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ORIGINAL ARTICLE

Fenton syndrome☆

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PALABRAS CLAVE
Muñeca;
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Abstract Scaphocapitate, or Fenton syndrome, is a rare injury. This article presents three new cases that were treated by open reduction and internal fixation with miniscrews, obtaining good results at 16 months follow-up.

KEYWORDS
Wrist;
Carpus;
Fracture;
Dislocation;
Capitate bone

Síndrome de Fenton

Resumen El síndrome de la fractura-luxación transescafo-hueso grande o síndrome de Fenton, constituye una lesión muy poco frecuente. En este artículo se presentan 3 casos que fueron tratados mediante reducción abierta y fijación interna con minitornillos, obteniendo buenos resultados a los 16 meses del seguimiento medio.

Introduction

Trans-scaphocapitate fracture-dislocation, scapho-capitate or Fenton syndrome, is a special form of trans-scaphoid–perilunate carpal fracture in which there is a combined fracture of the scaphoid and capitate bones and in which the proximal fragment of the latter is rotated over 90°, generally 180°.[1–3] Very few cases of this syndrome have been published and most of them are unique.[4–15] The problem is that this lesion, mainly the capitate bone fracture, is often overlooked in the initial radiographic examination, thus leading to functional sequelae with difficult solution.

This work is based on 3 new cases and also conducts an extensive review of the literature on this particular lesion, commenting on its aetiology, diagnosis and treatment.

Material and method

Between 2007 and 2010 we treated 3 patients (2 males and 1 female) for Fenton syndrome at our centre. Their mean age was 26 years (19, 21 and 32 years) and the affected wrist was the right wrist in all cases. Two of the 3 patients

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Figure 1 Radiographic study of a patient with Fenton syndrome. (A) Anteroposterior projection. (B) Oblique projection. Note the association of a scaphoid fracture with another, located in the neck of the capitate, with the proximal fragment rotated 180°.

reported suffering the lesion due to a motorcycle accident and the third had an accidental fall. All cases reported significant pain and swelling of the dorsum of the wrist. The radiographic study by anteroposterior, lateral and oblique projections showed an association of both fractures, as well as a rotation over 90° of the head of the capitate bone with respect to the rest of the bone (Fig. 1).

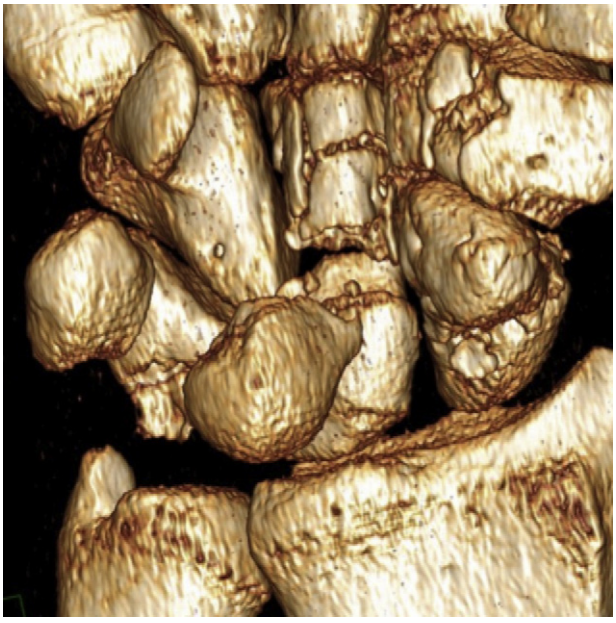

Figure 2 CT study of the wrist of the same patient as in Fig. 1. Note the rotation of the head of the capitate bone.

In addition, computed tomography (CT) studies revealed a rotation of the proximal fragment of the capitate bone (Fig. 2).

The treatment established for all 3 patients (which was not delayed more than 3 days) consisted of open reduction of both fractures and internal fixation, using Acutrak® miniscrews (Acumed, USA) in 2 cases and Herbert-Whipple® miniscrews (Zimmer, USA) in the remaining case (Fig. 3).

Moreover, we also temporarily stabilised the 2 carpal rows using Kirschner wires. Following surgery, the wrist was immobilised for 6 weeks, after which the cast and Kirschner wires were withdrawn and rehabilitation with the assistance of a physiotherapist was started.

The mean follow-up period was 16 months, with a minimum of 12 and a maximum of 24 months. At the end of this period we assessed the presence of pain, balance of the wrist joint, fracture consolidation and the presence of osteoarthritis and/or necrosis of the head of the capitate and/or scaphoid bones.

Results

None of the patients reported pain at the end of the follow-up period, although 1 of the 3 patients reported mild discomfort after strenuous activity. The mean wrist joint balance was 55° extension, 50° flexion, 22° ulnar tilt and 8° radial tilt. The consolidation of both fractures was achieved at 8 weeks in all 3 cases. The postoperative CT scan performed at 6 months enabled us to rule out the development of degenerative changes and avascular necrosis of the proximal pole of the capitate and scaphoid bones.

All patients were satisfied with the outcome.