Bilateral achilles tendon xanthomas and the role of MRI scans

Published on 27.06.2005

DOI: 10.1594/EURORAD/CASE.3284
ISSN: 1563-4086
Section: Musculoskeletal system
Technique: MR
Case Type: Clinical Cases
Authors: Prasanna VK, Kadir UA, Geary NPJ, Maffuli N
Patient: 67 years, female

Clinical History:

In this report, a case of bilateral achilles swelling in a 67-year-old female patient, is reviewed. The diagnosis was established using both clinical & imaging modalities. Various treatment options were discussed, and the diagnosis was confirmed by histology. The role of MRI is also explored in this report.

Imaging Findings:

The patient presented to the senior author's foot & ankle clinic with bilateral swellings in the achilles area, which had developed over the last two years. The swellings had progressively increased in size, caused discomfort to the patient whilst walking. Patient did not complain of any other swellings, and there was no family history of similar swellings or of hypercholesterolaemia. On examination, the patient was found to be thin-built and had arcus senilis in both eyes, no xanthelesma were found. No significant cardiac signs and symptoms were elicitable. An examination of the achilles areas revealed the presence of a fusiform-shaped swelling measuring 15 x 3 x 3.5 cm on the left side and a swelling of similar shape measuring 12 x 6 x 3 cm on the right side. A blood examination showed type 2A hypercholesterolaemia. Plain X-rays clearly show the extent of the soft-tissue swelling around the achilles area (Fig. 1a). MRI scans were obtained which included T1 and T2 sequences of sagittal and axial sections, stir sequences and a post-contrast T1 sequence (Figs. 2a-d). These scan findings showed that the masses had infiltrated the tendons, and commenced at the musculo-tendinous junction. Both the masses were of a similar appearance and of almost a low signal on all sequences. A small amount of high signal was seen on the lateral aspect of the left achilles area. They were well-defined and were seen to displace the surrounding soft-tissues. No other abnormalities were seen in the calf, ankle or bone marrow. The lesions definitely did not appear benign.

Discussion:

Bilateral achilles tendon xanthomas are rarely mentioned in literature; till 1973, only 173 cases were reported, of which only 15 patients had had surgical excision, and 6 of them had had surgical reconstruction. It has important ramifications in internal medicine and dermatology. Although not found in our patient, other xanthomas of the tendons and skin and/or cardiovascular disease are closely associated. The patients do have either type 2 or type 3 hyperlipoproteinaemia. Most of them regress after treatment with hypolipidaemic drugs; some of them have to be resected. There are only about half a dozen cases in the literature with excision and tendon reconstruction. Our patient had to undergo exploration, resection and reconstruction in view of the size of the swellings and the symptoms caused. They were explored sequentially within a gap of three months, the left side first. The patient returned to full activity after six weeks of immobilisation on each side. The patient was started on hypolipidaemic drugs. Histological studies revealed that the swellings were tendon xanthomas (Figs. 3a and b). An early diagnosis is imperative as it may avoid the surgery in early stages and also in view of cardiovascular complications. In patients...
presenting with swelling in the achilles area, the possibility of tendon xanthomas should be considered as it may avoid more sinister complications if an early treatment with hypolipedaemic drugs is instituted. The MRI scans revealed a low signal through all sequences. MRI, although it can define the masses accurately with specific anatomical information, is of low value in specifying the underlying pathology. The MRI and the US technique provide equal information on the anatomy of the achilles tendon. As an abnormally high signal intensity in the xanthoma was found in very few patients, the value of a specific pathological diagnosis is limited.

**Differential Diagnosis List:** Bilateral achilles tendon xanthomas.

**Final Diagnosis:** Bilateral achilles tendon xanthomas.

**References:**


Description: Bilateral lateral ankle X-rays clearly showing the well-defined soft-tissue swelling. Origin:
Description: A T1-weighted image showing the sagittal section of left achilles area. 

Origin:
Description: A T2-weighted image showing the sagittal section of left achilles area. Origin:
Description: A STIR sequence image showing the sagittal section of the left achilles area. Origin:
Description: The axial T2 image showing the bilateral achilles area at the level of insertion. Origin:
Figure 3

Description: An image showing the histological features of the left achilles swelling. Fat cells interspersed with fibrous material and matrix are seen. Origin:
Description: An image showing the histology of the right achilles specimen, confirming the same.
Origin:
Figure 4

Description: An image showing the histology of the specimen from the right achilles area, with the same features as above: fat cells interspersed with fibrous cells and matrix. Origin: