Case Report

Providential non-union of the medial condyle of distal humerus: a case report

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ABSTRACT

Non-union of the medial condyle of the humerus is a rare development of neglected fractures of the distal humerus. We report a case found in a 19 years old boy who consulted for relative functional impotence of the right elbow, with a functional score rated at 76 points out of 100 according to Broberg and Morrey. The elbow radiograph showed a pseudarthrosis of the medial condyle of the humerus and the computed tomography found in addition a partial filling of the olecranon and coronoid dimples. Also, a therapeutic abstention was retained this pseudarthrosis in view of its providential character.

Keywords: Non-union, Providential, Medial condyle, Distal humerus

INTRODUCTION

Fractures of the distal humerus of the adult represent about 2% of all traumatic skeletal lesions. Neglected, they are often complicated by non-union. According to the Mitsunaga classifications of 1982, there are 5 types according to the seat. Despite the fact that they can cause mild pain, instability and loss of grip strength, in some cases they do not require surgical treatment. Several therapeutic options have been described in the literature, ranging from internal fixation to arthrodesis and arthroplasty. They have the advantage of improving the function and stability of the elbow, but it remains a source of significant complications. Non-union of the distal humerus is rare and that of its medial condyle even more. We report here a case of medial condyle non-union of the humerus complicating a fracture of the distal humerus in which the option of therapeutic abstention was adopted because of its providential nature.

CASE REPORT

He is a 19 years old trader, right-handed, with no particular past medical history, seen in consultation at 6 months of a neglected trauma of the right elbow during a fight. He was beaten on the elbow. The initial care was done by the bonesetter. Faced with the persistence of a relative functional impotence, a decrease in limb strength and transient pains, he makes an appointment for orthopedic consultation.

The physical examination found a good general condition, a muscular atrophy of the forearm estimate at 2 cm difference from the opposite side. He found a protrusion of the medial condyle with a discreet blow of the posterior ax. The palpation showed a disorganization of the anatomical bone configuration of the elbow. The Hueter line and the Nelaton triangle were not found respectively in full extension and in 90° bending. There was abnormal mobility with little pain in the medial condyle. The
Articular amplitudes were respectively at -25° and 130° for extension and flexion. Pronation was at 30° and supination at 60°. There was no instability in varus and forced valgus. Elbow use was normal (Figure 1). There was no sensory, motor or vascular disorder. The general examination was otherwise normal. Borberg and Morrey’s functional score (Table 1) of the elbow attributed 30/40 points to mobility, 13/20 to strength, 5/5 to stability and 28/35 points to pain. For an overall score of 76/100, evaluating the function of the elbow at the average level.

Table 1: Broberg and Morrey score items and notation.

| Variables                        | Points |
|----------------------------------|--------|
| Motion (total for each plane) (degrees) |        |
| Flexion (0.2xarc)                | 27     |
| Pronation (0.1xarc)              | 6      |
| Supination (0.1xarc)             | 7      |
| Strength                         |        |
| Normal                           | 20     |
| Mild loss (appreciable but not limited, strength 80% that opposite side) | 13     |
| Moderate loss (limits some activity, strength 50% that opposite side) | 5      |
| Severe loss (limits everyday tasks, disabling) | 0      |
| Stability                        |        |
| Normal                           | 5      |
| Mild loss (perceived by patient, no limitation) | 4      |
| Moderate loss (limits some activity) | 2      |
| Severe loss (limits everyday tasks) | 0      |
| Pain                             |        |
| None                             | 35     |
| Mild                             | 28     |
| Moderate                         | 15     |
| Severe                           | 0      |

Figure 1: (a) Hand to mouth movement evaluation, (b) internal rotation, (c) elbow flexion, and (d) elbow extension.

Figure 2: Elbow X-ray (a) front view and (b) lateral view.

Figure 3: CT scan of the elbow (a) frontal view, (b) axial view, (c) sagittal view, and (d) anterior view of CT scan reconstruction showing the filling the olecranon and coronoid dimples.

DISCUSSION

Non-union is one of the rare complications of neglected fractures of the distal humerus of the adult. They were classified in 1982 by Mitsunaga in 5 types according to the seat namely type A in supra-condylar, type B in T-condylar, type C in lateral condyle, type D trans-condylar and type E in condyle medial (Figure 4), which is the subject of this case report is the rarest.

In the literature dealing with the management of non-union of the adult's humeral palette, surgery is indicated in almost all cases. The Ackermann and al series of 20 cases in 16 years is a functional indication in only one case. The most common therapeutic indication is a cure of pseudarthrosis by placing a spongy allograft and osteosynthesis by screwed or screwed plate.
CONCLUSION

Non-union of the distal humerus is a rare complication of traumatic elbow injuries. That of the medial condyle is almost not described in the literature. His diagnosis is easy on radiography with the help of Matsunaga’s classification. Although the therapeutic indication is almost always surgical, the postoperative complications come to erode the functional prognosis of the elbow. In the presence of medial condyle nonunion, the function of which is preserved, it is important to weigh the risk/benefit balance before deciding on a surgical indication. The analysis of the axial sections of the CT of the elbow makes it possible to know if this pseudarthrosis has a providential character. This avoids making the patient run the known risks of elbow surgery.

ACKNOWLEDGEMENTS

The authors thank all those who participated in the development of this work.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Mebouinz FN, Diouf AB, Dembele B, Daffe M, Sarr L, Dieme C, et al. Providential non-union of the medial condyle of distal humerus: a case report. Int J Res Orthop 2020;6:844-7.