BICEPS TENODESIS VERSUS TENOTOMY IN TREATMENT OF LESIONS OF LONG HEAD OF BICEPS BRACHII IN PATIENTS UNDERGOING ARTHROSCOPIC SHOULDER SURGERY

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Objective: To compare patient-reported and objective results between biceps tenotomy and tenodesis in patients with lesions of the long head of biceps tendon (LHBT).

Methods: The study is a prospective, randomized, controlled trial targeting patients +18 years undergoing arthroscopic shoulder surgery to manage a lesion of the LHBT (+/-rotator cuff repair). Patients were excluded if they had previous surgery on their affected shoulder or any other significant medical co-morbidity that could alter the effectiveness of the surgical intervention. Patients were allocated intraoperatively to undergo tenodesis or tenotomy via computer randomization once a LHBT lesion was confirmed. The primary outcome measure was the American Shoulder and Elbow Society standardized assessment of shoulder function (ASES). Secondary
outcomes included: Western Ontario Rotator Cuff Index (WORC), surgery time, patient reported pain and cramping, presence of a cosmetic deformity, elbow flexion and supination strength, and power. Study time points were pre, and three, six, 12, and 24 months post-operative. Magnetic resonance imaging (MRI) was conducted at 12-months post-operative.

Results: Fifty-six participants were randomly assigned to each group, and collection of data to 24-months post-operative is ongoing until 2017). There were no differences in ASES score at pre or post-surgery time points (p=0.74). At 12 months, mean ASES score for the tenodesis group was 79.6 (SD 20.3) compared to 77.9 (20.2) for the tenotomy group. Similarly, no differences were found in WORC, surgery time, pain or cramping. One strength difference was identified at only the six month time point, when the ratio of affected versus unaffected elbow flexion strength was greater in the tenodesis group (0.9 (SD 0.2)) compared to the tenotomy group (0.8 (SD 0.3) (p=0.04). No other strength differences between groups were found for elbow flexion or supination strength, or power. Relative risk of cosmetic deformity reported by patients in the tenotomy group relative to the tenodesis group was 1.36 at 12 months post-surgery which is not significant (p=0.41). MRI findings were available on 40 patients at the 12 month post-operative time point. Of 23 in the tenodesis group, one was not intact and retracted 18 cm and two were partially torn. Of the 17 in the tenotomy group, none appeared retracted.

Conclusion: Arthroscopic treatment of lesions of LHBT, whether tenodesis or tenotomy, was shown to have favourable results. Elbow flexion strength favoured tenodesis at six months, but otherwise there were no significant differences between groups. As data continues to be gathered to 24 months, longer-term benefits and drawbacks of each procedure may become evident.