

Case Report

Bilateral Fenton's Syndrome: A Case Report and Literature Review

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Abstract

Fenton's or scaphocapitate syndrome is a rare injury, bilateral forms are exceptional. This rare injury of the wrist is characterized by scapho-capitate fracture and associated perilunate dislocation. This article presents a case of a bilateral form of Fenton's syndrome and a review of literature.

Introduction

Fenton's syndrome is a rare injury that associates scaphoid and capitate bones fracture in which the proximal fragment of the latter is rotated over than 90 degrees [1-3]. It was first described in 1937 by Perves et al. [4], but known as Fenton's syndrome as this author described two cases in 1956 [5]. Its mechanism is still controversial, and this lesion goes often unnoticed in the initial radiographic examinations [2]. We report here an exceptional case of a bilateral Fenton's syndrome.

Case Report

A 25-year-old male right handed hand worker who underwent a trauma to both his wrists during a road accident. Clinical and radiographic examination revealed initially a bilateral perilunate transscaphoid fracture dislocation so the reduction of both dislocations was performed and both wrists were immobilized (Figure 1, 2, 3 and 4), three weeks later the patient was seen in medical consultation with new radiographic examination which revealed a bilateral Fenton's syndrome, and a CT-scan of both wrists confirmed the diagnosis. (Figure 5,6,7,8,9,10,11, and 12), so the patient was admitted to undergo surgical treatment. Regarding the right wrist, a palmar approach was performed, the head of the capitate was totally enucleated, and the scaphoid fracture was comminutive so no osteosynthesis was performed. Then regarding the left wrist, a palmar approach was also performed, the head of the capitate was replaced and nailed and then both wrists were immobilized (Figure 13,14,15 and 16). At 18 months follow up, X-rays showed a non-union of both scaphoid fractures and a union of

the left capitate fracture (Figure 19 and 20), the right wrist motion was 40° in flexion, 30° in extension, 10° in radial deviation, and 20° in ulnar deviation. The left wrist motion was 30° in flexion, 20° in extension, 0° in radial deviation and 15° in ulnar deviation. And according to the Cooney score, the global clinical results were qualified as middle



Figure 1 and 2: Initial X-Rays of the right wrist showing a perilunate transscaphoid fracture dislocation.



Figure 3 and 4: Initial X-Rays of the left wrist showing a perilunate transcapitoid fracture dislocation.



Figure 5 and 6: Right wrist X-Ray three weeks after the initial trauma showing the capitate head fracture.

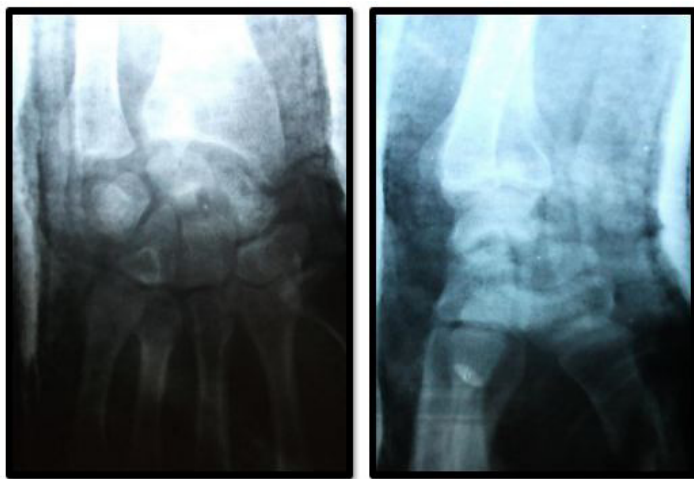


Figure 7 and 8: Left wrist X-Ray three weeks after the initial trauma showing the capitate head fracture.

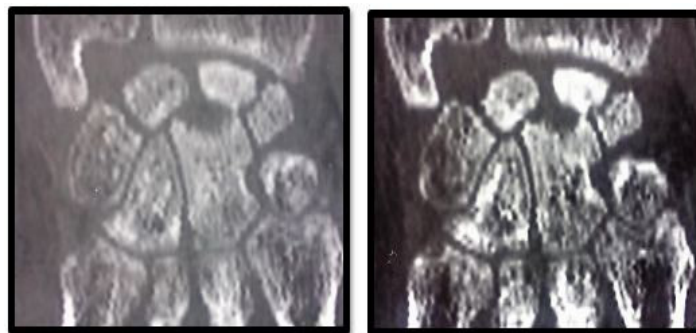


Figure 9 and 10: Right wrist CT- Scan three weeks after the initial trauma showing the capitate head fracture.



Figure 11and 12: Left wrist CT- Scan three weeks after the initial trauma showing the capitate head fracture.

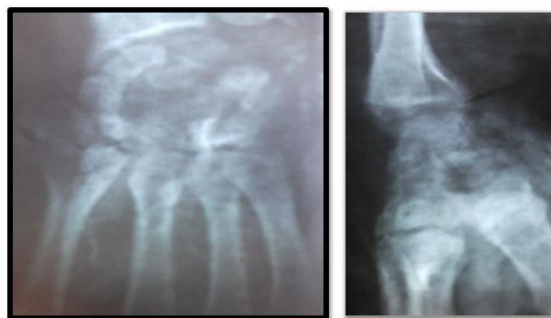


Figure 13 and 14: Right wrist post- operative X-Ray the capitate head was totally enucleated and no ostosynthesis for the scaphoid.

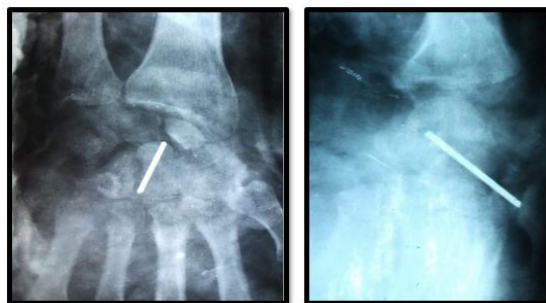


Figure 15 and 16: Left wrist post- operative X-Ray the capitate head was replaced and nailed and no ostosynthesis for the scaphoid.

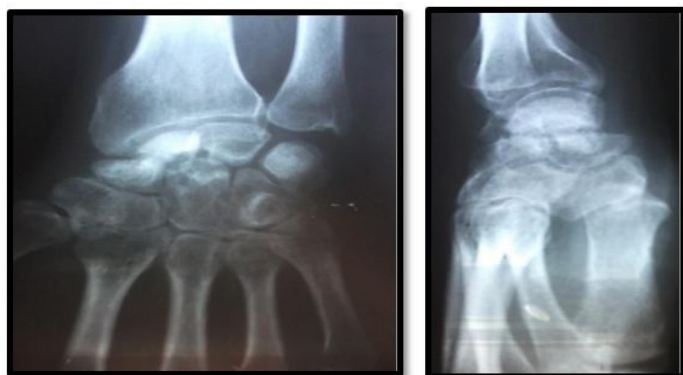


Figure 17 and 18: Right wrist X-Ray at 18 months: there is a non-union of the scaphoid fracture.



Figure 19 and 20: Left wrist X-Ray at 18 months: there is a non-union of the scaphoid fracture and a union of the capitulum fracture.

Discussion

The Fenton's syndrome is a rare injury [1-11], according to Freeman et al. it has an incidence of 1.3% [10], and we found only one published case of a bilateral form of the injury [12]. This injury occurs always in young men [1-11]. Hokan et al. described a case in a child [13]. The injury mechanism is still controversial, according to many authors it is a trauma of a hand with forced extension and axial compression [1,2], But according to Fenton et al. [5] it is due to a trauma of a hand with forced hyperextension and radial deviation but Boisgard et al. [3] stipulated that this mechanism doesn't explain the occurrence of an associated perilunate dislocation. The clinical examination is not specific [3], and the diagnosis is difficult and often delayed, that's why we believe that a CT-Scan is almost essential not only to confirm the diagnosis but also to assess the degree of rotation of the capitulum head [2]. Then we believe in accordance with other authors that the best therapeutic measure is to perform an open reduction of both fractures [2] and stabilize them with internal fixation using kirshner® wires and or either Herbert® Herbert wipple® and or Acturac® miniscrews [2]. Some complications could occur during the evolution and the most redoubted ones are the capitulum head necrosis and

pseudarthrosis [2]. The majority of the reported cases had a good final clinical result [3], in our case the clinical result was qualified as middle, this could be explained by the fact that no osteosynthesis of the scaphoid fracture was possible because of the comminutive character of them.

Conclusion

Fenton's syndrome is a rare lesion, bilateral forms are exceptional, the mechanism is still controversial, the clinical and radiological diagnosis is difficult, and CT-scan can be very useful. The treatment should be always surgical including an open reduction using a dorsal or a palmar approach and an internal fixation.

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