

Connecting the Calf Muscle to the Heel Bone: Achilles Tendon

Yasuhiro Shirai*

Department of Orthopaedic Surgery, Nagoya City University, Japan

Abstract

The Achilles tendon connects the calf muscles to the heel bone (calcaneus) which is also known to be calcaneal tendon. The largest and the strongest tendon in the human body is said to be Achilles tendon which gets pulled due to any muscles flexing of the calf muscles. The movements such as walking, jumping and running occur due to the stretching and relaxing of the Achilles tendon. However, being a strongest tendon of the body they are more prone to get injured easily and because of its limited blood supply they can have the ability to make the injury more severe.

Keywords: Achilles tendon; Calcaneus; Heel bone

Introduction

The range of Achilles injury occurrence can be among any of the age groups individual. The tendon can easily get injured accompanied by the mild or moderate pain/stiffness in the injured part of the tendon but if the pain is unbearable then it can be that the tendon has partly or severely torn.

Through the action of the triceps surae, which raises the heel and lowers the forefoot, the Achilles tendon is involved in plantar flexion of the foot. The contraction of the gastrocnemius and soleus muscles result in a translational force through the Achilles tendon that results in plantar flexion of the foot. This action is very significant in human locomotion and propulsion responsible for actions such as walking, running and even jumping. Also, these motions exert the greatest load on the Achilles tendon, with tensile loads up to about ten times the body's weight. The anatomy of the tendon provides for both elasticity (recoil) and shock-absorbance in the foot. It is the largest and strongest tendon in the human body and is capable of supporting tensional forces produced by movement of the lower limb.

Symptoms Shown in the Achilles Tendon Injury

Pain is the most common sign of injury within the tendon tearing which occurs occasionally while the stretching of the ankle or the while standing on your toes. The pain can be mild or gets faded or severe with the time. But the pain would be unbearable only when the tendon gets ruptured and would lead to the swollen and stiff.

The tearing or the rupturing of the tendon accompanied with the snapping or popping noise leading to the bruising and swelling of the injured part of the tendon. This pain would hinder your movement of pointing the toes or while taking a step. Achilles tendon occurs in the people who perform their task quickly, which are the runners, Gymnast cists, footballers, basketball players, Tennis players, etc.

These Defects occur to take place when a person start to move suddenly as to push the foot and lifting the foot rather than to land on the path smoothly. Such as the scenario seen with the sprinters who get the injury in the starting of the race as to surge of the beginning line or the barrier which would be too much for the tendon to accustomed with it.

Conclusion

The Achilles injury is commonly taken to be mistaken by most of the physicians as the sprained ankle. So, for its correct diagnosis doctors perform the test of physical examination in which the patients are asked to run or to look for problems that might have led to the Achilles injury.

The one of the most known test used in the examination of the Achilles tendon is the squeeze test in which you are made to doctor would examine the calf muscles by squeezing it on the healthy leg, this would pull the tendon and will make the foot to move and if your tendon is ruptured then the foot won't move and would lead to the confirmation of the Achilles injury.

These tests would guide the physician to see if the foot is easily moveable or not and then would be followed by the imaging tests, which involves X-ray or MRI and these can help to know what tendon damage the patient is suffering and what major treatment can be provided to the patients.

Conflict of Interest

We have no conflict of interests to disclose and the manuscript has been read and approved by all named authors.

Acknowledgement

The authors are very thankful and honored to publish this article in the respective Journal and are also very great full to the reviewers for their positive response to this article publication.

*Corresponding author: Shirai Y, Department of Orthopaedic Surgery, Nagoya City University, Japan, E-mail: shirai_yasuhiro@yahoo.co.jp

Received: July 27, 2021; Accepted: August 10, 2021; Published: August 17, 2021.

Citation: Shirai Y (2021) Connecting the Calf Muscle to the Heel Bone: Achilles Tendon. Clin Res Foot Ankle 9: 319.

Copyright: © 2021 Shirai Y, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited