

## Ultrasound of the coracoacromial ligament in asymptomatic volunteers and patients with shoulder impingement

Tobias J Dietrich, Maciej Jonczy, Florian M Buck, Reto Sutter, Gabor Puskas & Christian Wa Pfirrmann

### BACKGROUND

The coracoacromial ligament is part of the coracoacromial arch, which is considered to be involved in shoulder impingement.

### PURPOSE

To compare the coracoacromial ligament on ultrasound in asymptomatic volunteers and in patients with subacromial shoulder impingement.

### MATERIAL AND METHODS

Twenty-nine asymptomatic volunteers (mean age, 35.5 years) and 29 patients (mean age, 49.9 years) with shoulder impingement, diagnosed by experienced shoulder surgeons, were prospectively included. Two radiologists obtained and analyzed ultrasound images of the coracoacromial ligament in the longitudinal axis.

### RESULTS

The ligament thickness was  $1.4 \pm 0.2$  mm at its midportion,  $1.8 \pm 0.4$  mm at the coracoid, and  $2.1 \pm 0.6$  mm at the acromion in asymptomatic volunteers compared with  $1.3 \pm 0.2$  mm,  $1.9 \pm 0.5$  mm, and  $1.9 \pm 0.5$  mm in impingement patients for observer 1. The ligament length was  $30.6 \pm 2.4$  mm in asymptomatic volunteers compared with  $30.4 \pm 3.6$  mm in impingement patients for observer 1. An anteriorly convex shape of the superficial contour of the coracoacromial ligament was significantly more frequent in impingement patients compared with asymptomatic volunteers for both observers (observer 1: 10% (3/29) versus 45% (13/29), P value  $<0.01$ ; observer 2: 10% (3/29) versus 38% (11/29), P value  $<0.03$ ). The comparison of the remaining parameters of the coracoacromial ligament, such as the thickness, length, echogenicity, and fibrillation did not reveal significant differences between volunteers and patients.

### CONCLUSION

While thickness or length of the coracoacromial ligament were similar in volunteers and patients with shoulder impingement, an anteriorly convex shape

of the superficial contour of the coracoacromial ligament was significantly more frequent in impingement patients compared with asymptomatic volunteers.

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