

# Triceps Brachii Tendon Reconstruction with V-Y Plasty: Indication and Functional Results of a Case at Bouaké Teaching Hospital

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## Abstract

Repair of an old lesion of the triceps brachii tendon is infrequent. A V-Y plasty was performed 4 years after the injury in an adult. Post traumatic osteoarthritis limits functional outcomes. The patient is satisfied.

## Keywords

Reconstruction, Tendon, Triceps Brachii

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## 1. Introduction

Several techniques have been described for reconstruction of old lesions of the triceps brachii tendon [1] [2] [3]. The V-Y plasty gives good result [4]. We have experimented with a patient we report in order to contribute to the study of this technique and to highlight advantages and disadvantages.

## 2. Case Report

Miss A. B, 35 years old, was the victim of a road accident in 2008. She presented a dislocation-fracture of the right elbow that would have been treated by the traditional healer. Persistence of limited elbow movements required orthopedic consultation in 2012. Active flexion and extension were 110° and -45°. Arm abduction was limited at the shoulder. Prono-supination was normal. Standard radiography revealed triceps tendon avulsion and osteoarthritis of the elbow (Figure 1).

A V-Y plasty of the tendon was performed. A small pellet of avulsion bone



**Figure 1.** X-ray showing an ascending olecranon bone pellet and elbow osteoarthritis. The red arrow indicates bone pellet.



**Figure 2.** Radiograph control after surgery. Bone pellet (arrow in red) on the olecranon is not anatomical but there is a contact.



**Figure 3.** X-ray at 12 months showing a fusion with posterior olecranon outgrowth.

associated was fixed on the olecranon by bone stitches (**Figure 2**).

A brachio-palmar cast was made, elbow in incomplete extension. Iatrogenic ulnar neuropathy evolved favorably in 6 months. Fusion of the bone was made (**Figure 3**).

At 24 months' follow-up a 40° elbow extension was obtained and limb abduction was possible beyond the shoulder.

Post-traumatic osteoarthritis limits movement. The patient is satisfied with the functional result.

### 3. Discussion

Impossibility of writing on the board on a height beyond the head aroused interest of surgery of our patient looking for a job in education. Brachial triceps is an elevator muscle of the forearm on the arm. It is explored with arm in 90° abduction, bending of elbow at 90° and the forearm in pronosupination thumb turned towards patient. Elbow extension deficit from this position means triceps brachii tendon lesion [4]. Rupture can be done on muscle but tendinous lesion is common [4] [5] [6]. Radiograph elbow profile confirms the bone lesions and the ultrasound of the triceps diagnoses the muscular lesions. MRI is useful in old lesions [5]. Traumatic etiology is common but weakness of the tendon may be related to hyperthyroidism or cortisone infiltration [7] [8] [9] [10]. Late diagnosis is due to insufficient initial clinical and radiological investigation or a delay of consultation. Old lesions are difficult to treat because of tendon retraction associated with other lesions including elbow osteoarthritis [2] [3] [4]. Reconstructive techniques are performed by tendon graft or elongation [1] [2] [3] [4]. The V-Y reconstruction of the triceps brachii tendon has been described by Yazdi [4]. It is a technique that allows an extension of the tendon. Patient is in lateral decubitus. A pneumatic tourniquet is useful. In our case we did not do for lack of material. This allowed us to have full access to the triceps muscle. Incision is posterior median. Tendon is highlighted until its muscular junction. Gap between the end of the tendon and its olecranon insertion zone is measured. The inverted V section of tendon is at the edge of its muscular junction retaining tendino-muscular fibers. Rehabilitation of tendon in case of avulsion may require bone stitches. In our case we made it with non-resorbable wire of 1 mm caliber. There is a risk of ulnar nerve injury observed in our case during bone stitched. Prior exposure of the nerve may be helpful. Tendon suture is made by an inverted Y suture. After closure incision, an immobilization of the elbow is not mandatory. It has been in our case to avoid mobilization without authorization. At the 2 years follow-up, we have no sign of rerupture. Supervising should be continued because in the triceps tendon repair, 6 % of cases of rerupture were reported at 36 months [11].

### 4. Conclusion

The V-Y plasty of triceps tendon brachii improved the functional prognosis of the elbow. It's a simple technique to promote.

### Conflict of Interest

The authors state that there is no conflict of interest. The patient was informed and gave contentment for this article.

### Author's Contribution

All the authors contributed to the writing of this manuscript, and had read and approved the final version.

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