

Title: Is the CSA associated with long head of the biceps pathology? A comparison of the CSA in patients undergoing isolated biceps tenodesis or rotator cuff repair with biceps tenodesis.

Background: CSA >35 degrees are associated with a high prevalence of rotator cuff tears (RTCTs) due to more vertically oriented deltoid force vectors which require the supraspinatus to exert greater forces to stabilize the glenohumeral joint during motion. This force imbalance may play a role in long head of the biceps pathology as its role as a humeral head depressor and may similarly be affected by more vertically oriented deltoid force vectors.

Purpose: To compare the CSA of patients undergoing isolated biceps tenodesis or rotator cuff repairs with biceps tenodesis.

Hypothesis: The role of the long head of the biceps tendon as a humeral head depressor results in pathology which is similarly affected by CSAs >35 degrees as seen in RTCTs. Therefore, the CSAs in isolated long head of the biceps pathology will be statistically no different from the CSAs in rotator cuff and long head of the biceps pathology.

Methods: The CSA was measured on standard AP radiographs in two groups of patients: 1) a group of 12 shoulders with MRI-documented SLAP tears without RCTs that underwent biceps tenodesis; and 2) a group of 20 shoulders with MRI-documented SLAP tears and concomitant RTCTs that underwent biceps tenodesis with RTCR. Student's t-test was used to determine the significance between groups.

Results: The mean CSA was 36.2 degrees (26.25 degrees to 45.74 degrees) in the SLAP group and 36.63 degrees (31.31 degrees to 42.49 degrees) in the SLAP and RTCT group. No statistically significant difference was demonstrated between the two groups ($p=0.81$).

Conclusions: Long head of the biceps pathology is often associated with CSAs >35 degrees.

Clinical Relevance: These findings support the proposed role of the long head of the biceps tendon as a humeral head depressor. Lateral acromioplasty with normalization of the CSA in isolated cases of long head of the biceps pathology may be warranted in order to help prevent increased forces through the intact rotator cuff and thus mitigate subsequent future rotator cuff pathology in patients with CSAs >35 degrees.