

**FRACTURES CAPITELLUM TREATED BY SCREWING HERBERT: 2 CASES**

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**SUMMARY**

The fracture of the capitellum is a rare articular fracture with frontal line, raises essentially the problem of their ignorance and their treatment. Poor results occur after imperfect reduction, late treatment or resection of capitellum. Many treatments have been proposed Our study describes the screw screwing of Herbert practiced in two patients between 2016 and 2019. The diagnosis was oriented by the clinical examination and confirmed on the radiography of face, profile and internal complete by a scan of the elbow. The lesions were classified according to Bryan and Morrey. Patients were operated on by emergency external lateral approach, open reduction and stabilization with buried Herbert screws.

**KEYWORDS:** Capitellum, Fracture, Herbert Screw.

**INTRODUCTION**

Fractures of the capitellum are rare and account for less than 1% of all elbow fractures.<sup>[1]</sup> They occur mainly after the age of 14 years.<sup>[2,3]</sup> The initial management of these lesions must be early and effective because of the risks on the elbow: rigidity, instability; post-traumatic osteoarthritis.<sup>[4]</sup> Many treatments have been proposed: radical treatment such as early excision of the capitulum and conservative treatment including osteosynthesis by different implants. Our study describes the screw screwing of Herbert

**METHODS**

We report here the cases of two patients with a fracture of the capitellum Treated and followed in the orthopedic surgery department of the CHU avicen de rabat between 2016 and 2019 with a follow-up of 12 months. The diagnosis was guided by the clinical examination and confirmed on the radiograph of face, profile and internal ¾. The lesions were classified according to Bryan and Morrey.<sup>[4]</sup> The patients were operated on by emergency external lateral approach, open reduction and stabilization by buried Herbert screw. Intraoperative mobility was appreciated in search of instability. The decline was one year. The functional evaluation was made by the MEPI (Mayo Elbow Performance Index) score.<sup>[5]</sup>

**RESULTS****Observation 1**

A patient aged 15, right handed, was admitted following a fall on the left elbow, for pain and functional impotence. The initial examination revealed patient with trauma attitude of the left upper limb with a swollen, hot, painful elbow, with exerous external anterior pain. The anatomical landmarks were preserved. The radiological assessment (Figure 1) showed a displaced fracture of the capitellum. The patient was operated on urgently. The anesthesia was of the plexic axillary block type. After putting in place a pneumatic tourniquet, approach the external lateral elbow (Figure 2). The reduction of the fracture was obtained temporarily by image intensifier controlled pins. Fixation was done by screwing the capitulum with 2 embedded extra-posterior Herbert antero-posterior screws (Figure 3). After verification of the mobility of the elbow, a complementary immobilization of the elbow by brachio-antebrachial posterior splint was put in place for a period of three weeks. Functional recovery was obtained after 3 months also with a MEPI score of 98. Bone healing was complete at 3 months.

**Observation 2**

A 37-year-old woman, right-handed, cashier, fell from the stairs with a reception on her left elbow. She was admitted to the emergency department for left elbow pain with total functional impotence. Examination found a left elbow swollen, exquisite external pain. The

anatomical landmarks of the left elbow were preserved. The radiographs of the elbow (Figure 4) showed a fracture of the capitellum. The patient was operated (Figure 5, Figure 6) in urgency according to the same principles as before. The functional recovery was obtained after 3 months also with a MEPI score of 94. The bone consolidation was complete at 3 months.

## FIGURES



**Figure 1: Elbow profile radio shows a fracture of the capitellum displaced.**



**Figure 2: external lateral approach to the elbow.**



**Figure 3: Postoperative radio shows screwing of the capitellum By Two screws of HERBERT.**

## DISCUSSION

The fracture of the capitellum is a rare joint fracture, with a frontal line. It occurs in adolescents after the age of 14 and in adults with predominantly female patients.<sup>[6, 7]</sup> The causes described in the literature and also for our patients are falls on the elbow flexed. This results from the transmission of an axial force through the radius that shears the capitellum in the coronal plane<sup>[8]</sup> The positive diagnosis is unfortunately often late<sup>[9]</sup> because the radiographic diagnosis is difficult<sup>[10]</sup>, the frontal X-ray may be normal. The diagnosis is thus posited by the profile snapshots that show a fragment in the form of a "crescent moon" detached from the humeral condyle. CT with possible reconstruction can be performed for the study of fragment size and operative planning.<sup>[11]</sup> Several lesions may be associated with fractures of the capitellum, the main one being the fracture of the radial

head. Soft tissue lesions such as medial lateral ligament rupture were noted.<sup>[12,9,13]</sup> explaining the sequelae stiffness.

The treatment of displaced capitulum fractures is debated.<sup>[14]</sup> Orthopedic treatment has almost no place.<sup>[15,16,17]</sup> Excision of the capitellum is conceivable only for comminuted fractures inaccessible to any osteosynthesis<sup>[1,3]</sup> Surgical reduction with osteosynthesis is currently the rule.<sup>[13,16,18]</sup> A wide variety of internal stabilization techniques have been described in adolescent and adult abutment is the method of osteosynthesis of choice.<sup>[13,18,19]</sup> preferably by cannulated screws (Herbert type).<sup>[17,20]</sup> Our treatment consisted of a more anatomic open reduction and stabilization by 2 buried Herbert screws, thus allowing better compression. A "testing" of the mobilities was done preoperatively,

thus evaluating the congruence. Herbert's screws have the advantage of being buried so as not to irritate the soft tissues. There is no need for removal of the screw from where the rehabilitation program starts earlier and functional recovery is faster.

## CONCLUSION

Thanks to the development of surgical techniques, the prognosis of fractures of the capitellum is currently better. The stabilization by screw of Herbert which is a modern method gives satisfactory results because it allows a strong compression inter-fragmentary, an early mobilization, and thus of the functional recovery of the elbow

## CONSENT

The patient has given their informed consent for the case to be published.

## Competing interests

The authors declare no competing interest.

## Authors' contributions

All authors have read and agreed to the final version of this manuscript and have equally contributed to its content and to the management of the manuscript.

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