

Tendinitis And Tenosynovitis - A Pictorial Essay.

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INTRODUCTION:

High resolution ultrasound of the tendons has become a very rewarding technique to diagnose common and uncommon disorders of these structures. Due to the superficial location of the majority of the tendons, they are easily approached by the transducer. Further ultrasound guided biopsy can be done if necessary. Comparative study with normal side, dynamic scanning and graded compression technique can be used to provide additional information. This technique is however limited by presence of artifacts like tendon anisotropy.

MATERIALS AND METHODS:

This was a retrospective study of 40 cases, done at Dr D.Y. Patil Hospital, Medical College and Research Centre, Pimpri.

Ultrasound scanner used was GE Logiq 400 PRO Series with 11 MHz linear transducer.

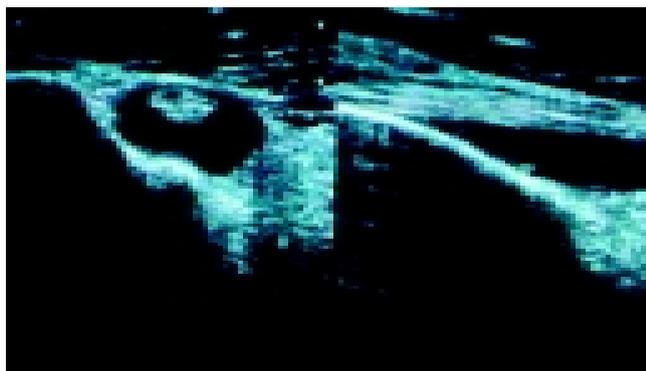


Figure 1

ACUTE BICEPS TENOSYNOVITIS

- Image shows a short and long axis image of the biceps tendon with a halo of anechoic fluid surrounding the biceps tendon in the bicipital groove. Fluid gravitates into the inferior triangular recess.

PICTORIAL PRESENTATION OF CASES:

A pictorial presentation of few of the characteristic cases is presented.

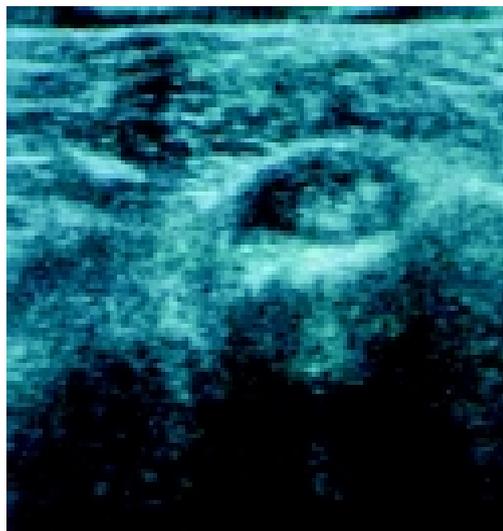


Figure 2: CHRONIC BICEPS TENOSYNOVITIS

- Echogenic fluid surrounds the biceps tendon in the short axis view. This can be easily missed unless carefully examined. It is usually as a result of chronic tendinitis or hemorrhage.

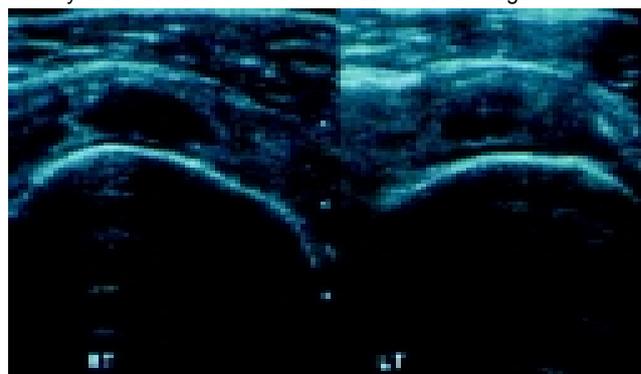


Figure 3: NON - CALCIFIC DEGENERATIVE SUPRASPINATUS TENDONITIS WITH TEAR.

- A thickened, hypoechoic bulky and enlarged supraspinatus tendon is seen with a focal central defect bilaterally. This is the consequence of a compromised bony acromial arch with an intrasubstance tear.

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Figure 4
CALCIFIC SUPRASPINATUS TENDONITIS
 - Bright echogenic focus in the belly of supraspinatus with posterior acoustic shadowing. This occurs usually as a result of chronic rotator cuff injury -mostly occupational. Radiograph of the shoulder AP view shows the calcification.

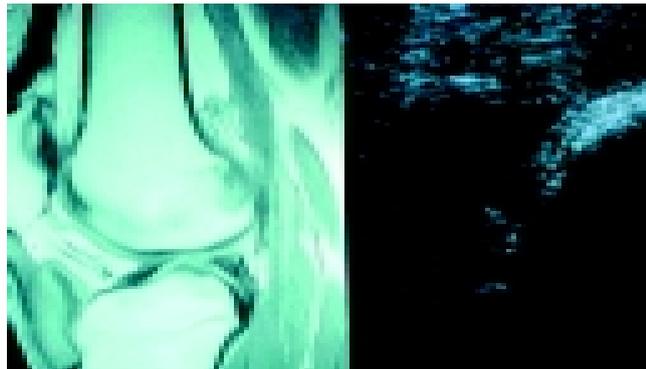


Figure 5
PATELLAR TENDINITIS [ligamentum patellae tendinitis]
 - Grossly enlarged ligamentum patellae in its entire length on the sagittal long axis view. Findings were confirmed on the T1W sagittal MR image on the left side of the image.

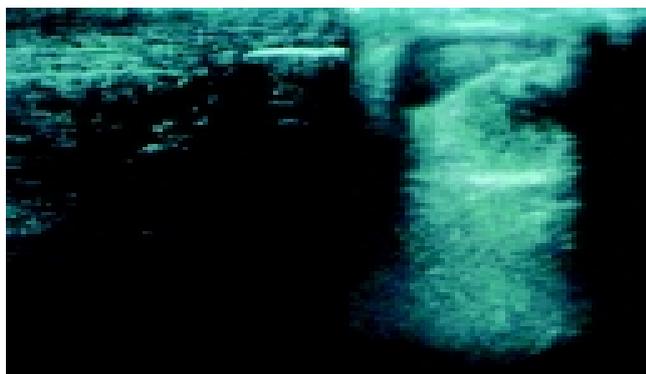


Figure 6
ACHILLES TENDONITIS
 - Thickened hypoechoic bulky tendoachilles with adjacent peripheral hypoechoic rim on the long axis and short axis view.



Figure 7
POSTERIOR TIBIAL TENDON TENOSYNOVITIS
 - Short axis view shows an anechoic collection of a rim of fluid surrounding the posterior tibial tendon as it courses around the medial malleolus.

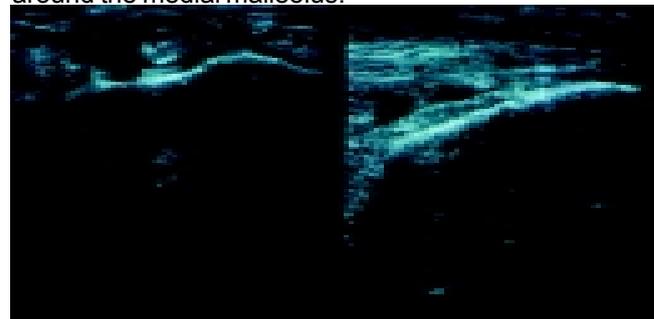


Figure 8
PERONEAL TENDON TENOSYNOVITIS
 - Both the peroneus longus and brevis tendons run in a single sheath in the lateral compartment of the leg. Tenosynovitis is seen as a collection around the single sheath on the short and long axis image of this tendon.

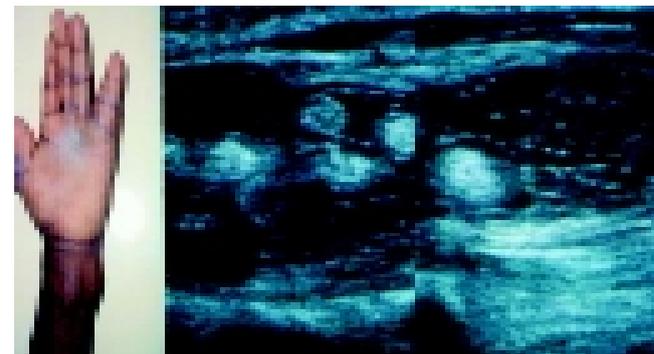


Figure 9
FLEXOR TENDON WRIST TENOSYNOVITIS- post tubercular
 - Flexor tendons of the wrist seen bathed by fluid. The tendons are seen floating in the fluid which shows evidence of internal echoes and grain like appearance.

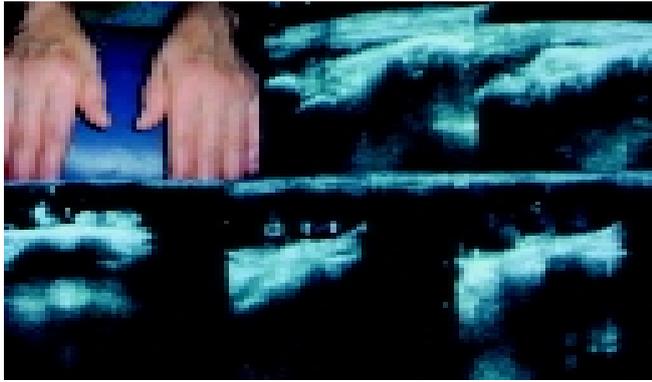


Figure 10

EXTENSOR TENDON TENOSYNOVITIS- WRIST

- Known case of rheumatoid arthritis showing collection around the extensor tendons of the wrist with nodular synovial thickening on the long axis and short axis view of the extensor tendons.



Figure 11

GANGLION CYST

- A ganglion cyst seen arising from the tendon sheath of flexor carpi ulnaris

DISCUSSION:

Tendons are composed largely of parallel running fascicles of collagen fibers that inter weave and inter connect [1]. On ultrasound tendons are seen to be echogenic with a characteristic fibrillary echotexture [2]. Surrounding the tendon is either an epitendineum or a synovial sheath. The synovial sheath contains a thin film of fluid that serves as a lubricant to tendons. Without a synovial sheath, the epitendineum, a dense connective tissue layer, is tightly bound to the tendon. Sonographically the epitendineum is seen as a reflective line surrounding the tendon. [3]

Acute tendonitis is detected by increased fluid within the synovial sheath. This increased fluid is seen as an anechoic halo around the tendon on transverse scans.

Chronic tendinitis is seen as thickening of the tendon itself without increase in the synovial fluid. Comparison with opposite side is essential to make a diagnosis of chronic tendonitis [1, 4, 5].

Tenosynovitis is inflammation of tendon sheaths. It can be caused by trauma, pyogenic infection or rheumatoid arthritis [6].

Ganglia are the most common swelling in the hand. These are cystic lesions arising from synovial lining of joint or tendon sheath [7].

References

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