

Distal Biceps Brachii Tendon Ruptures: Epidemiology, Operative Treatment Techniques, and Functional Outcome Based on a Single Center Experience

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Purpose: Distal biceps brachii tendon ruptures represent a relatively common traumatic pattern, especially in manual workers. The purpose of present study was the collection and analysis of epidemiological data, operative techniques, and clinical outcomes of distal biceps tendon ruptures based on a single Level I trauma center experience.

Methods: Patients with distal biceps brachii rupture, treated operatively between 2014 and 2020, were retrospectively reviewed. Medical archives were studied and epidemiological data, surgical techniques including details concerning reattachment methods, and perioperative complications were recorded. Patients were reviewed clinically, and range of elbow motion, early /late complications, and functional outcomes were documented. Chronic ruptures and patients with follow-up less than 18 months were excluded.

Results: The study included 37 patients with distal biceps rupture treated operatively between 2014 and 2020. All patients were male, with mean age of 41 years and the dominant limb affected in 83.8% of cases (31 / 37). 25 patients (67.57%) were treated with suture-anchor distal biceps reattachment, 7 (18.92%) were treated with transosseous pull-out sutures, and 3 (8.1%) with cortical button fixation. In 2 cases of subacute ruptures and suboptimal tendon composition, a semitendinous autograft was also used for augmentation with transosseous pull-out suture fixation. No cases of neurovascular complications or deep infections were recorded. Two cases of re-rupture and 1 case of persistent stiffness were recorded. All 3 cases were related to acute ruptures treated with suture-anchor distal biceps reattachment. The remaining patients (34 / 37) had painless, functional range of motion, and returned to daily activities without significant compromise at 2.5 months postoperatively. Return to sports was possible in a mean period of 4 months after the procedure. No significant difference was found between the reattachment technique and the functional level.

Conclusion: Operative treatment for distal biceps brachii ruptures result in satisfactory functional outcome with low complication rate, regardless of fixation technique used. Cases of re-rupture or persistent stiffness noted in the present study were related to acute ruptures treated with suture-anchor distal biceps reattachment.