Treatment of Large Recurrent Bilateral Xanthomatosis of Achilles Tendon - A Case Report

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Abstract

**Introduction:** Xanthomas of the Achilles tendon are a rare interesting orthopaedic condition. There are very few articles dealing with the treatment of recurrent xanthomatosis of tendoachilles. Here we report this patient with bilateral recurrent xanthomatosis of tendoachilles.

**Case Report:** A 37 year old male patient presented with multiple lesions in the body with bilateral swelling in the tendoachilles. The swelling was excised before three years elsewhere and there was recurrence of the lesion after 6 months subsequently. There was ulceration on the right side. The patient was treated by total resection of the lesion and reconstruction using tensorfascialata graft.

**Conclusion:** Complete excision of the lesion is needed to reduce recurrence. Reconstruction of the defect is a challenge due to the large defect. Tensorfascialata graft results in good functional outcome of the patient even in large defects.

**Keywords:** Recurrent Xanthomatosis, Reconstruction with tensor fascialata.

Introduction

Xanthomatosis is a disorder which is produced due to disturbance in lipid metabolism [1, 2, 3, 4, 5, 6]. Xanthoma of the tendon may involve the tendon but can involve the ligament, fascia, or periostium [2]. There is a predilection for metacarpophalangeal joints but the Achilles tendon and patellar tendon may also be involved [2, 6, 7]. Less commonly the lesion may affect the triceps and extensor tendon of toes. A strong tendency to recurrence was observed in surgically removed Achilles tendon lesions [4,6]. Large swelling of the tendocalcaneus results in weakness of plantar flexion and difficulty in walking hence surgery is carried out for these lesions.

Case Report

This patient came with complaints of difficulty in walking and bilateral swelling in the heel. Patient was apparently normal 10 years back, during which patient developed bilateral swelling in
the heel, swelling was insidious in onset, gradually progressive not associated with fever and no history of trauma. Patient had swelling in sacrum, left elbow, right knee and in dorsum of left foot. Patient was treated by excision of bilateral swelling in tendoachilles elsewhere. Patient developed recurrence of the swelling six months after the excision. The swelling was increasing in size and ulceration occurred on the right ankle. There was no discharge from the ulcer. There was no history of familial hypercholesterolemia.

On examination the patient was moderately built with multiple small plaques on the upper eyelids. The swelling in both the heel were measuring about 19.5 cms in length and 6.5 cm width. The non-tender swelling was firm in consistency with multiple nodules. The swelling were mobile. There was an ulcer measuring about 3x4 cm on the right sided lesion. The margins were sloping there was no discharge from the ulcer. There were 10 degrees of dorsiflexion and 20 degrees of plantar flexion in both right and left ankle. Gait was short stride gait. Length was very short and there was no heel to toe progression

Investigations: The blood count was normal. ESR was 4, blood glucose was 105mg/dl, uric acid was 3.2mg/dl, cholesterol of 150mg/dl and triglycerides 138 mg/dl. Ultrasound showed diffuse nodular thickening in the tendoachilles with hypoechoic areas suggestive of xanthomata. MRI showed diffuse speckled appearance on both axial images. This speckled appearance was more obvious on T1fat suppressed images which is suggestive of xanthomatosis

Treatment

Patient was started on lipid lowering drugs before surgery. Since swellings other than Achilles tendon were asymptomatic they were not excised. Patient was operated under spinal anaesthesia with 25cm midline incision. On exploration the tendon was replaced by yellowish hard nodular mass extending from the musculotendinous junction to the calcaneus. The lesion was measuring about 19.5 cms in length and 6.5 cms in width (maximum at the base). Since there was total involvement of the tendon it was resected completely. Tensor fascia lata graft was harvested from the opposite thigh and it was sutured distally to the calcaneus by passing drill holes through bone and proximally to the musculotendinous junction using nonabsorbable sutures

Below knee plaster in plantar flexion was given postoperatively. Partial weight bearing was started after 12 weeks. Four months after the surgery patient was able to bear full weight. Surgery on the right ankle was done after 4 months. The ulcer on the right side was found to have healed completely. Intraoperatively the skin was scarred and adherent to the swelling, the scarred skin was excised together with the swelling. The postoperative protocol and rehabilitation remains the same on right side.

Clinical assessment was done after 9 months post surgery on left ankle and 5 months on right side. There was 20 degrees of dorsiflexion and 40 degrees of plantar flexion on both ankles. There was no calf muscle atrophy. Patient was able to walk
Discussion

Xanthomatosis of the ankle is a rare lesion and tends to recur after incomplete excision as stated by Tetsuya et al [3]. The tendon lesions are invariably multiple and may be associated with other lesions like tuber xanthoma, xanthelasma of the skin, arcus cornea and coronary artery disease [1]. Although xanthoma is a lesion that occurs due to disturbance of lipid metabolism S.K Roy [2], reported that the lesion can also occur in patients without hypercholesterolemia. Histopathology: Microscopic examination showed foam cells, polyhedral cells with pale vesicular cytoplasm with round shaped nuclei. The stroma consist of stromal cells with granular cytoplasm and oval nuclei. Numerous vesicular lipid filled spaces were found in the tissues. The tumour was surrounded by fibrous capsule. Giant cells were present in the areas of hemorrhage. There were numerous fibrous septae which divided the tumour into lobules. The microscopic diagnosis was xanthomata.

Conclusion

Xanthomatosis of ankle is a rare interesting orthopaedic condition. Recurrence is more common in these lesions due to incomplete removal of the lesion. Reconstruction of the defect after complete excision remains challenging task. Though variable options are available reconstruction using tensor fascialata graft because the defect was larger and tendons like peroneus brevis and flexor hallucis longus would not be sufficient for reconstruction. We did not consider allograft because it is not available to us. We believe that autograft will integrate better than an allograft. It may be felt that Tensor fascia lata is a much thinner and less robust material compared to native tendoachilles but we have shown in this patient that graft hypertrophies over time. This is in agreement with the study by Tetsuya tomita et al [3]. The American ankle and foot society score was 96/100 which was comparable to the study by Tetsuya tomita et al [3].

Clinical Message

Xanthoma of the Tendocalcaneus has to be kept in mind for tumourous swellings arising in the tendocalcaneus. They need to be totally resected to avoid recurrence and gaps of even large proportion can be reconstructed using tensor fascialata giving excellent results.
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