

Inter-examiner reliability of a new Ultra-sonographic method for classification of supraspinatus tendinopathy – a pilot study

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Introduction. Rotator cuff tendinopathy (RT) is common. For targeting rehabilitation to the stages from normal to pathological RT ultra-sonography (US) may be used. Reliability of such method for RT is lacking.

Aims. To develop and test inter-examiner reliability of US for classifying RT.

Materials and Methods. A three-phased standardized protocol for reliability studies was used for evaluating a rating scale on obtained US pictures of RT. In phase two, presence of fibrillar disruption, calcification and neovascularity was rated as “Present” or “Not present”, and tendon thickness was measured (mm).

The primary investigator performed all US scans. Two examiners (A: Novice and B: Expert) rated independently the presence of fibrillar disruption, calcification, and neovascularity, besides measured tendon thickness.

Cohen’s Kappa statistics were calculated for fibrillar disruption, neovascularisation and calcification, and ICC statistics for tendon thickness, with the between-examiner difference tested by paired t-test. Kappa was interpreted as 0.00-0.40 (poor-fair); 0.41-0.80 (moderate-substantial) and 0.81-1.00 (almost perfect) (1).

Results. Ten healthy controls and 10 cases with RT participated. For calcification and neovascularisation kappa was 0.76 and 1.0 (moderate and perfect), while for fibrillar disruption kappa was 0.08 (poor). ICC was 0.73 for tendon thickness with MDC of 1.7mm, and non-significant between-examiner difference in tendon thickness (0.25mm, sd 0.9; p=0.23).

Conclusion. Inter-examiner reliability for calcification, neovascularisation, and thickness showed promising results, and indicated that small changes are detectable. Further adjustment and reliability testing of classifying fibrillar disruption, in addition to general validity testing, is necessary.

1. Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biom* 1977;33:159e74.