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Achilles Tendinosis

The Achilles tendon is one of the strongest muscle/tendon units in the body and is the strongest in the leg. The tendon is the end connection of two muscles (gastrocnemius and soleus) that inserts into the heel bone (calcaneus). This muscle/tendon unit provides the most force to propel the body forward when walking. For sports and athletic activities, the Achilles undergoes a significant amount of strain as the muscles are contracting quickly and vigorously to allow the body to move at a rapid pace and jump. Although there is no one explanation for why people develop Achilles tendinosis, a common theme is that there has been more strain to the tendon than the elasticity of the tendon can tolerate. This is akin to a rubber band that has dried out/old where repeated stretching of the rubber band results is fraying of the material as opposed to a quick snap back to the normal length of a new rubber band. This is not a perfect analogy of course, and in humans, the tendon attempts to heal itself, which is the thickening of the tendon that is noted by many patients.

Most patients will not have a single event that brought on the condition and this can be frustrating. Symptoms present with pain along the Achilles tendon, either more towards the back of the heel where the tendon inserts (insertional Achilles tendinosis) or in the center of the tendon (non-insertional tendinosis). The center of the tendon is approximately 4-6cm above the heel bone and is an area of poor blood supply to the tendon that does help to explain why patients get this condition in

this location. Thickening of the tendon is noted with pain in the area of the thickened tendon. In cases where it is insertional, the thickening can interfere with shoewear. In many cases, initiation of a new activity, or increase in the amount of athletic activity can be associated with the onset of pain. On physical exam, there is typically visible thickening of the tendon that is painful to touch. The strength of the muscle/tendon is not affected, and the integrity of the tendon will be normal (ensuring that there is no rupture). The amount of dorsiflexion (up motion of the ankle) is determined and in many patients with Achilles tendinosis there is a restricted amount of motion with the knee straight vs. with the knee flexed. This is called a gastrocnemius contracture and the "tightness" of the muscle is felt to increase the strain on the tendon resulting in this condition. Xrays are taken to identify the presence of calcification within the then tendon as this affects the treatments that are available. Routine MRI of the Achilles is not required in many cases, but is considered in patients that do not improve or for surgical planning. In many cases patients will have had a MRI already and common terms on the report include: tendinosis, partial tearing, tendonitis, degeneration that are all associated with this condition. Partial tearing is concerning when read in isolation, but is not the same as an Achilles rupture, and is more related to the rubber band analogy above, where the is some damage to the tendon that the body is trying to heal with scar.

Modern treatment for Achilles tendinosis begins with non-surgical intervention with therapy and use of biologic treatments such as PRP. For patients with non-insertional tendinosis, treatment with physical therapy and activity modification is very effective. Therapy for non-insertional Achilles tendinosis is prescribed specifically with eccentric Achilles strengthening that is a proven protocol to help. To augment the biologic healing of the tendon in addition to the therapy, a PRP injection can be done into the tendon to provide new blood flow to directly improve the healing of the tendon. Heel lifts to decrease strain on the tendon can be considered and activity modification to avoid strain on the tendon is recommended. In patients where the relief is not sufficient, then surgical intervention can be considered. Surgical treatments range from lengthening the calf muscle to decrease strain on the tendon, use of your own stem cells to improve the healing of the tendon, debriding (cleaning out the damaged tissue), graft reconstruction and tendon transfers. The most appropriate operation or combination of procedures will depend on your exam and advanced imaging including a MRI.