



ORIGINAL RESEARCH PAPER

Plastic Surgery

BILATERAL ACHILLES TENDON XANTHOMA : A RARE CASE REPORT

KEY WORDS: Achilles Tendon Xanthoma, Low Density Lipoprotein, tendon sparing approach.

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ABSTRACT

Background: Xanthomas are rare, non-neoplastic lesions which occur due to defect in the LDL receptors leading to their accumulation in tendons and synovium. The prevalence of heterozygous familial hypercholesterolemia (FH) is approximately 1 in 500.

Aim: To study a rare case of bilateral achilles tendon xanthoma and its functional outcome.

Case Presentation: We presented a case of xanthoma over posterior aspect of both lower third legs just above the heel in an 18-year-old female, and diagnosis was confirmed by clinical examination ultrasound, for which a tendon sparing approach was planned. Postoperative treatment consisted of six weeks long leg cast immobilization. After 10 weeks the patient started walking without any difficulties.

Conclusion: Subtotal resection (also called as tendon sparing approach) is also a reliable option for tendon xanthoma with a good functional outcome. There is no need for reconstruction of tendon in every case.

Introduction:

Xanthomas are very rare slow growing benign tumors of the tendons^[1]. This is caused due to metabolic abnormalities in lipid metabolism. First step involves accumulation of low density lipoproteins in tendons. This is followed by conversion of low density lipoproteins to oxidised form of lipoprotein. Oxidised lipoproteins are then phagocytosed by macrophages leading to the formation of xanthomas. No data have been published on the incidence, but the benign bilateral Achilles tendon fat accumulation is a rare disease^[1,2,3]. It is mainly found in patients with heterozygous familial hypercholesteremia or in patients with cerebro tendinous xanthomatosis. FH is characterised by increased LDL cholesterol, tendon xanthomas, coronary disease and autosomal dominant transmission^[2].

We report a case of a patient having bilateral tendoachilles xanthoma not known with FH in which both tumors were resected with a tendon sparing technique. This differs from other report that described the necessity of tendon reconstruction following resection of large xanthomas^[3,5].

Case report:

A 35 year old woman presented to our clinic with chief complains of pain and swelling in both tendoachilles. They were gradually increasing in size .Finally she had difficulties in wearing foot wear and increasing pain on long distance walking. She had not suffered from any cardiac or neurological attacks. There was no familial history of hypercholesteremia. Initially FNAC was performed which suggested the lesion to be giant cell tumour. So patient was planned for excisional biopsy. X ray revealed no bony abnormalities, but soft tissue shadow over both lower third legs just above the heel. Ultrasonographic scan showed diffuse thickening of Achilles tendon with hypochoic areas and other small hypochoic confluences.



Figure - 1

Operative technique:

Surgery was performed with the patient in prone position and under spinal anaesthesia. An upper limb tourniquet inflated to 300mm of Hg was used. A midline incision was made over the lesion. On exposure of the mass, xanthoma was suspected and the tumour was carefully resected until vital tendon tissue was spared. In none of the leg, reconstruction was necessary. Postoperative treatment consisted of two weeks non weight bearing lower leg cast immobilisation followed by four weeks with lower leg weight bearing cast. After that patient was treated by physiotherapist to regain muscle strength and ankle mobility. The patient was able to walk pain free and wear footwear without any difficulties. She could perform bilateral single foot heel rise. Strength assessment of ankle plantar flexion with a hand held dynamometer revealed a strength of 197 Newton at right ankle and 205 Newton at left angle. This corresponds to normal plantar flexion strength for a patient of that age. The wound was closed in layers.

Pathology report after surgery confirmed it to be xanthoma.

Discussion:

Achilles tendon xanthomatosis is a rare disease. It is strongly linked to FH. Interestingly our patient was not known with FH. Junyent^[6] et al compared Achilles tendon sonography in patients with FH and in patients with non-FH dislipidemias. It appeared that sonographic xanthomas were only found in patients with FH. Therefore they concluded that Achilles tendon xanthomatosis might be helpful in the diagnosis of FH. Moreover it may also be helpful in preventing cardiovascular disease as several authors suggested that xanthomas are associated with a high risk for cardiovascular disease in patients with FH. This is supported by a review of Fahey et al^[2] in which the authors showed that a majority of patients with Achilles tendon xanthomas had a family history of coronary disease. In the present case the lipid profile was normal and there is no family history of coronary artery disease. It is characterized by a local concentration of multinucleated giant cells, lipid-laden foamy macrophages, and other inflammatory cells in response to cholesterol deposition in tissues. Bilateral Achilles tendon involvement was seen in 90% of cases .They are relatively common on the skin especially on the eyelids. They are frequently seen on tendons and synovium and they usually involve the extensor tendons of the hands, achilles tendons, and patellar ligaments. They typically occur at the third decade with a female to male ratio as 4:3^[2]. Clinical manifestations of Achilles tendon xanthomas depend on the lesion sizes. The smaller lesions are often asymptomatic. The larger lesions are clinically apparent and manifest as cosmetically disfiguring masses which can impair ambulation and cause local pain^[1]. Imaging studies are useful tools in diagnosing xanthoma. On X-rays tendon xanthomas are shown either as an abnormal tendon thickening or soft tissue noncalcified

masses with a nonspecific appearance. The ultrasound and MRI were more helpful and specific to characterize this condition. Surgical treatment of achilles tendon xanthomas is rare and is usually limited to those patients who have severe disfigurement, pain or problems with mobility caused by the mass. Large swellings of tendoachilles can result in weakness of plantar flexion and difficulty in walking and hence requires surgery also. It includes either 1) Complete excision and reconstruction of the defect or 2) Subtotal/Partial excision to preserve the function of the achilles tendon and for less complications the lesions are often partially removed.

Carranza-Bencano et al stated in case of severe xanthomas infiltration, total resection is the best procedure to avoid recurrence^[1]. Tendon can be reconstructed with peroneus brevis or FHL or tibialis posterior or fascia lata. We performed the resection of tendon sparing only forty percent of the tendon. The patient started weight bearing after two weeks where as others reported non weight bearing periods of six weeks^[3] or almost nine weeks^[5]. More over a subtotal resection is associated with fewer complications compared to total excision with reconstruction. It has been suggested that a subtotal resection leads to a higher recurrence rate of the tumor. In a follow up of 12 month our patient had no sign of recurrence of Achilles tendon swelling. However recurrence in future cannot t be excluded.

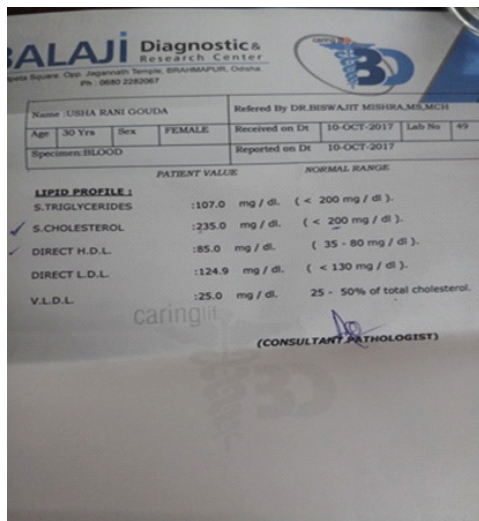


Figure-2

Conclusion

Xanthomas are benign conditions. In our case, it was not associated with familial hypercholesteremia. It presented as enlarged mass over posterior aspect of both lower third legs just above the heel (Figure 1). FNAC was misleading giving a diagnosis of giant cell tumor. Excisional biopsy confirmed it to be xanthoma. We managed the case successfully with subtotal excision of xanthomas, and later above knee plaster slab applied with foot in neutral attitude. Later patient was followed up every 4 weeks for further recurrence, till date she had no complications and partial weight bearing started with the help of walker after 8 - 12 weeks.

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