

## CASE SERIES

## FUNCTIONAL OUTCOMES AFTER DISTAL BICEPS BRACHII REPAIR: A CASE SERIES

Christine L Redmond, BAppSc(Physio) PhD<sup>1</sup>

Tim Morris, MPhysio<sup>1</sup>

Charissa Otto, MPhysio<sup>1</sup>

Tanisha Zerella, MPhysio<sup>1</sup>

John G Semmler, PhD<sup>2</sup>

Taibos Human, MBBS<sup>3</sup>

Joideep Phadnis, MRCS FRCS (Tr&Orth)<sup>4</sup>

Gregory I Bain, FRACS, PhD<sup>3</sup>

## ABSTRACT

**Objectives:** To investigate outcomes after surgical repair of distal biceps tendon rupture and the influence of arm dominance on isokinetic flexion and supination results.

**Background/Purpose:** While relatively uncommon, rupture of the distal biceps tendon can result in significant strength deficits, for which surgical repair is recommended. The purpose of this study was to assess patient reported functional outcomes and muscle performance following surgery.

**Methods:** A sample of 23 participants (22 males, 1 female), who had previously undergone surgical repair of the distal biceps tendon, were re-examined at a minimum of one year after surgery. Biodex isokinetic elbow flexion and supination testing was performed to assess strength (as measured by peak torque) and endurance (as measured by total work and work fatigue). The Quick Disabilities of the Arm, Shoulder and Hand (QuickDASH) and Mayo Elbow Performance Scale (MEPS) were used to assess participants' subjectively reported functional recovery.

**Results:** At a mean of 7.6 years after surgical repair, there were no differences between the repaired and uninvolved elbows in peak torque ( $p=0.47$ ) or total work ( $p=0.60$ ) for flexion or supination. There was also no difference in elbow flexion work fatigue ( $p=0.22$ ). However, there was significantly less work fatigue in supination, which was likely influenced by arm dominance, as most repairs were to the dominant arm,  $F(1,22)=5.67$ ,  $p=0.03$ .

**Conclusion:** The long-term strength of the repaired elbow was similar to the uninvolved elbow after surgery to the distal biceps tendon. Endurance of the repaired elbow was similar in flexion but greater in supination, probably influenced by arm dominance.

**Study design:** Retrospective case series

**Level of Evidence:** Level 4

**Key Words:** Elbow, endurance testing, flexion, strength testing, supination

## CORRESPONDING AUTHOR

Christine L Redmond

Discipline of Physiotherapy

School of Medicine, Nursing and Health  
Sciences

Flinders University

South Australia, 5042, Australia

M: (+61)431861149

E-mail: christine.redmond@caissa.com.au

<sup>1</sup> Discipline of Physiotherapy, School of Medicine, Nursing and Health Sciences, Flinders University, SA, Australia

<sup>2</sup> School of Medicine, University of Adelaide, SA, Australia

<sup>3</sup> Department of Orthopaedic Surgery, Flinders University, SA, Australia

<sup>4</sup> Brighton and Sussex University Hospitals, Brighton, United Kingdom