



## Brief clinical history:

Male, 52 years old, with no history of interest or relevant sports history, goes to the emergency room for 2 months of pain over the right heel, more incapacitating in the morning, with lameness and pain that is exacerbated when climbing stairs or walking at a good pace uphill.

## Misleading elements:

We presented a case of calcification of the Achilles tendon diagnosed through the ultrasound performed by the Emergency physician (EP). The calcification of the Achilles-tendon is the evolution of a chronic tendinopathy or tendinosis. The histological changes of tissue degeneration that characterize the chronic tendinopathy can be observed echographically and include intrasubstance tears, changes in the echo-structure, infiltration by neovessels and intratendinous calcification.

## Helpful details:

We appreciate hypersensitivity and pain on palpation in the tendon insertion, noticing a thickening and swelling in that area. In the clinical ultrasound performed by the EP there is evidence of an increase in the thickness of the Achilles tendon of 0.98 cm in diameter (**figure 1**), with hyper-densities that cause posterior acoustic shadows in the area of Achilles tendon insertion at the level of the calcaneus together with an increase in vascularity (**figure 2**). All this indicates an acute enthesopathy of the Achilles tendon as result of the evolution of the calcifying tendinosis that the patient suffered. Was prescribed rest, ice, NSAID, high heel and lately was resected the calcification by ultra-minimally invasive, eco-guided surgery. We have an ultrasound Sonosite M-Turbo, HFL50 probe 6-15 MHz.

## Differential and actual diagnosis:

The calcification of the Achilles tendon is the evolution of a chronic tendinopathy or tendinosis that clinically produces pain in the middle third of the tendon or in its most distal part, sometimes specifically in the area of tendon insertion with the calcaneus, as is the case that we present. Some of its causes are overuse and trauma, more often the "repetitive microtrauma", in which a demand is maintained on the tendon and this exceeds its capacity for adaptation and repair, while structural changes are taking place in it, although we should not forget the association with biomechanical alterations such as hyperpronation or forced dorsiflexion.

## Educational and/or clinical relevance:

What characterizes chronic tendinopathy is the presence of degenerative changes including disorganization of the collagen fibers, increase of the fundamental substance and neovascularization. Histological changes of tissue degeneration can be observed ultrasonographically and include intrasubstance tears, changes in the echo-structure, infiltration by neovessels, intratendinous calcification and irregularities in the bone cortex or in the area of tendon insertion.

Clinical ultrasound performed by the trained EP plays a fundamental role in the assessment of the Achilles tendon due to its low cost, dynamic nature, because it is accessible and non-invasive and allows an excellent contralateral comparison. Ultrasound allows us to reduce waiting times in the care and diagnosis of the patient and allows us to reduce costs by rationalizing complementary tests and achieve the routing of the patient to the appropriate levels of care.



**Figure 1:** Increase in the thickness of the Achilles tendon



**Figure 2:** Increase in vascularity of the Achilles tendon