

Bilateral Atraumatic Tendoachilles Rupture Following Steroid Injection - A Rare Clinical Presentation

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Abstract

Painful heel is frequently faced problem in orthopaedic OPD worldwide. Frequent causes are Achilles tendinitis and retrocalcaneal bursitis. Variety of treatment modalities are available ranging from NSAID administration, hot and cold water fomentation to ultrasound phonophoresis, intralesional steroids injection and even surgery. Rupture of Tendoachilles is frequently associated with athletic injuries but bilateral atraumatic rupture is rare. A 39 years old female who was suffering from bilateral retrocalcaneal bursitis since last 3 years was treated with six doses of intralesional steroid bilaterally three on each side around tendoachilles in a time interval of three months prior to rupture. After 3 months she had sustained atraumatic rupture of bilateral tendoachilles. She presented with pain around both ankle inability to climb stairs, squat. This was confirmed by clinical examination and ultrasound examination. We treated the rupture using Krackow's technique to repair the tendon. Follow up at one year revealed good functional recovery. It is better to avoid intralesional steroid injections in and around the tendoachilles

Key Words: *Bilateral tendoachilles rupture, Krackow's technique, intralesional steroid injection*

Introduction

Achilles tendon is the thickest and strongest tendon of the human body. Hippocrates was the first to record description of Achilles tendon injury.[1,2] Tendon injuries are frequently seen in sports injuries, and Achilles tendon is commonly involved. Bilateral rupture after steroid injection is rare.[2,3] Painful heel is frequently faced problem in orthopaedic OPD worldwide. Frequent causes are Achilles tendinitis and retrocalcaneal bursitis. Treatment modalities available are NSAID administration, hot and cold water fomentation, ultrasound phonophoresis.[2,3] Repetitive Intralesional steroid injection and even prolonged oral administration of corticosteroids are associated with Achilles tendon rupture.[4] Most common complication of intralesional corticosteroids injection is rupture of the tendon.[2,3,4] There is a debate on giving intralesional steroids in and

around the Achilles tendon. Bilateral tendoachilles rupture due to corticosteroid infiltration is very rare. MRI and ultrasound are confirmatory. MRI is more sensitive than ultrasound, but cost, rapidity, availability makes USG preferred investigation. Histopathological investigation reveals the tendon degeneration; surgical repair is preferred, as it reduces chance of failure and improves functional outcome. It is advisable to operate bilateral cases in two sittings to avoid complications caused due to prolonged immobilization.

We present a case of bilateral atraumatic rupture of Achilles Tendon after intralesional cortico-steroid injection for retrocalcaneal bursitis.

Case report

A 39 yrs female farmer by occupation, who was suffering from bilateral heel pain since last three years, was treated with analgesics, hot water fomentation. She was diagnosed to have bilateral retrocalcaneal bursitis and was treated with six doses of intralesional corticosteroid three on each side bilaterally at an interval of three months. Patient was pain free after the injections. Three months following injections, patient felt a sudden snap in both

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ankle while doing squatting and it was associated with pain, swelling behind the ankle. After that episode patient was unable to climb stairs, squat and had difficulty in walking without support.

On inspection there was swelling over both ankle joints proximal to the insertion of tendoachilles and visible depression proximal to the insertion of tendoachilles . Mild tenderness and palpable gap of around 4 cm was felt in the continuity of the tendoachilles proximal to its insertion over calcaneum, Plantar flexion of both ankles was restricted actively to around 20 degrees. Thomsons test was positive bilaterally (no plantar flexion on squeezing the gastrosoleus muscles, indicating discontinuity in tendoachilles). Obrien’s needle test: positive (needle placed 10 cm proximal to the insertion of the tendoachilles does not move on plantar and dorsiflexion). X- ray examination of the ankle joint showed evidence of retrocalcaneal region soft tissue shadow and bilateral calcaneal spurs.

USG using 12 mega hertz probe showed a heterogeneous hypo echoic area with discontinuity. Due to nonaffordability MRI scan was not performed in this case. Operative intervention was performed on both the ankles at an interval of 8 days. We used Krackow’s technique with ethibond as the suture material. [Fig 1,2,3,4,5,6,7]



Fig. 1 Arrow showing ruptured end of TA

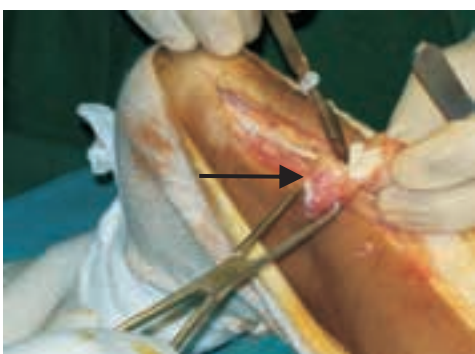


Fig. 2 Freshening of ruptured end

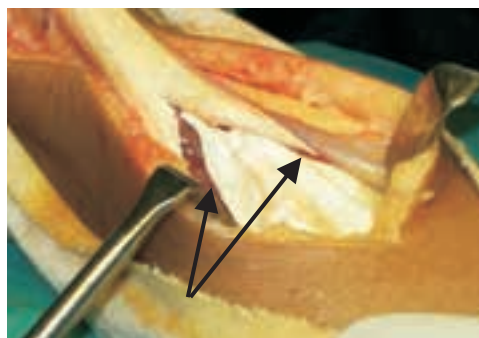


Fig. 3 Y shaped incision at musculotendineous junction for elongation



Fig. 4 Elongation of Tendon



Fig. 5 Suturing of cut end with Ethibond Suture



Fig. 6 Suture of Elongated tendon



Fig 7 Final Closure

Intravenous antibiotics were administered for five days and later on she was given oral antibiotics. Postoperatively below knee slab was applied for 2 weeks in equines position. Suture removal was done on 15th day. Below knee slab was continued for next 4 weeks. Later gradual ankle dorsiflexion and plantar flexion was initiated. Nonweight bearing mobilization of Hip, Knee and both ankles was initiated at 6 weeks. Follow up USG done at 6 weeks showed continuity of Tendoachilles bilaterally. At 12 weeks partial weight bearing was initiated and at 6 months full weight bearing was permitted. Finally patient achieved 90% of the ankle movements; she now was able to walk and climb stairs without any discomfort after one year of follow up [Fig 8,9,10,11]



Fig 10 Heel rise at after one year



Fig 11 Healthy scar after one year



Fig 8 – Dorsiflexion at one year follow up



Fig 9 Plantar flexion at one year follow up

Discussion

Hippocrates gave first description about the tendoachilles rupture. [1] Normal Achilles tendon consist of mainly type-I collagen, but a ruptured Achilles tendon contains considerable amount of type III collagen which is less resistant to tensile forces and therefore predispose the tendon to spontaneous Rupture.[2,3] Achilles tendon is poorly vascularized in mid portion.[3] Achilles tendon rupture occurs frequently in Racket sports or athletic activities.[4]

Bilateral Achilles tendon ruptures due to corticosteroid infiltration is rare.[1] Spontaneous rupture frequently seen around 30 - 50 years, non-athletes & women above 50 years of age.[2] Though this phenomenon is rare in healthy athletes, this can happen even in the absence of history of significant trauma. Uneven forces across the ankles, Achilles tendons and malalignment of foot, due to running on uneven ground, cause transmission of huge force, loss of elastic recoil of the Achilles tendon. These could be one of the reasons for the spontaneous rupture of tendon even without severe trauma.[4] Long term therapy even

with oral corticosteroid also have been implicated in the etiology of tendon rupture.[3] Patients presents with a sudden snap associated with difficulty in walking, gradually appearing swelling and discoloration of heel.[2,3] Swelling is due to internal bleeding which masks the discontinuity of tendon.[2] But despite of this Plantaris and flexor hallucis longus tendon provide enough plantar flexion strength required to compensate for walking.[2] There are a number of diagnostic signs and tests, both clinical and radiological, that the examiner may use to aid in the diagnosis.[2,4] Real time high resolution ultrasonography of Achilles tendon is more sensitive than soft tissue radiography. It shows heterogeneous hypoechoic areas with discontinuity. MRI Scan is even better, investigation than USG but cost, and lack of availability at small centers limits its use.

Both treatment modalities i.e conservative and surgical can be used for treatment of this condition.[2,3,4] Non-athletes can be treated conservatively but it is associated with high rate of rerupture.[2,3], making surgical repair preferred treatment.[2,3] Various methods can be used like Krackow's, Lindholm, Lynn and Teuffer etc.[2] In our study we have used Krackow's method. Post operatively below knee slab was applied for 2 weeks in equines position. At 4 weeks gradual ankle dorsiflexion and plantar flexion was initiated. At 6 months, full weight bearing was permitted. Finally patient achieved 90% of the ankle movements and now patient was able to walk and climb stairs without any discomfort after one year of follow up. At every follow up continuity of sutured Tendoachilles was screened by ultrasonography.

Conclusion

Bilateral atraumatic tendoachilles rupture following corticosteroid injection is very rare. Along with clinical

examination, USG is very sensitive investigation for diagnosis of this condition. Both conservative and surgical treatment modalities are available but surgical repair is preferable, as it reduces chances of failure (rerupture) and improves functional outcome. Bilateral cases should be operated in two sittings to avoid complications due to prolonged immobilization. Surgical repair, immobilization followed by gradual physiotherapy, and patient compliance gives satisfactory functional results. However, longterm followup is needed following surgical repair. It is always better to avoid intralesional steroid injections in and around the tendoachilles.

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