

RUPTURE OF THE DISTAL BICEPS TENDON

Report of Five Cases

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Five cases of rupture of the distal biceps tendon are described. Three were operated on—two in the acute stage and one after 3 months—and the other two were managed conservatively. The literature on this condition is reviewed and alternative forms of treatment are discussed.

Key words: tendon rupture; biceps injury; muscle-tendon injury

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Rupture of the distal biceps tendon is relatively uncommon. Various surgical methods have been described but the literature is rather sparse, particularly regarding inveterate cases. It therefore seems appropriate to present and discuss five cases that were treated at this Department in the period 1969-76.

CASE REPORTS

Case 1. A 58-year-old man was treated conservatively for rupture of the distal tendon of the left biceps.

At follow-up, 9 years after the injury, he reported lack of strength at the elbow. Examination indicated that the greater part of the biceps muscle had atrophied, with considerable loss of gross muscle power in the elbow joint.

Case 2. A 55-year-old man was treated conservatively for rupture of the distal tendon of the right biceps.

At follow-up, 4 years after the injury, he reported very troublesome periodical pain located in the front of the right elbow joint and also in the right shoulder joint. Examination indicated no appreciable loss of gross muscle power in either the upper arm or the elbow; neither was supination at the elbow impaired.

Case 3. A 47-year-old man experienced sudden pain in the left upper arm whilst lifting a heavy object. The diagnosis ruptured distal biceps ten-

don was made 3 months later, at which time the gross muscle power for flexion and supination in the elbow joint was found to be impaired. In view of the patient's great subjective discomfort and his age, an operation was performed. The biceps tendon, rounded off, was found in a proximal position, enclosed in a synovial sack filled with synovia. The biceps muscle was re-connected to the proximal radius by means of a fascia lata graft (Kalinberzs & Veisman 1975; see Figure 1).

Postoperative plaster treatment was maintained for 5 weeks. The patient went back to work 3 months after the operation, by which time elbow function was restored to normal.

Case 4. A 56-year-old man experienced sudden pain in the left upper arm whilst lifting a heavy object. Rupture of the distal biceps tendon was diagnosed and an operation was performed in the acute phase, the tendon being re-attached by suturing through a hole drilled in the radius. When the patient returned to work 3 months later, he reported a slight loss of gross muscle power in the elbow but otherwise everything was normal.

Case 5. A 53-year-old man experienced sudden pain in the left upper arm while playing handball. An operation was performed in the acute phase, the tendon being re-inserted into the radial tuberosity with pull-out sutures through drill-holes according to Bunnell (see Figure 2). He took 3 months sick leave, and had a completely acceptable result at follow-up 6 months after the operation.

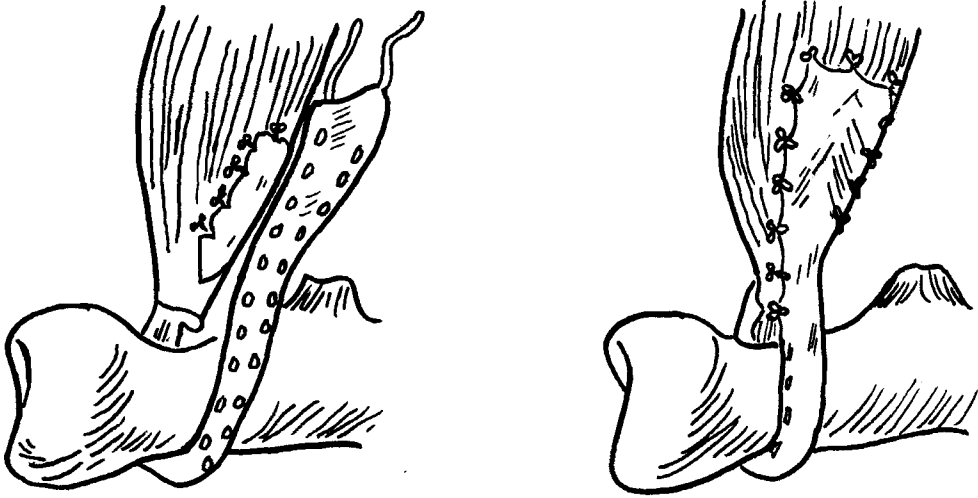


Figure 1. Repair of the biceps muscle with fascia lata (from Kalnberzs & Veisman 1975).

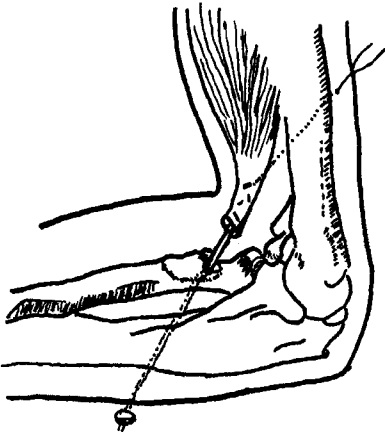


Figure 2. Re-attachment of the tendon to the radial tuberosity by means of a pull-out suture (from Lange 1962).

DISCUSSION

A rupture of the distal attachment of the biceps muscle is relatively uncommon; of all ruptures to the biceps tendons, only about 3 per cent are reported to occur in the distal portion (Hempel & Schwenke 1974). The patients are mostly men (Postacchini & Puddu 1975) and generally around 50 years of age. This is borne out by the cases presented here. The cause is held to be a combination of de-

generative processes in the tendon and trauma (Postacchini & Puddu 1975, Hempel & Schwenke 1974). But it is noteworthy that the rupture occurs at the bony attachment and seldom leaves any tendon tissue distally.

Opinions about treatment vary. Most of the results reported in the literature concern surgical cases. Early operation carries a good prognosis. Here the generally accepted method involves re-inserting the distal tendon into the tuberosity of the radius by means of holes drilled through the radius (see Figure 2).

Pull-out suture according to Bunnell or embedded suture can be used. According to Postacchini & Puddu, re-insertion may lead to radial paresis even when performed in the acute phase and they simply suture the tendon to the brachialis muscle. Kalnberzs & Veisman (1975) use a free fascia lata graft, looped round the shaft of the radius and attached at both ends to the biceps tendon (Figure 1).

Postacchini & Puddu, who reported seven cases with suture of the tendon to brachialis, considered that this simpler method gave excellent results, including an entirely satisfactory restoration of

supination. Their patients included two athletes, who resumed their sport without discomfort.

In inveterate cases, surgery is an open question. In the present case (No. 3) the operation revealed a synovial sack, containing about 5 ml of synovia, around the ruptured tendon. Presumably this was partly responsible for the patient's persistent discomfort 3 months after the injury. In this instance a good result was achieved with surgery according to Kalnberzs.

Of the two patients given conservative treatment, one suffered from persistent invalidism and loss of strength in the arm, while the other had substantial subjective discomfort but little objective loss of strength.

Conclusion

Rupture of the distal biceps tendon should be operated on in the acute phase,

and the tendon re-inserted into the radial tuberosity or sutured to the brachialis muscle. An operation can be considered up to 3–4 months after the injury in persons of up to middle age, the method being either a fascia lata graft according to Kalnberzs or suture of the tendon to the brachialis muscle.

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