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Stenosing tenosynovitis

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Translated from French to Italian by Chiara Dellabianca

KEYWORDS
Tenosynovitis;
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Abstract Tenosynovitis refers to an inflammatory condition involving the synovial sheath of a tendon. Stenosing tenosynovitis is a peculiar entity caused by multiple factors, including local anatomy, mechanical factors, and hormonal factors. The main forms include de Quervain tendinopathy; trigger finger (stenosing tenosynovitis involving the flexor digitorum tendons); stenosing tenosynovitis of the extensor carpi ulnaris, extensor carpi radialis, or extensor comunis tendons; stenosing tenosynovitis of the flexor hallucis tendon; and stenosing tenosynovitis of the peroneal tendons. The cardinal finding on ultrasonography is the presence of a thickened retinaculum or pulley that constricts the osseofibrous tunnel through which the tendon runs.

Sommario Le tenosinoviti sono infiammazioni delle guaine sinoviali dei tendini. Le tenosinoviti stenosanti sono delle entità particolari, condizionate da molteplici fattori. Si tratta di patologie favorite dall'anatomia locale, da fattori meccanici ed ormonali. Le principali tenosinoviti stenosanti sono: la tendinopatia di de Quervain, la tenosinovite stenosante dei tendini flessori delle dita o dito a scatto, la tenosinovite stenosante del tendine estensore ulnare del carpo, dei tendini estensori radiali del carpo e degli estensori comuni, la tenosinovite stenosante del tendine flessore dell'alluce, la tenosinovite stenosante dei tendini peronei. La loro diagnosi si basa sull'ecografia, che mostra un segno cardine: l'ispessimento del retinacolo o della puleggia rispetto al tendine ed il suo carattere stenosante.
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Basic features of stenosing tenosynovitis

Tenosynovitis is characterized by inflammation involving the synovial sheath of a tendon. It can have various causes, including inflammatory processes associated with rheumatic disease, infectious processes, primary tumors of the synovial sheath, hormonal and mechanical factors.

Stenosing forms of tenosynovitis are peculiar entities influenced by various factors—anatomical, mechanical, and in some cases hormonal. Their diagnosis is based on typical sonographic findings of hypertrophy of a retinaculum or pulley, which constricts the osseofibrous tunnel through which the tendon runs and reduces movement of the tendon during dynamic maneuvers.

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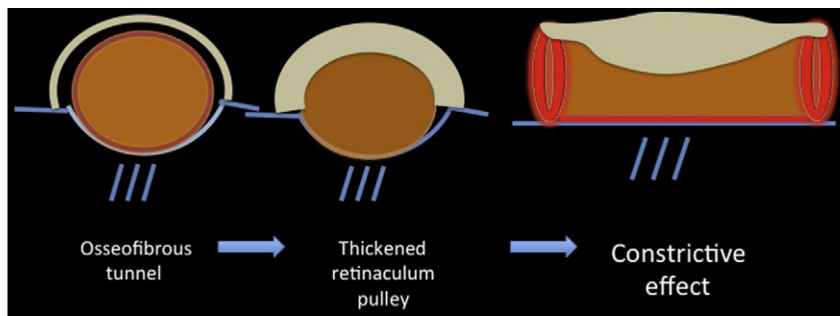

Figure 1 Schematic of osseofibrous tunnels. Thickening of the retinaculum or the pulley exerts a constrictive effect on the tendon.

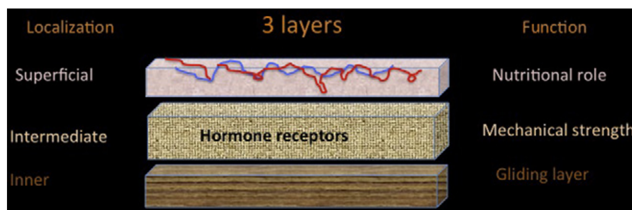

Figure 2 Schematic of the 3 histological layers of the pulleys and the retinacula.

A disorder favored by local anatomic factors

Stenosing tenosynovitis typically affects tendons that run through osseofibrous tunnels, each enclosed in its own synovial sheath. The tunnel itself lies over cortical bone and is covered by a structure referred to (depending on the location) as a pulley or retinaculum (Fig. 1).

The pulleys of the flexor digitorum tendons and the retinacula of the wrist and ankle are histologically identical. They consist of three layers [1] with distinct structural and functional features (Fig. 2):

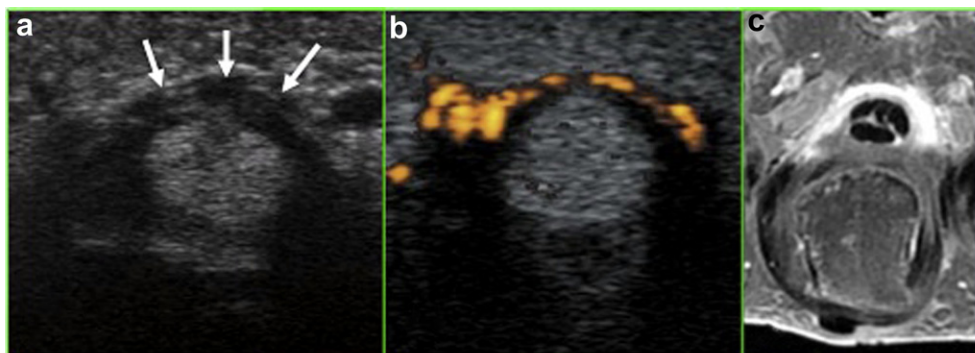

Figure 3 Trigger finger: Axial ultrasound image reveals hypertrophy of the A1 pulley (arrows) (a), hypervascularization on Doppler imaging (b), contrast uptake by the A1 pulley after injection of gadolinium during MR imaging (c).

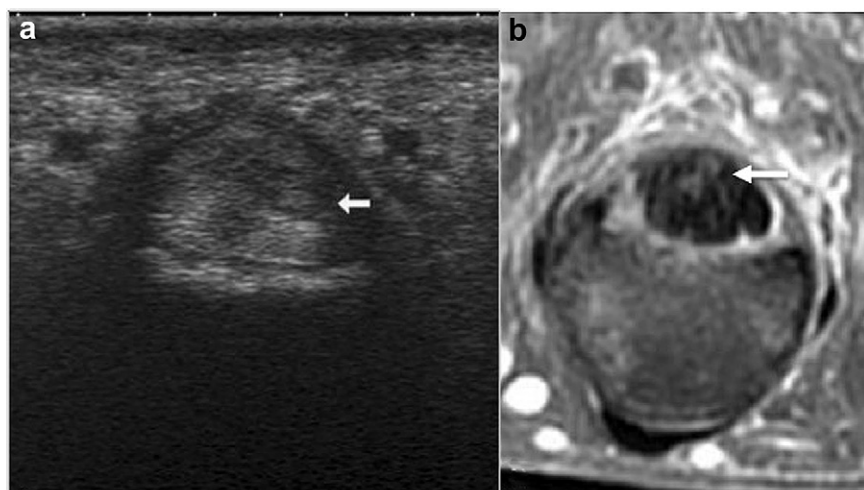

Figure 4 Tendinosis associated with trigger finger. The presence of an intratendinous nodules is manifested by a hypoechoic image on sonography (a) and hyperintensity on MRI (b).

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