

Unusual and memorable.....

Case Number 26: Massive cholesterol crystal deposition: unusual location in rheumatoid arthritis

Series editor: Gary D Wright

A 71 year old white man with seropositive erosive rheumatoid arthritis (RA) for 28 years presented with swelling of the left ankle that had been increasing in size for three years and was now interfering with shoe fitting. On examination a 2.5 cm diameter non-inflamed, well circumscribed, firm mass—initially presumed to be a rheumatoid nodule or tense synovial cyst—was noted on the anteromedial aspect of the ankle joint. Ultrasonography (US) of the swelling showed a well circumscribed hypoechoic collection of homogeneous echo texture adjacent to the tibialis anterior tendon (fig 1). An 18 gauge needle was passed into the swelling under ultrasound guidance and 0.5 ml of thick caseous material was obtained. Polarised light microscopy demonstrated the presence of a large number of crystals between 10 and 100 μm in diameter, moderately positively birefringent in polarised light, with a characteristic squared shape of “stacked plates” with notched corners (fig 2). The patient declined surgical excision but opted for alternative footwear.

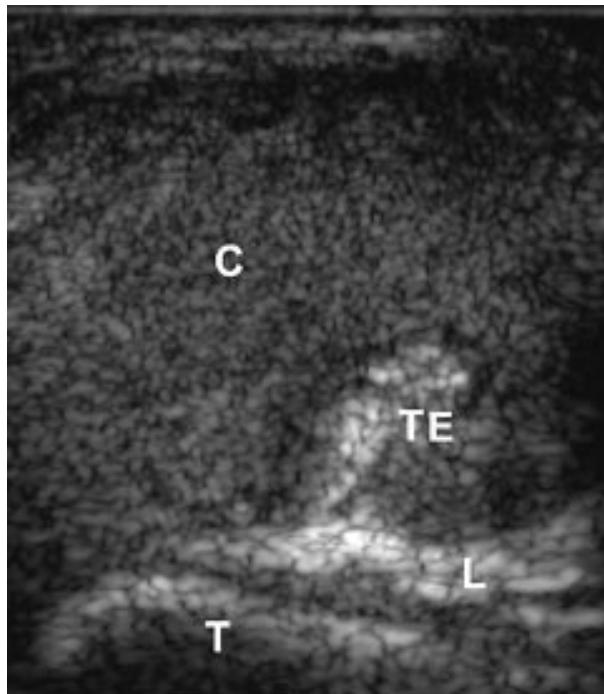


Figure 1 Transverse ultrasound image. C, hypoechoic mass; T, tibia; TE, tibialis anterior tendon; L, medial collateral ligament.

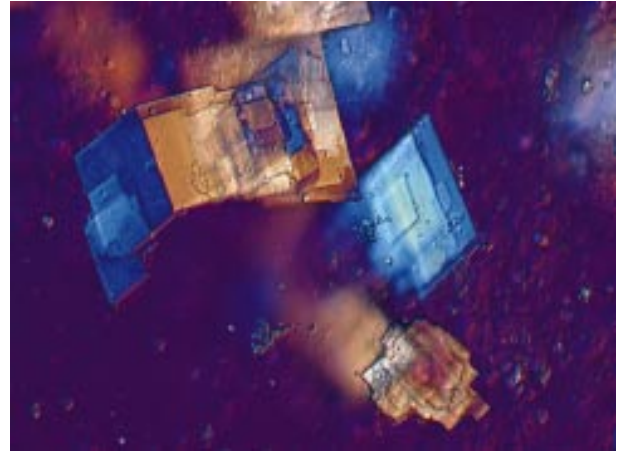


Figure 2 Differential interference contrast microscopic image of the plate-like crystals ($\times 40$), typical of cholesterol monohydrate crystals.

Cholesterol crystal deposition has been described in structures with a synovial lining but is very rarely detected in tendon sheaths. Lipid studies were performed and a cholesterol of 6.3 mmol/l (normal 3.9-5.5) and high density lipoprotein cholesterol of 0.95 mmol/l (normal 0.9-1.9) was noted. Tendon xanthoma of the ankle occur mainly in the Achilles tendon and often in association with severe hereditary hyperlipidaemic states, though these deposits are usually intratendinous. In this case the patient had a mild hyperlipidaemia with an extratendinous cholesterol deposition demonstrated on ultrasound that is more likely to have developed in response to local inflammation and recurrent trauma in long standing RA. US allowed the extratendinous location of the cholesteroloma to be demonstrated before diagnostic aspiration, which was performed under US guidance.

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