

# The Morbidity Feature of Trigger Finger by Ultrasonographic Evaluation

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## Abstract

Ultrasound examination was performed to eighteen trigger fingers of thirteen cases with rheumatoid arthritis (RA) and eighteen trigger fingers of fifteen cases with non-rheumatoid arthritis to evaluate pathophysiological features.

Thickness of flexor tendons and synovial tendon sheaths were measured by using a high frequency liner probe. The presence and absence of intra-articular abnormal vascular flow in RA cases were observed and recorded using Power Doppler Method, and then those cases were categorized into four groups with the presence of blood flow signals analyzed semi-quantitatively. The patient's pain was assessed by Visual Analog Scale (VAS).

As a result there was a significant difference ( $p < 0.05$ ) in thickness between the two groups: flexor tendons were thicker in non-RA cases than in RA cases, and there was no difference in Grade categorization between the two groups. On the other hand, there was no significant difference in thickness of synovial tendon sheaths between the two groups, but the higher the cases were graded, the thicker synovial tendon sheaths became. A significant difference in VAS values was observed in RA group as compared to non-RA group, namely, there was a tendency that VAS values increased as the cases were graded higher.

It was indicated that the cause of trigger fingers in non-RA cases was due to thickening of flexor tendons, whereas in RA group inflammation in addition to thickening of synovial tendon sheaths induced strong pain. In addition, Grade classification was correlated with the pain indicated by VAS, which led to assume that it could be an objective assessment method.

We conclude that ultrasound examination is a useful way to properly diagnose the cause of trigger fingers and consider appropriate treatment.

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## Keywords

ultrasound, trigger finger, A1 pulley, power doppler flow signal, rheumatoid arthritis

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