

## Tissue Origin of the Transverse Humeral Ligament

D. P. Beall<sup>1</sup>, T. G. Sanders<sup>2</sup>, J. Q. Ly<sup>2</sup>, D. E. Grayson<sup>2</sup>, J. L. Bond<sup>3</sup>, C. F. Sweet<sup>1</sup>, J. D. Wolff<sup>1</sup>, D. H. Wu<sup>1</sup>

<sup>1</sup>Radiological Sciences, Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma, United States, <sup>2</sup>Radiology, Wilford Hall Medical Center, Lackland AFB, Texas, United States, <sup>3</sup>Orthopedics, Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma, United States

**PURPOSE:** To investigate the tissue origin of the transverse humeral ligament (THL), its relationship to the rotator cuff and the long head of the biceps tendon and the normal MR imaging appearance

**MATERIALS AND METHODS:** Twenty shoulder examinations were performed on 10 matched pairs of fresh frozen cadaveric shoulders. The shoulders were scanned on Signa 1.5-T MRI units and the images interpreted by 2 experienced musculoskeletal radiologists. Following imaging, all shoulders underwent gross and microscopic anatomic dissection. The specimens were also decalcified and stained.

**RESULTS:** In the location of the THL, gross dissection revealed continuation of superficial fibers of the subscapularis tendon from the tendon body across the intertubercular groove to attach to the greater tuberosity; deep fibers of the subscapularis tendon inserted on the lesser tuberosity. Interdigitation of the superior subscapularis fibers with the anterior supraspinatus fibers and the coracohumeral ligament was uniformly identified as the proximal covering of the intertubercular groove. Longitudinal fibers of the supraspinatus tendon were also noted to travel the length of the groove deep to the other interdigitating fibers, but superficial to the biceps tendon. There was no separate anatomic structure noted in addition to the superficial and deeper fibers of the subscapularis tendon overlying the groove at any anatomic level that could be identified using loupe magnification.

**CONCLUSIONS:** There is no transverse humeral ligament, but rather the fibers covering the intertubercular groove are composed of a sling formed by fibers from the subscapularis and supraspinatus tendons. Dislocations of the long head of the biceps tendon would therefore cause disruption of the fibers from both the subscapularis and supraspinatus tendons. This anatomic configuration suggests that tears of the subscapularis tendon and the anterior portion of the supraspinatus tendon are related.