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Successful treatment of chronic rupture of Achilles tendon caused by repeated corticosteroid injections and haglund's deformity: A case report

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Abstract

A chronic Achilles tendon rupture is a tendon rupture which is more than 4–6 weeks after a traumatic injury or any other pathological conditions like repeated corticosteroid injections, Haglund's deformity or due to osteophyte or bone spur), can cause chronic inflammation and degeneration of the Achilles tendon, eventually leading to rupture.

This presents a challenge for surgeons who provide tendon repair procedures.

We present a 47-year-old man who had difficulty moving her left leg and had a deformity on the left leg compared to her right leg and pain starting 1 months. Patient is worker in company And he did not have any significant injury.

There was a 2 centimeter gap near tendoachilis insertion with a positive Thompson test. The Haglund's deformity on the left calcaneus was visible on the ankle X-ray.

The patient had a chronic total rupture of the left Achilles tendon with degenerative changes in tendon confirmed by ultrasonography Patient was treated with a flexor hallucis longus (FHL) tendon transfer and resection of the Haglund deformity/ spur. 3 weeks after surgery, the patient's ability to walk and range of movements of the left leg improved.

This case report describes a chronic left Achilles tendon condition that was successfully repaired through surgery using FHL tendon transfer and removal of Haglund's deformity.

Keywords: Treatment, Haglund's deformity, repeated corticosteroid injections, chronic rupture

Introduction

Patient 47-year male presented with pain in left ankle for 1 week and difficulty in walking from 1 week.

H/o chronic pain in left heel and for that multiple physiotherapy done and multiple injection corticosteroid taken for 2 years.

No h/o DM

NO h/o htn

Onclinical examination

Left ankle swelling tenderness and Palpable gap at tendoachilis insertion site just proximal to insertion Thompson test was positive No distal neurovascular deficit noted USG was done suggestive complete tear of tendoachilis with gap around and loss of tendon fibres and degenerative changes in tendon.

Patient underwent surgery

FHL tendon transfer with excision of Haglund deformity.

Operative notes

Under anaesthesia painting and draping was done in sterile manner prone position was given tourniquet was inflated posterior direct approach taken tendo achilles identified and pathological tissues removed Haglund deformity/retrocalcaneal spur was identified and removed with saw rasp done for smoothing of crater fhl tendon harvested and prepared with fibre wire tenodesis was done with remnant of tendo achilles fhl was tendon was fixed with

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calcaneal by bio screw 8 mm x25 mm tension was checked during fixation rom checked on table after fixation stability was checked wound was washed and closed in layer splint given in equinus position.

Post op splint was continued in equinus position for 2 weeks After 2 weeks' stitches were removed after that removal splint was given and range of motion exercises were advised active and passive stretching planter flexion and dorsiflexion for 4 weeks.

At 6 weeks' patient was advised for physio rehabilitation and and gait training

And 8-week patient is walking without support and pain free with full range of movements.

Discussion

The Achilles tendon is considered the largest and strongest tendon in the human body.

Nonetheless, this structure is the most frequently ruptured tendon in the lower limbs, particularly due to degenerative (25%) and mechanical/sport-related (75%) processes [1, 2].

Several characteristics were discovered to be significantly distinct between patients with tendinopathy and the normal population, including age; body mass index (BMI); abductor hallucis brevis muscle thickness; extensor digitorum longus muscle cross-sectional area (CSA); and both the thickness and CSA of the tibialis anterior, flexor digitorum brevis, flexor hallucis brevis, and peroneus muscles [3, 4].

In elderly patients, a bony spur (osteophyte) may form at the calcaneus, causing some disruptions to the Achilles tendon attached to it. Haglund's deformity (an abnormality of the bone and soft tissues in the foot) may develop later in life due to an expansion of the bony section of the heel [5]. The deformity can be detected by clinical (mainly inspection and palpation) and radiographical examinations [6]. Open surgery (bursectomy and calcaneal exostosis resection) and endoscopic calcaneoplasty are two treatment options available for this disorder [7]. Haglund's deformity was found to be responsible for acute Achilles tendon rupture, particularly in athletes [6]. However, its importance has not been addressed adequately in chronic Achilles tendon rupture cases.

Early detection and treatment should be carried out properly for Achilles tendon ruptures.

However, it is estimated that about 25% of Achilles tendon injuries are not detected early, resulting in a neglected condition known as chronic Achilles tendon rupture (delayed diagnosis and procedure for more than 4-6 weeks) [8]. It is primarily attributed to underdiagnoses, with the injury referred to as hematoma formation or simply an ankle sprain, especially when the patient can walk to the examination room [9, 10]. Chronic Achilles tendon rupture necessitates more difficult treatment due to the retraction of the tendon ends and the surrounding muscles, scar tissue development in the gap, and diminished gastrocnemius muscle contractility [11-13].

Flexor hallucis longus (FHL) tendon transfer is a renowned and minimally invasive surgery method for treating chronic Achilles tendon rupture cases. Some studies have reported favorable outcomes following the restoration of the ruptured Achilles tendon with the FHL tendon transfer procedure. Furthermore, this technique can preserve the integrity of the skin along the affected region [14, 15].

Complete rupture of the Achilles tendon, traumatic or non-traumatic, is relatively rare [16]. Non-traumatic ruptures are most often related to degenerative phenomena, which reduce the strength and elasticity of the tendon tissue over time, to predisposing factors which increase stress on the tendon and

to local or systemic medication, such as fluoroquinolones and corticosteroids [17, 18].

The mechanism underlying these phenomena is linked to hypoxia, and non-traumatic lesions are typically localized in the critical area (about 3 cm proximal to the calcaneal insertion) which receives less blood flow. When progressing, the degenerative process may initially result in partial rupture and subsequently in complete rupture of the tendon [16]. Subcutaneous rupture of the Achilles tendon generally affects the medium-proximal portion. However, in cases where the degenerative disease affects the distal third, it is frequently associated with deep retro calcaneal bursitis.

Complete Achilles tendon rupture is relatively rare, but it is an injury of considerable clinical relevance [17-18]. We report this case as it confirms that multiple corticosteroid injection treatment may be a factor contributing to rupture of tendoachilis

Conclusions

This case report describes an elderly patient with a chronic total rupture of the left Achilles tendon resulting from Haglund's deformity of the calcaneus and other contributing factors include repeated corticosteroid injections.

The use of corticosteroids in Achilles tendinopathy is still controversial. Corticosteroids affect the healing in a negative way by suppressing the inflammatory response, tenocyte proliferation and collagen synthesis. They can cause spontaneous rupture by reducing the tensile strength of the healing tendon [19]. According to some studies, corticosteroids delay tendon healing, cause degeneration and impair biomechanical properties [20]. However, there are also publications reporting no side effects on the tendon and no increase the rate of Achilles tendon rupture [21]. There is no clear consensus on the benefits and damages.

The deformity was responsible for the degenerative process and injury to the surrounding tissues. FHL tendon transfer and surgical resection of Haglund's deformity and the osteophyte were used to resolve the rupture. Chronic Achilles tendon rupture is more difficult to manage than acute

Achilles tendon rupture because it is associated with scar tissue formation at the tendon's gap, causing ankle dysfunction. FHL tendon transfer improved the patient's clinical condition, as evidenced by functional improvement (improved movement), anatomical improvement (improvement of the difference in leg shape), and pain amelioration.

Conflict of Interest

Not available

Financial Support

Not available

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