



International Journal of Orthopaedics Sciences

E-ISSN: 2395-1958
P-ISSN: 2706-6630
IJOS 2023; 9(1): 217-220
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<https://www.orthopaper.com>

Received: 03-10-2022

Accepted: 06-12-2022

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A case report of tendoachillis tear and repair

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DOI: <https://doi.org/10.22271/ortho.2023.v9.i1d.3298>

Abstract

The Achilles tendon (AT) is the strongest and thickest tendon in the body. It serves a fundamental function of linking the soleus and gastrocnemius muscles to the calcaneus bone to enable plantar flexion about the ankle joint. We aimed by this recent study to overview the Achilles tendon injuries in different aspects, we intended to examine the causes and risk factors and diagnosis of this condition, However the main purpose of this study was to evaluate the treatment repair approaches to Achilles tendon injuries.

Keywords: Tendoachillis tear, tendon repair, Achilles tendon

Introduction

The Achilles is a commonly injured tendon. Many Achilles tendon injuries are caused by overuse, which leads to a swollen and painful tendinitis. In the most severe Achilles tendon injuries, too much force on the tendon can cause a partial tendon tear. In the worst cases, a complete Achilles tendon rupture results ^[1].

There is a wide range of symptoms ^[2] that you may experience when you injure your Achilles tendon, from a weakness in your leg, to hearing an audible pop followed by leg pain. Whether you already have an Achilles tendon rupture diagnosis or are experiencing symptoms, there are many questions to answer.

Causes of an Achilles tendon injury

The Achilles tendon does a massive job and can usually withstand great stress from running, jumping and a wide range of daily activity. The Achilles is also prone, however, to tendinitis, which is an inflammation of the tendon, and rupture, a condition associated with overuse or degeneration ^[4].

In an Achilles rupture, the Achilles tendon itself tears, either partially or completely. This can happen due to degeneration over time or can happen abruptly from an acute injury.

Achilles injuries occur most often when pushing with sudden force off the foot, as with jumping or sprinting. This is common in sport-related injuries like running, dance, tennis, volleyball, football, basketball, baseball and other sports that require a lot of quick stops and starts.

There are many reasons an Achilles tendon can weaken or get injured ^[5]. Taking certain medications, wearing high heels and overuse can contribute, as can underlying disease, age and arch issues. Additionally, a sudden increase in physical activity and lack of stretching are other common factors that can lead to an Achilles tendon injury.

Symptoms & Diagnosis of a Ruptured Achilles tendon

Common symptoms of an Achilles tendon rupture include:

- A snap, crack or popping sound when pushing off with your leg,
- A sharp pain in the back of your leg or ankle,
- Trouble moving your foot to walk or climb stairs,
- Inability to stand on your toes,
- Pain, bruising and swelling at the back of your leg or heel ^[6].
- If you have any of the above symptoms, seek immediate medical attention for a complete diagnosis of your Achilles tendon.

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Partial Tear or Complete Rupture?

There are a number of observations and tests your physician will perform to determine the extent of your Achilles tendon injury, including visual observation and possible image testing such as an MRI or ultra sound. They may also perform a physical exam called the Thompson test.

Thompson test

Thompson test is a physical exam that's performed with the patient on their stomach and their knee bent. The physician squeezes the calf to see if the foot moves toward the ceiling. If the foot does not move, the Achilles tendon is torn or ruptured.



Preop – foot does not move to ceiling, in a ruptured Achilles tendon



Postop – foot move to the ceiling after Achilles Tendon repair



6 month follow up with full functional tendoachillis

Partial Achilles Tear

If the tear is partial you may still be able to walk, but you will have a limp, often accompanied by severe pain when you push with your toes or touch down on your heel.

In addition, the middle section of your Achilles will be tender and swollen, a symptom that will likely subside after a few days.

Your Achilles tendon may also be painful and stiff, especially after a long period of inactivity [7].

Complete Achilles Tear / Achilles Tendon Rupture

More severe than a partial tear, a total Achilles rupture will be more obvious [8], and you will likely notice the moment the injury occurs. Symptoms may include:

Acute pain, often described as being struck by a sharp object in the Achilles area, A loud snap or pop that can be heard at the time of injury, Difficulty flexing and pointing your foot, Formation of a small visible gap or palpable depression in back of the calf.

If any of these symptoms are present, it's highly likely you have an Achilles rupture, and you should immediately have your injury assessed and verified by a physician to avoid more damage and give yourself the best chance for a full recovery.

Note that a partial Achilles tear is not as easy to diagnose as a complete Achilles rupture, and you might not notice when the injury occurs. Partial tears often don't reveal themselves until after you cool down from your activity

Managing Achilles Tendon Pain & Inflammation

If you have any of the above symptoms and cannot see a doctor immediately, you can treat your rupture at home for a short time. However, Achilles tendon injuries should not be taken lightly because you can inadvertently cause additional damage. It's important to see your physician as soon as possible to learn more about Achilles Tendon repair [9].

Start With Ice to Reduce Inflammation

Placing ice on the most painful area of the Achilles tendon is helpful to reduce swelling due to inflammation. Use a piece of thin material between the ice and your skin to protect from ice burn.

You can ice the injury for up to 20 minutes three to four times a day, but make sure to pay attention to the skin. If it becomes red or numb reduce the time and/or frequency of the ice therapy.

Get plenty of rest in conjunction with the ice treatment. It's best not to walk or stretch a ruptured Achilles tendon, especially if you have extreme pain.

Medications for Inflammation and Pain

You may want to take a pain-relief medicine to help with the initial discomfort of an Achilles tendon rupture.

Many over-the-counter medications [10] are used not only for pain relief, but also to reduce inflammation. Common over-the-counter pain relievers such as non-steroidal anti-inflammatory drugs (NSAIDs) and aspirin will reduce inflammation.

Your doctor may recommend the following:

1. Ibuprofen (Advil and Motrin)
2. Naproxen (Aleve)
3. Tylenol (Acetaminophen)
4. Generic Aspirin
5. Topical Creams

It's important to follow pharmacist and physician instructions regarding use of any medication. Improper or overuse of over-the-counter medicine can lead to more serious damage to the body and internal organs. Allergies should also be considered for any medication.

Surgical vs Non-Surgical Achilles Treatment

Achilles Injury Non-surgical Treatment

Once your physician has diagnosed an Achilles injury, whether partial or full Achilles tendon rupture, you may be presented with treatment options [11].

Wearing a cast or removable boot that points the toes down.

Wearing a heel wedge or series of casts that adjust the amount of stretch in your Achilles tendon over time. Using this method, called recasting, a new cast or heel wedge is added weekly to gradually decrease the amount of flexion (toes pointing down) in your ankle. This allows the Achilles tendon to heal while gradually increasing the stretch in the tendon.

While non-surgical procedures can be attractive, recovery rates are not encouraging. Nonoperative care has demonstrated a re-rupture rate of 10 to 30 percent while surgical re-rupture rates are around 3 to 4 percent. It is best to consider all options for ruptured Achilles tendon treatment.

Achilles Injury Surgical Treatment

Open Achilles Tendon Tear Surgery

Open Achilles surgery involves a single large incision on the back of the leg, removal of damaged tissue and suturing the ends of the tendon back together.



Intraoperative picture with sutured tendon ends of ruptured Achilles tendon

This type of repair will be followed by bivalve slab and limb elevation for better post op outcome.



Post op X-ray of tendoachillis repair



Post op bivalve slab and limb elevation

Conflict of Interest

Not available

Financial Support

Not available

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How to Cite This Article

Patel DJ, Thummar JC, Parakhiya BV, Patel SV. A case report of tendoachillis tear and repair. *International Journal of Orthopaedics Sciences.* 2023;9(1):217-220.

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