

CASE REPORT

Proximal biceps rupture: management of an unusual injury in an arm wrestler

D A Pratt, T D Tennent

Arm wrestling may cause unusual injuries, which may require operative repair in the sporting individual. Injury to the proximal biceps as a consequence of arm wrestling has not been reported previously. The diagnosis and treatment of a 36-year-old man who sustained a proximal biceps rupture while arm wrestling and his operative management are described.

Arm wrestling is a growing sport that requires strength, effective technique and rapid speed of reaction. The most commonly occurring serious injury in participants of this sport is spiral fracture of the humeral shaft.¹⁻⁴

Fracture separation of the medial humeral epicondyle⁵ and fractures of the olecranon have also been reported.⁶ The mechanism of rotation, coupled with the powerful unopposed contractions of the biceps, is thought to be responsible for many of these injuries.

As far as we are aware, injury to the proximal biceps as a consequence of arm wrestling has not been reported previously. We describe an unusual case of proximal biceps rupture in an arm wrestler and describe his subsequent management.

Rupture of the proximal biceps tendon occurs in 90–97% of all biceps ruptures and almost exclusively involves the long head. They tend to occur in people aged >50 years and are often associated with rotator cuff tendonitis.⁷ Rupture of the long head tendon is uncommon in competitive and recreational athletes.^{8,9}

A 36-year-old man presented with pain in the anterior compartment of his arm, worse on flexion and supination with a clear long-head rupture of the biceps. The onset of this pain coincided with an episode of competitive arm wrestling. After discussion, he elected to have the tendon repaired to allow his return to the sport.

After confirmation of the diagnosis, the biceps lesion was repaired using the technique described by Wiley *et al.*¹⁰

TREATMENT AND SURGICAL TECHNIQUE

At arthroscopy, no remnant of the biceps was seen and the arthroscope was removed. A 2–3 cm incision was made along the inferomedial border of the pectoralis major. Blunt dissection between the internervous plane of the pectoralis major and conjoint tendons was next undertaken down to the anterior surface of the humerus. The biceps tendon stump was identified and a number 2 Fiberwire (Arthrex, Naples, Florida, USA) whipstitch was inserted. The tendon stump was then secured to the humerus by means of a Biotenodesis screw (Arthrex).

POSTOPERATIVE CARE AND IMMOBILISATION

The patient was immobilised for 2 weeks in a polysling, at which point physiotherapy was started with a passive range of motion exercises for 2 weeks and an active range of motion exercises for the next 4 weeks. At 6 weeks, lifting of weights <5 kg was permitted, and at 12 weeks lifting of weights was unrestricted. This patient had no postoperative complications and he had regained the full range of motion and strength by 3 months.

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What this study adds

- Arm wrestling may cause unusual injuries, which may require operative repair in the sporting individual.
- Repair of a proximal biceps rupture should be considered in a competitive athlete keen to return to his sport.

What is already known on this topic

- Proximal biceps rupture is an uncommon injury in a competitive athlete.
- There is an association between proximal biceps rupture and rotator cuff tendinitis.
- Rupture of the proximal biceps as a consequence of competitive arm wrestling and subsequent mini-open repair has not been reported previously in the literature.

Authors' affiliations

D A Pratt, T D Tennent, Department of Trauma and Orthopaedics, St George's Hospital NHS Trust, London, UK

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Correspondence to: D A Pratt, Department of Trauma and Orthopaedics, St George's Hospital NHS Trust, 67 Water Lane, London E15 4NL, UK; iamekin1@aol.com

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