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Reintegration through Anchors Rupture of the Distal Biceps Tendon: Report of a Case and Literature Review

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Abstract

The authors report a case of a young man of 38 years who presented a rupture of the distal biceps tendon, which occurred following the wearing of a heavy load. This is an observation describing a rare nosology, operated by anterior transversal approach to the elbow with tendon rehabilitation through anchors at the radial tuberosity. The radioclinical evolution was satisfactory.

Keywords

Bicpital Tendon, Rupture of the Biceps, Reintegration, Anchors

Subject Areas: **Orthopedics, Surgery & Surgical Specialties**

1. Introduction

Rupture of the distal biceps tendon is a rare lesion, usually affecting a male about 50 years, mostly employed force or doing sports strength using elbow flexion against resistance. Achieving often interested in the dominant member. Untreated, it faces the risk of losing the next flexion and supination decreased arm strength. Several surgical techniques have been proposed and none showed its superiority. The lack of algorithm codifying management of this disease justifies the interest of our present observation.

2. Observation

This is a man aged 38, a painter, right-handed, having felt when wearing a heavy load brutal pain, accompanied

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by a breakdown sensation “whiplash”. On examination it is presented with the elbow bent without bending deficit. An aspect distal ball is observed (**Figure 1**) but the comparison with the other side that has allowed evoking the diagnosis, the fleshy portion of the biceps with shorter aspect of injured side. The squeeze test and the Hook test were both negative. MRI showed rupture of the distal biceps tendon. The intervention was carried out three days later, a cross anterior approach was performed, one objective the ruptured tendon stump and slightly retracted (**Figure 2**), after exposure and preparation of the radial tuberosity, reintegration of biceps tendon was done on elbow flexed to 90˚ by means of two anchors Mitek® moored to the side of the tuberosity and aligned with the sagittal plane thereby deliver the distal biceps tendon on the footprint previously sharpened (**Figure 3**). The elbow was immobilized in supine splint for three weeks, isometric rehabilitation was immediately started, and passive and active rehabilitation from the 21st day. The recovery of activity was allowed in the third month. The evolution was 06 months was considered excellent by the standards of conservation DASH (The Disabilities of the Arm, Shoulder and Hand Score) with range of motion of elbow flexion and supination above. No complications were deplored.

3. Discussion

Surgical repair of fresh acute tendon ruptures of the distal tendon bicpital must be appropriate and early [1]. In fact, over the support period is long, there has been technical difficulties tendon rehabilitation due to proximal retraction of the tendon. The rupture occurs in patients whose functional stress is important. The diagnosis is primarily clinical, and not a problem in general, nonetheless, beware of the sensation of this tendon because he

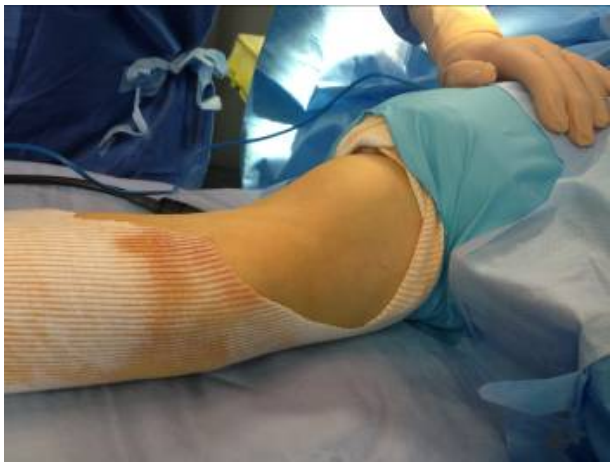

Figure 1. Clinical aspect of the distal biceps rupture ball.

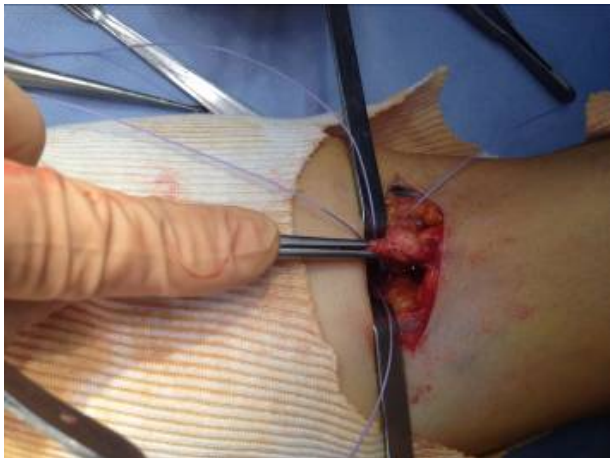

Figure 2. Broke and retracted tendon stump.

can remain in his dressing room and give a false impression of being intact. By cons do not expect a flexion deficit, the muscle of the forearm and brachialis to get it, however powerless. Radiography of the elbow is usually normal. Ultrasound or MRI better [2] (**Figure 4**), if the examination is available, will diagnosis.

Surgical treatment is indicated for heavy workers, so often because it is on this ground that the injury occurs [3] [4]. The limit of the indication comes from the more support period. Indeed, the diagnosis is often made late, the patient presents after several weeks against which indicates-surgical treatment due to the retraction of the muscle.

In reality the classic 3 weeks can be easily passed until about six weeks [5]. It will possibly be expected to surgical difficulties. However rehabilitation will be longer to allow full extension. Tenodesis techniques to brachialis should not be practiced because they give results comparable to no treatment. The literature describes two main techniques.

The more classical [6], is to achieve a high track modified Henry and the aid of an extensive dissection of the proximal third of the forearm of reattaching the tendon on the radial tuberosity by transosseous points or anchors .

This technique as a disadvantage of causing a significant number of nerve complication of postoperative hematoma due to the large number of vessels to link before reaching the radius.

Figure 3. Operative site after repair of tendon rupture.

Figure 4. MRI appearance of the break with hyperintensity at the périradiale capital fibrosis area.

Boyd and Anderson [7] described a technique by two approaches that avoids both pitfalls. In our experience, we preferred to carry out only single horizontal incision performed on the elbow flexion fold and centered on the "safe area" described by Hartmann, it does not exceed 3 centimeters. After hemostasis and dissection of the subcutaneous tissue, will be seen by transparency in a synovial sheath, hemorrhagic biceps tendon. It may seem in place and even low traction may not be enough to get him out. Indeed, it then joined the adjacent muscle.

Do not hesitate to make a strong pull on the tendon and can then leave the stump. The lateral aspect of the radial tuberosity will be heightened. Bending the elbow, then realize a son with lacing anchors ensuring that the stump is snug on the tuberosity (footprint of Anglo-Saxon) [8]. The incision is then closed without Redon.

The patient is immobilized in 90 degrees of flexion for 03 weeks followed by functional rehabilitation is started. The change is often excellent and fast recovery of the extension does not posing difficulties [9] [10].

Nerve complications are possible (5%) with the technique to a single lane. The complication of the technique to two lanes of Boyd and Anderson is the appearance of ossification break the interosseous membrane with a risk pronosupination deficit. We did not encounter in our experience.

4. Conclusion

Rupture of the distal biceps tendon is a rare lesion, whose diagnosis is easy. Treatment may only be using surgical tendon rehabilitation; the use of anchors through a minimal surgical approach, early and adapted, allows satisfactory functional recovery.

Conflicts of Interest

No conflicts of interest were reported by the authors.

Contributions of Authors

All authors have contributed to the development of this work.

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