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Achilles Tendon Injuries

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Achilles was the greatest warrior of the Trojan War, as told in Homer's Iliad. When he was a child, his mother held him by the ankle and dipped him in the river Styx to make him indestructible. The sacred waters conferred protection to him everywhere except where she had held him by his heel cord, which we now call the Achilles tendon. The lesson of this myth may be that every person has a weakness.

Two recent high-profile injuries have drawn attention to Achilles tendon ruptures; David Beckham, of the Los Angeles Galaxy, the most famous soccer player in the U.S., went down with a complete Achilles rupture while playing a game overseas. More recently two-time all Big Ten basketball player Kalin Lucas of Michigan State missed the rest of the NCAA tournament with a complete Achilles rupture. Unfortunately, Michigan State had enough talent to put a stop to the Northern Iowa Panthers.

The Achilles tendon is the largest and strongest tendon in the body. It is also known as the heel cord. It functions to transfer power from the large calf muscles to the foot and ankle. The transfer of this power allows us to sprint and jump. During running, we put ten-times our body weight in force across the tendon. The Achilles is nourished by several blood vessels, and these vessels are fewest about 1-2 inches above the heel – it is no surprise that this area of poor circulation is the most common area for rupture.

Most Achilles tendon problems are less dramatic than those suffered by the star athletes noted above. Many athletes suffer from Achilles tendinosis or tendonitis. Symptoms include swelling, pain, warmth, tenderness, or even a palpable nodule around the posterior ankle. Patients may have burning while doing strenuous activity. Physical findings can also include decreased ankle range of motion (ROM) and atrophy of the calf.

Treatment of Achilles tendonitis usually responds to a period of rest, over the counter antiinflammatory medicine, and ice. Sometimes a small heel lift placed in the shoe can relieve symptoms. If ROM deficits are noted, calf stretching is necessary. Eccentric strengthening has been shown to be particularly effective. This involves placing the toes on a step and beginning in a position with the heel above the toes (plantarflexion) and slowly lowering oneself down until the heel cord is stretched and the heel is lower than the toes (dorsiflexion). This is then repeated. Gradual return to sports is important, and cross training with bicycling and swimming can be very helpful. Cortisone shots are somewhat controversial, as they may actually weaken the tendon. One new technology currently under investigation is the use of platelet rich plasma therapy to induce healing.

When conservative treatment fails, sometimes surgery is needed to clean up the diseased portions of tendon. Acute rupture of the Achilles tendon is often seen in middle-aged, "weekend warriors". The tendon tears in half and can retract. The athlete may feel a pop, and some may look around them

thinking that someone struck them in the calf. Often this happens when landing from a jump. Weakness with standing on the toes (plantarflexion) is common. Sometimes, one can palpate a defect in the tendon. One study showed that 23% of these acute ruptures were missed by the initial treating physician. If there is question of rupture, MRI can confirm a tear, but usually examination is sufficient.

Treatment of Achilles ruptures is usually surgical. There is a lower re-rupture rate, improved strength, and higher percentage of patients returning to sport with surgical management. There is a role for nonsurgical management in the treatment of elderly, diabetic, or low-demand patients. This usually involves a cast placed for 4-8 weeks with gradual return to weight bearing.

Surgical treatment requires that the two torn ends of the tendon are held together with suture while the tendon heals. During this recovery time, the repair must be protected. Active ROM may be started after a week. A walking boot or cast should be worn for 4-6 weeks, sometimes with a lift under the heel. Running starts at 4 months and sports at 6 months.

Dr. Bremner is an orthopaedic surgeon at DMOS – East. He also provides satellite clinic services in Ankeny. To reach Dr. Bremner or to schedule an appointment please phone 515-263-9696.