Case Report

Bilateral Spontaneous Rupture of Achilles Tendon - A Case Report

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Abstract

Spontaneous bilateral rupture of Achilles tendon is usually associated with underlying systemic disease and concomitant corticosteroid therapy. This is a relatively rare condition, with very few cases reported in the English literature till date. Patients with this affliction frequently present weeks to months after the rupture occurred because there is no succinct traumatic event. This case is unusual as the spontaneous rupture occurred in a patient who had never taken steroid and without any history of injury. We discussed the mechanism of injury and other possible causes.

Key words : **Bilateral spontaneous rupture, Achilles tendon, corticosteroid therapy.**

The Achilles tendon is the thickest and strongest tendon in the body arising from the confluence of the gastrocnemius and soleus tendon[1]. The rupture of the Achilles tendon does not occur commonly. But it is the most frequently ruptured tendon in lower limb; and accounts for approximately 20% of all large tendon injuries[2]. Simultaneous spontaneous bilateral rupture of Achilles tendon is even rarer. Most injuries of the Achilles tendon occur as a result of accidental trauma or athletic activities such as lunging and jumping[3].

The case is reported as it is unusual because the spontaneous bilateral rupture of Achilles tendon occurred in a healthy man who did not give any history of taking steroid,injury and significant systemic illness.

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Cite as :
Bimol N., Chanu AR, Rai B, Wangjam K. Bilateral spontaneous rupture of achilles tendon - a case report. IJPMR 2011 Dec.; 22(3) : 99-101

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Received on 09/08/2011, Revised on 16/11/2011, Accepted on 18/11/2011

Case Report

A 59 years old male, milkman by occupation, from a hilly area reported in PMR OPD in February 2011 with the complaint of pain at both ankles and difficulty in walking since October 2010. He suddenly felt pain on the right ankle in the morning in early October 2010, followed by similar pain on the left ankle in the evening of the same day. After that he had difficulty in walking and was unable to lift the heel. Since then,he was walking using a stick. He was treated with analgesics for the pain as prescribed by local doctors.

There was no history of thyroid diseases, rheumatoid arthritis, gout and or any history of taking oral steroids and substance abuse. Also, there was no history of injury or local steroid injection.

Physical examination revealed palpable gap in the continuity of tendo-achilles about 4 cm above the insertion. Thompson test was positive. Heel raising test was negative. Biochemical investigations like thyroid function test, KFT, LFT, lipid profile was all within normal limits. Radiologically x-ray of both ankles were normal, but MRI was not done since the patient belongs to a poor family.

Surgical repair of both ruptured tendons was done on 9th February 2011. Excision of the degenerated segment of tendon was done. End to end suturing was not possible. Repair was done by using peroneus brevis tendon re-enforcement technique.

Specimen of the rupture Achilles tendon showed degenerative changes.

Postoperatively the lower limbs were immobilised with long leg casts with knee flexed at 45º and maximum planter flexion for 4 weeks. After that the cast was changed to below knee cast while reducing planter flexion to about 30º. This was kept for another 4 weeks.

After removal of cast the patient could achieve 20° equinus at the ankle. He was treated with paraffin wax bath of both ankles and range of motion exercise of ankle and stretching exercises of plantar flexors. After 3 weeks of therapy, ankle dorsiflexion of 10° was achieved and gait training was started using bilateral axillary crutches. Toe raises, progressive resistance exercises and proprioceptive exercises, in combination with a general strengthening program was also instituted. By the end of 4th month the patient was able to walk independently without crutches and ankle dorsiflexion was 15°.

No protective orthosis was prescribed, as repair was done using vascularised muscle.

Discussion

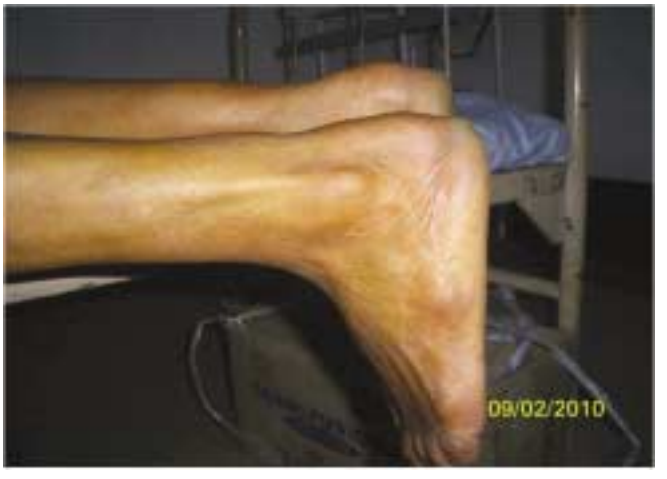
Risk factors for spontaneous rupture of tendo-achilles include use of corticosteroid, anabolic steroid, fluroquinolones and previous TA rupture and systemic disorders like rheumatoid arthritis, systemic lupus erythromatosis, gout, thyroid disorders, etc[4]. Habusta[5] reported that such spontaneous ruptures were common in degenerated tendon. He also reported that the incidence of Achilles rupture was around 0.02% in the western population. Less than 1% of them had bilateral spontaneous rupture[6]. A study by Raunest *et al*[7] reported that patients with hypercholesterolaemia had higher risk of rupture. In study by Shukla[8], a rare case of bilateral spontaneous rupture of Achilles tendon of non-traumatic origin was reported and he opined that poor arterial circulatory status of both lower limbs of the patient was the only factor found to be a possible cause of this rupture. Another study by Jain and Dawson[9] also reported a spontaneous rupture of Achilles tendon secondary to exercises for limb ischaemia. The mechanism of injury was probably sudden dorsiflexion of the plantar flexed foot. Hypothyroidism causes decreased synthesis and degeneration of collagen. Transient hypercalcaemia resulting from hypothyroidism causes calcification of tendon and small vessels thereby decreasing vascularity of the tendon and further reduces the tendon strength[2].

Patients with this affliction frequently present weeks to months after the rupture had occurred as there is no succinct traumatic event[6]. In our case also, the patient reported after 5 months.

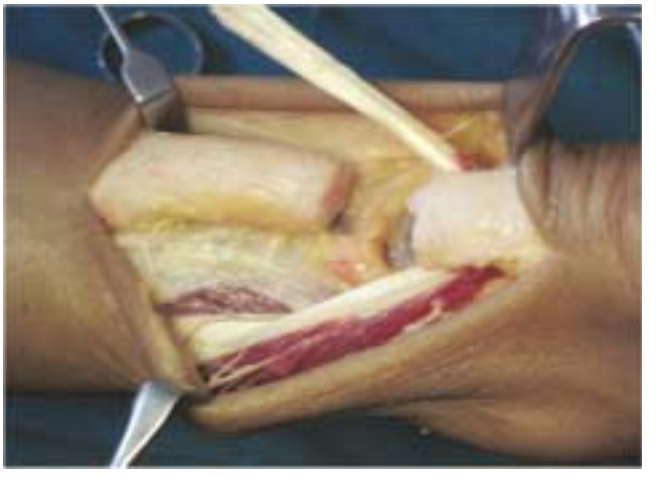
The patient is 59 years old male, milk-man by profession who belonged to poor socio-economic strata and used to climb the hill up and down to deliver milk. Histopathologic examination of surgical specimen showed degeneration. Eccentric loading of the muscle-tendon unit due to hill walking with poor running shoes and negotiating uneven terrain for many years might have caused repeated microtrauma to tendo-achilles. This is probably most important cause of structural failure of the tendon; over above likely insufficient vascularity as reported by others.

Conclusion

Spontaneous rupture of tendo-achilles is rare and it is usually presented many months after incident. This



Bilateral Rupture of Achilles Tendon Showing Palpable Gap



Repair of the Tendon with Peroneus Brevis Reinforcement Technique

presents a formidable challenge in surgical repair. The post-operative rehabilitation programme needs to be exhaustive and meticulous to achieve satisfactory ambulation.

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