

Acute Distal Biceps Tendon Repair Using an Endobutton Technique Results in Excellent Short- and Long-Term Patient Outcomes: A Single-Center Experience of 102 Patients

Thomas Carter, MBChB; Bevin Janath Karunaratne, BS; William M. Oliver, MBBS;

Iain Murray, MD; Jeffrey Reid, FRCSC; Timothy O. White, MD;

Andrew David Duckworth, FRCS

Edinburgh Orthopaedics – Trauma, Royal Infirmary of Edinburgh and the University of Edinburgh, Edinburgh, United Kingdom

Purpose: Acute distal biceps tendon repair is reported to reduce fatigue-related pain and minimizes loss of forearm supination and elbow flexion strength. Despite the growing use of cortical buttons for these injuries, reported outcomes in the literature are limited. We report the short- and long-term outcome following repair using a cortical button technique.

Methods: Between 2010 and 2018, 102 patients (101 males; mean age 43 years) underwent acute (≤ 6 weeks) distal biceps tendon repair using a cortical button fixation technique. The primary short-term outcome was complications. The primary long-term outcome was the QuickDASH, an abbreviated version of the Disabilities of the Arm, Shoulder and Hand questionnaire. Secondary outcomes included the Oxford Elbow Score (OES), EuroQol 5 Dimensions 3 Levels (EQ-5D), satisfaction, and return to function.

Results: There were 8 patients (7.8%) who had a major complication and 34 patients (33.3%) a minor complication. Major complications included rerupture ($n = 3$, 2.9%), unrecovered nerve injury ($n = 4$, 3.9%), and surgery for heterotopic ossification excision ($n = 1$, 1.0%). Three patients (2.9%) required surgery for a complication. Minor complications included neuropraxia ($n = 27$, 26.5%) and superficial infection ($n = 7$, 6.9%). At a mean follow-up of 5 years (range, 1-9.8), outcomes were available for 86 patients (84.3%). The median QuickDASH, OES, EQ-5D, and satisfaction scores were 1.2 (interquartile range [IQR] 0-5.1), 48 (IQR, 46-48), 0.80 (IQR, 0.72-1.0), and 100 of 100 (IQR, 90-100), respectively. A majority of patients returned to sport (82.3%) and employment (97.6%) following surgery. Unrecovered nerve injury was associated with a poor outcome according to the QuickDASH ($P < 0.001$), although rerupture and further surgery were not ($P > 0.05$).

Conclusion: This study is the largest single-center consecutive series in the literature that documents both the short- and long-term outcomes following acute surgical management of patients with an acute distal biceps tendon rupture using a cortical button technique. The results of this study suggest that this procedure yields excellent long-term patient-reported outcomes, health-related quality of life, and patient satisfaction in the majority of cases. Although rare, unrecovered nerve injury adversely affects outcome and must be fully considered when surgeons and patients are considering surgical repair of these injuries.