

## **Ultrasonographic Evaluation Of Flexor Tenosynovitis In Early Untreated Rheumatoid Arthritis: A Comparison With Magnetic Resonance Imaging**

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### **Objective**

To evaluate flexor tenosynovitis in untreated early rheumatoid arthritis (RA) using high frequency gray scale and power doppler Ultrasonography and to compare Ultrasonographic findings with that of magnetic resonance imaging (MRI).

### **Materials and Methods**

Forty patients of rheumatoid arthritis underwent high frequency Ultrasonography and MRI of 2nd to 5th flexor tendon sheaths (FTS) of both hands whereas 25 healthy controls underwent only high frequency Ultrasonography. Normal anatomy and inflammatory changes in the FTS were recorded on both the modalities by two radiologists specialized in doing musculoskeletal imaging. No patient had received prior steroid or disease-modifying agents (DMARD).

### **Results**

Flexor tenosynovitis was found in 102 (31%) of 320 FTS in 22 (55%) of 40 patients on ultrasound compared with 210 (65.6%) of 320 FTS in 32 (80%) of 40 patients on MRI. FTS were completely normal in control subjects on ultrasound. Considering MRI as the gold standard, the sensitivity, specificity, negative and positive predictive values for ultrasound were 0.52, 0.83, 0.69, and 0.70, respectively, for detecting flexor tenosynovitis. The most frequently involved FTS on both the modalities were the second and third.

### **Conclusion**

Both ultrasound and MRI can be used for detection of flexor tenosynovitis in patients with early untreated RA. MRI is more sensitive for detecting flexor tenosynovitis for obvious reasons. A negative ultrasound scan does not exclude inflammation and an MRI should be considered. In developing countries like India, where MRI is limited in availability, ultrasound can become the imaging modality of choice specially to evaluate soft tissue changes in early RA.