

Achilles tendon enthesopathy in ochronosis

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A 60-year-old man presented with pain in the back of right ankle of 1 year duration. The pain was associated with walking and relieved by rest. He also complained of backache of long duration. On clinical examination his gait was awkward with short stance phase. There was thickening of the tendoachilles with nodularity. There was a palpable gap felt along the course of the tendon 2 cm proximal to the bony insertion, indicating rupture (Figure 1). He also had smooth kyphosis and reduced movements of the lumbosacral spine. On further examination he had thickening of the pinna bilaterally.

A clinical diagnosis of spondyloarthropathy was made and he was subsequently investigated.

His hemogram was within normal limits. Lateral radiograph of the ankle showed small focus of calcification in the region of Achilles tendon with increased thickness (Figure 2A). Radiograph of lumbosacral spine revealed intervertebral discal calcification, which was suggestive of ochronosis (Figure 2B). This was further confirmed by urine high-performance liquid chromatography (HPLC) for homogentisic acid. High-resolution ultrasound (US) examination of tendoachilles showed loss of fibrillary pattern in the tendon, increased thickness, small focus of calcification, increase in size

of retrocalcaneal bursa, and complete rupture of the tendon (Figure 3). There were also foci of chunky calcifications at the site of tendinous insertion with posterior acoustic shadowing (Figure 4). The calcification that was seen on US at the site of tendinous rupture was not seen on plain radiograph.

Discussion

Spondyloarthropathy is a common clinical condition, which has multiple etiological factors such as ankylosing spondylitis,

Reiter's disease, psoriasis, and inflammatory bowel disease. Ochronotic spondyloarthropathy is associated with kyphotic deformity of the spine with polyarthrititis. Ochronosis is an autosomal recessive disease with a prevalence of about 1 : 1,000,000.^[1] Plain radiograph of lumbosacral spine reveals intervertebral discal calcification in almost all the patients with ochronosis after middle age, as was seen in our case.

Spontaneous tendon ruptures are quite a common occurrence in these patients. Frequently they present with tendoachilles rupture as a first clinical manifestation. Findings noted at clini-



Figure 1: Clinical photograph showing gap (arrow) along the course of achilles tendon indicating rupture.

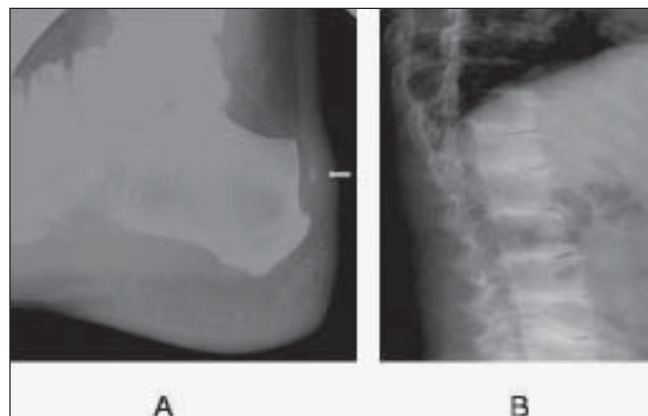


Figure 2: Lateral radiograph of the ankle (A) and dorsolumbar spine (B) showing thickening of the Achilles tendon with a focus of calcification (arrow) and intervertebral disc calcification.

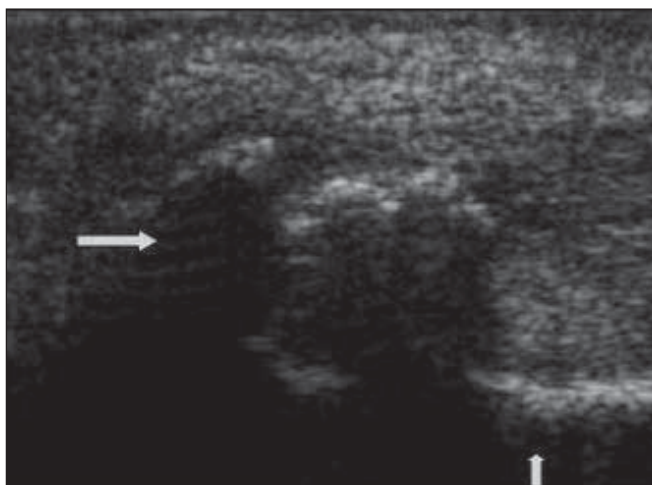


Figure 3: Longitudinal US scan showing complete rupture of the tendon (horizontal arrow) with a focus of calcification (vertical arrow indicates calcaneum)

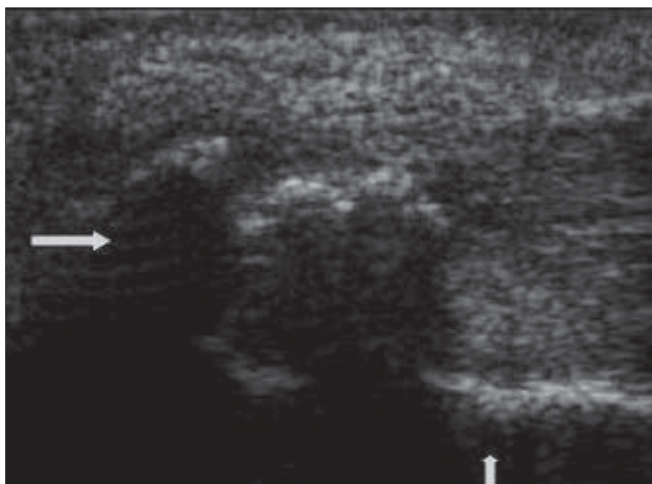


Figure 4: Longitudinal US scan at the level of tendinous insertion showing foci of (horizontal arrow) chunky calcifications (vertical arrow indicates calcaneum)

cal evaluation alone are often suggestive of the diagnosis of acute rupture of the Achilles tendon. However, because the flexor, peroneal, and plantaris tendons also contribute to plantar flexion and can compensate, to some degree, for an injured Achilles tendon, the clinical examination can be inconclusive. Similarly, edema caused by an acute tear can oblit-

erate a tendon defect, which renders palpation ineffective. Researchers^[2,3] have reported that more than 20% of full-thickness tears can be missed clinically at initial presentation. When the clinical examination is equivocal or there is a delay in presentation, further evaluation with imaging, such as ultrasonography, aids the diagnosis. The differentiation of full-thickness tears from less severe pathologic findings is of major importance.^[3] Full-thickness tears are treated with surgical repair or, in some cases, with casting with the ankle in the talipes equinus position. A partial-thickness tear or tendinosis is usually successfully treated by using conservative measures, with surgery undertaken only after a failure of conservative therapy.^[4]

Plain radiography has a limited role in diagnosing early tendinitis, in which an US detects early calcification and increased thickness of the tendon as in our case. Magnetic resonance imaging (MRI) is the other imaging modality for the evaluation of tendoachilles enthesopathy, which has the advantage of detecting the insertional bone edema associated with enthesopathy.^[5] US examination is equal to or more sensitive than MRI in diagnosing early enthesopathy.^[6] An US study has also the advantage of detecting early calcification associated with tendon ruptures as well as the advantages of availability, low cost, and reliability, though it requires considerable expertise in diagnosing tendon ruptures.

In conclusion, when middle-aged patients present with chronic backache and enthesopathy, one should keep in mind the possibility of ochronosis, which can be confirmed by urine chromatography for homogentisic acid. Evaluation of the extent of tendon rupture in these patients can be made with the help of ultrasonography, which is cost-effective.

References

1. Cheria S. Palmoplantar pigmentation: A clue to Alkaptonuric ochronosis. *J Am Acad Dermatol* 1994;30:264-5.
2. Salzmann CL, Tearse DS. Achilles tendon injuries. *J Am Acad Orthop Surg* 1998;6:316-25.
3. Reinherz RP, Zawada SJ, Sheldon DP. Recognizing unusual tendon pathology at the ankle. *J Foot Surg* 1986; 25:278-83.
4. Hartgerink P, Fessell DP, Jacobson JA, van Holsbeeck MT. Full versus partial thickness Achilles Tendon Tears: Sonographic accuracy and charecterisation. *Radiology* 2001;220:406-12.
5. Balint PV, Kane D, Wilson H, McInnes IB, Sturrock RD. Ultrasonography of enthesal insertions in the lower limb in spondyloarthritis. *Ann Rheum Dis* 2002;61:905-10.
6. Kamel M, Eid H, Mansour R. Ultrasound Detection of Heel Enthesitis. A Comparison with Magnetic Resonance imaging. *J Rheumatol* 2003;30:774-8.