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Reconstruction of the annular ligament in neglected Monteggia lesions: a case report

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Abstract

Neglected Monteggia is a rare lesion. We describe the observation of a young patient who presented this lesion and the surgical treatment has consisted in a reconstruction of the annular ligament with a good anatomical and functional results.

Keywords: Neglected Monteggia, annular ligament, reconstruction

Introduction

Neglected Monteggia lesions are rare in adults [1]. It corresponds to a fracture of the ulna associated with a dislocation of the radial head.

Current management is based on reconstruction of the annular ligament associated with an osteotomy of the ulna.

We report the observation of a young man with a neglected 4-month-old Monteggia lesion. The treatment was surgical with a good functional evolution.

Clinical observation

We report the case of a young man, aged 25 years, seen in consultation 4 months after a fall from a ladder with landing on the left upper limb.

The patient had initially resorted to traditional medicine but faced with the persistence of the deformity he consulted for management.

The clinical examination revealed a functional impotence of the elbow with loss of anatomical landmarks associated with reduced and painful mobility of the elbow without downstream vasculonervous complications. (Figure a, b).

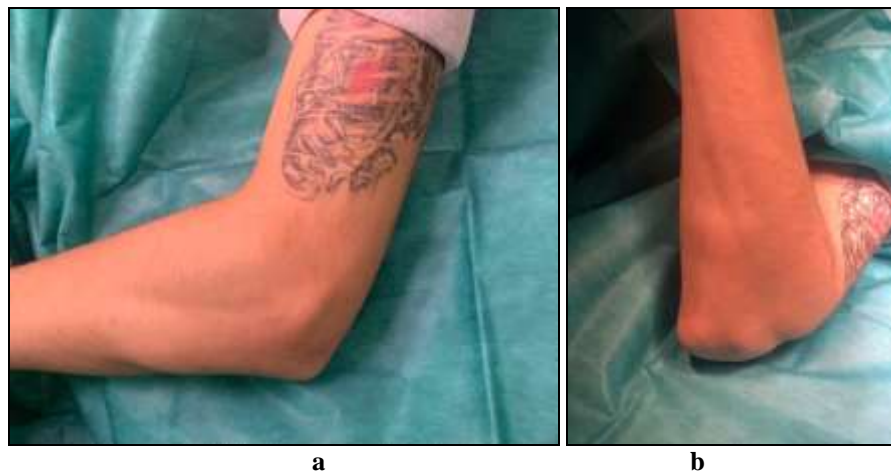


Fig a, b: Clinical aspect of the left forearm

The radiographic assessment of the elbow showed a fracture of the proximal end of the ulna consolidated in to a vicious callus with an anterior dislocation of the radial head classified as Bado 1 (figure c).

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c

Fig c: AP and profile x-rays of the forearm showing the neglected Monteggia lesion. The patient was treated surgically, under general anesthesia with pneumatic tourniquet at the root of the limb.

We performed a first osteotomy of the ulna with avulsion of the margins and re-permeabilization of the medullary canal. In the second stage, using a Kocher approach, we performed arthrolysis of the humeroradial joint with removal of the fibrous tissue interposed between the head and the small sigmoid cavity. (Figure d)



d

Fig d: arthrolysis of the humeroradial joint with removal of the fibrous tissue

We proceeded to harvest a graft from the palmaris minor as a reconstruction of the annular ligament. (Figure e, f).



e

f

Fig e, f: harvest a graft from the palmaris minor for reconstruction of the annular ligament

After the graft was harvested, we created tunnels for the implant on both sides of the small sigmoid cavity. We proceeded to final reduction of the radial head and suture of the implant as well as osteosynthesis of the ulna with a 7-hole DCP plate. (Figure g)



g

Fig G: Reduction of the radial head and suture of the implant

Intraoperative visualization showed good reduction of the head and good alignment of the ulna.

A plaster cast immobilization with a brachioanthebrachiopalmar splint; elbow in functional position was made for a period of 6 weeks.

The postoperative course was simple. The follow-up radiograph showed a reduction of the radial head with good alignment of the ulna. (Figure h, i)



h



i

Fig h, i: radiograph showed a reduction of the radial head with good alignment of the ulna.

Rehabilitation was started after the duration of the immobilization in order to respect the healing of our implant and consisted in recovering the articular amplitudes of the elbow, especially in pronosupination.

Discussion

Described by Giovanni Monteggia in 1814^[3], neglected monteggia injury is a rare entity in adults.

It is defined as a dislocation of the radial head more than 4 weeks after the causal accident, regardless of the initial management^[5]. It may be secondary to residual ulnar deformity after internal fixation or to failure of the annular ligament to heal.

It was classified by Bado in 1967, according to the fracture line of the ulna and the direction of the radial head dislocation, into 4 types^[4]. Although it is a therapeutic problem in pediatric orthopedics, we find rare cases published in adults^[13].

Several surgical techniques have been reported, the first of which was resection of the radial head with poor results in terms of stability with proximal migration of the radius and residual pain^[6,7].

It is thanks to Bell Tawse who published in 1965 a well codified surgical procedure which consisted in the removal of the tissues interposed between the radius and the capitulum allowing the reduction of the radial head as well as the reconstruction of the annular ligament by using a triceps tendon blade passed through tunnels created on both sides of the radial head^[9].

Surgical treatment of neglected monteggia lesions requires reconstruction of the annular ligament to improve the stability of the radiohumeral and superior radiocubital joint. However, there are various methods of reconstruction: the use of the triceps tendon^[9], a blade of the fascia lata^[10] or long palmar tendon, such as the procedure adopted^[11], or the use of the forearm aponeurosis^[12].

Recently Marinello *et al.*^[14] described a modified Bell and Tawse technique by completely detaching 10*4 mm of the lateral portion of the triceps tendon. They suggest fixation of the annular ligament graft in supination by anchors on the posterior aspect of the ulna to better reduce the radiohumeral joint and ensure good superior radiocubital congruence.

Functional evaluation is based on Liverpool elbow score which is based on 5 items to assess elbow function.

Conclusion

The neglected monteggia lesion is very rare in adults. The treatment is surgical to restore the length and good alignment of the ulna associated with a plasty of the annular ligament which plays an important role in the stability of the radial head.

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