Tendon involvement in gout: utility of ultrasonography

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A 60-year-old male was referred to our Rheumatology Department with a 7 month history of pain in his right ankle. The patient had a long-standing diagnosis of tophaceous gout with bad compliance to urate-lowering therapy (ULT). Physical examination revealed multiple tophi overlying the first metatarsophalangeal joint of both feet and over the interphalangeal joints of hands. There was tenderness and swelling of right ankle and medial midfoot. Resisted dorsiflexion of the ankle exacerbated the pain. An ultrasound (US) examination of the right ankle was performed and demonstrated an enlargement of tibialis anterior tendon with multiple hyperechoic foci in the body of the tendon suggestive of tophi (Figure 1). There was no synovitis. Allopurinol was started and dose was increased until serum urate (SU) levels reached the established target of <5mg/dL after 4 months. The patient was also educated concerning the importance of adherence to treatment. Sustained normouricaemia was achieved after 9 months of therapy. Furthermore, the patient's symptoms also improved. By this time, another US was performed showing a significant reduction in number and size of the hyperechoic foci within the tendon (Figure 2).

Gout is an inflammatory arthritis caused by deposition of urate crystals forming tophi, which are often found in the synovial fluid. Tophi are composed of calcium pyrophosphate dihydrate (CPPD) crystals, and they can lead to destructive arthritis and chronic nodules. The presence of tophi in the tendon can cause tendinitis and pain, which is a clinical finding in gout. The US examination is a useful tool for identifying the presence of tophi in the tendon, as shown in this case study. The US can differentiate between tophi and other conditions that might cause tendinitis. Allopurinol is the first-line treatment for gout, and it is important to ensure adherence to treatment to achieve sustained normouricaemia.
In the case we present, US assessment contributed to suggest the diagnosis of tophi as they were located within the tendon, a site more difficult to recognize the crystal deposits. Additionally, US, along with clinical and laboratory data, helped to monitor the subsequent response to ULT. A significant reduction in size and volume of tophi was observed after sustained normouricaemia.

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