-6 cm above the tendon-heel bone attachment.

SYMPTOMS

Symptoms usually include swelling and tenderness directly over the area of the damaged tendon. In chronic situations there is often times atrophy of the calf musculature. Gently squeezing the tendon produces exquisite pain. There is weakness with push-off and patients often times have difficulty performing a heel-rise.

X-rays are generally not necessary but may reveal important contributing factors such as

bone spurs and areas of calcification. MRI scans can identify the location and degree of the damage to the tendon and tendon sheath.

NONSURGICAL TREATMENTS

Most cases of Achilles tendinopathy can be successfully managed with nonoperative methods. Options include rest, activity modification, anti-inflammatory medications, ice, contrast baths, stretching, heel lift inserts and a period of immobilization. Eccentric strengthening exercises, popularized by Swedish investigators, can be very helpful.

Eccentric exercises are performed on a step. Eccentric strengthening exercises are easily learned after 1-2 visits with a skilled physical therapist.

Individuals perform this exercise by positioning their toes at the edge of a step. A heel rise is performed using both extremities in the “up”

phase. Next, in the “down” phase, all the weight is transferred to the affected leg. The individual then lowers the heel as far as it will go beyond the step.

Like most tendinopathies, Achilles tendinopathy can linger for a long time. Nonoperative management is generally less like to be successful if symptoms have been present for greater than six months duration.

EXTRACORPORAL SHOCKWAVE THERAPY

Multiple studies have demonstrated that ESWT is a very effective treatment for chronic insertional and non-insertional Achilles tendinopathy. ESWT is used to treat multiple musculoskeletal conditions including chronic plantar fasciopathy, tennis elbow, trochanteric hip bursitis, patella tendinopathy, as well as calcific tendinopathy of the shoulder.

The presumed mechanism of action is to stimulate blood flow to an area that has a poor blood supply. Other benefits include inhibition of pain receptors, stimulation of growth factor release and inhibition of molecules that lead to tendinous degeneration. The procedure is safe, non-invasive, and usually performed in an office setting.

SURGICAL OPTIONS

Surgical procedures generally involve debridement and removal of the damaged and degenerative aspects of the afflicted tendon. Bone spurs and areas of calcification are often times resected. In more advanced cases, it may be necessary to augment the procedure by transferring a tendon to the area of damage. Surgical results are generally favorable, however, as is true with most aspects of tendinopathy, recovery can be lengthy and immobilization is often times necessary.

To learn more about Achilles tendinopathy see the following web sites:
www.aaos.org
www.aofas.org
www.footeducation.com.