

Comparative ultrasonographic evaluation of the achilles paratenon in symptomatic and asymptomatic subjects: an imaging study

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Achilles tendon painful symptoms are a very frequent clinical picture in Sports Medicine as well as in the common clinical practice.

One of the most widely used modality to diagnose pathologies of the achilles tendon is ultrasonography (US), which is fast, repeatable, and allows dynamic assessment of the tendon gliding. However, literature studies demonstrate that only moderate correlation exists between the US appearance of the tendon and the clinical assessment of several achilles tendinopathies. For this reason we have recognized the need to consider the paratenon tissue as an integral part of the picture.

In this study, sonography was used to evaluate 22 subjects complaining pain in the mid-portion of the achilles tendon and 22 healthy subjects; moreover the Victorian Institute of Sport Assessment-Achilles questionnaire, a reliable clinical index of Achilles tendinopathy severity, was administered to all participants.

A significant inter-group difference was found in terms of paratenon thickness ($p=0.0001$). Moreover paratenon thickness was found to be positively correlated with Achilles tendinopathy severity and duration of symptoms. These findings confirm those of Harris and Leung, who found alterations in signal intensity and paratenon thickening in patients with tendinitis.

In light of these results, we suggest a carefully analysis of paratenon thickness when evaluating patients with Achillodynia using ultrasound. We assume that an altered paratenon (1.27mm or above) can be not only a significant indicator of Achilles tendinopathy but, in line with the theory of Perez, it can also be a precursor sign of tendon alteration. Moreover it can be postulated that most of the symptoms are generated by the stretching of the free nerve ending of the paratenon rather than by morphological alteration of the tendon.

Keywords

Paratenon, crural fascia, tendinopathy.