

DISPLACED FRACTURE OF THE LUNATE IN A CHILD

L. DE SMET¹, G. FABRY¹, D. STOFFELEN¹, P. BROOS²

This is a report of an additional case of transverse fracture of the lunate with marked displacement, requiring open reduction and osteosynthesis. The lunate became necrotic with all features of Kienböck's disease.

Keywords : lunate ; fracture ; Herbert screw ; Kienböck ; carpus.

Mots-clés : sémi-lunaire ; fracture ; vis d'Herbert ; Kienböck ; carpe.

INTRODUCTION

Fractures of the lunate are rare and mostly of the avulsion or chip fracture type (2-7). Even in fractures of the body, displacement is minimal. This paper reports an additional case in an 11-year-old boy.

CASE REPORT

An 11-year-old boy was admitted to the hospital after falling out of a tree, injuring his right wrist. The wrist was tender and swollen. Mobility of the fingers was painful, but possible. The neurovascular status of the hand was intact. Radiographs and tomograms revealed a fracture of the body of the lunate in the frontal plane. The general configuration of the carpals seemed normal, and no other lesions were evident (fig. 1).

An exploration through a dorsal approach revealed rupture of the scaphotriquetral and radiotriquetral ligaments, a dorsal displaced fragment of the lunate and a depression of the distal articular surface of the triquetrum. To obtain an anatomical reduction, an additional volar incision was necessary. The volar fragment was herniated

through Poirier's space, without soft tissue connections. The lunate was reduced and temporarily fixed with a K-wire, which was replaced by two Herbert screws. Once the lunate was fixed, a volar displacement of the distal carpal row was obvious. This was reduced easily and maintained with a 1.5 mm K-wire (fig. 2).

The wrist and hand were immobilized in a plaster cast for 6 weeks. The K-wire was removed after 6 weeks. Despite intensive and adequate physiotherapy, the radiocarpal joint remained very stiff (extension 25°, flexion 15°) but painless. On radiographs, one year after the injury, the lunate was very condensed, with fragmentation and collapse ; all features of genuine Kienböck's disease were present (fig. 3).

DISCUSSION

Fractures of the lunate are very rare, occurring in less than 1.5% of all carpal fractures (2, 4, 7). Usually they are seen in association with perilunate dislocations, or in Kienböck's disease (3, 6).

Recently Teisen and Hjarbaek (7) collected 17 cases over a 31-year period and proposed a classification. This proposal was discussed by Beckenbaugh *et al.* (1) and Dobyns (5). A fracture in the plane of the axis of the lunate is called a transverse fracture by the former and a frontal

¹ Department of Orthopaedic Surgery, University Hospital Pellenberg, K.U. Leuven, B-3212 Pellenberg, Belgium.

² Department of Traumatology and Emergency Medicine, University Hospital Gasthuisberg, K.U. Leuven, B-3000 Leuven, Belgium.

Correspondence and reprints : L. De Smet.

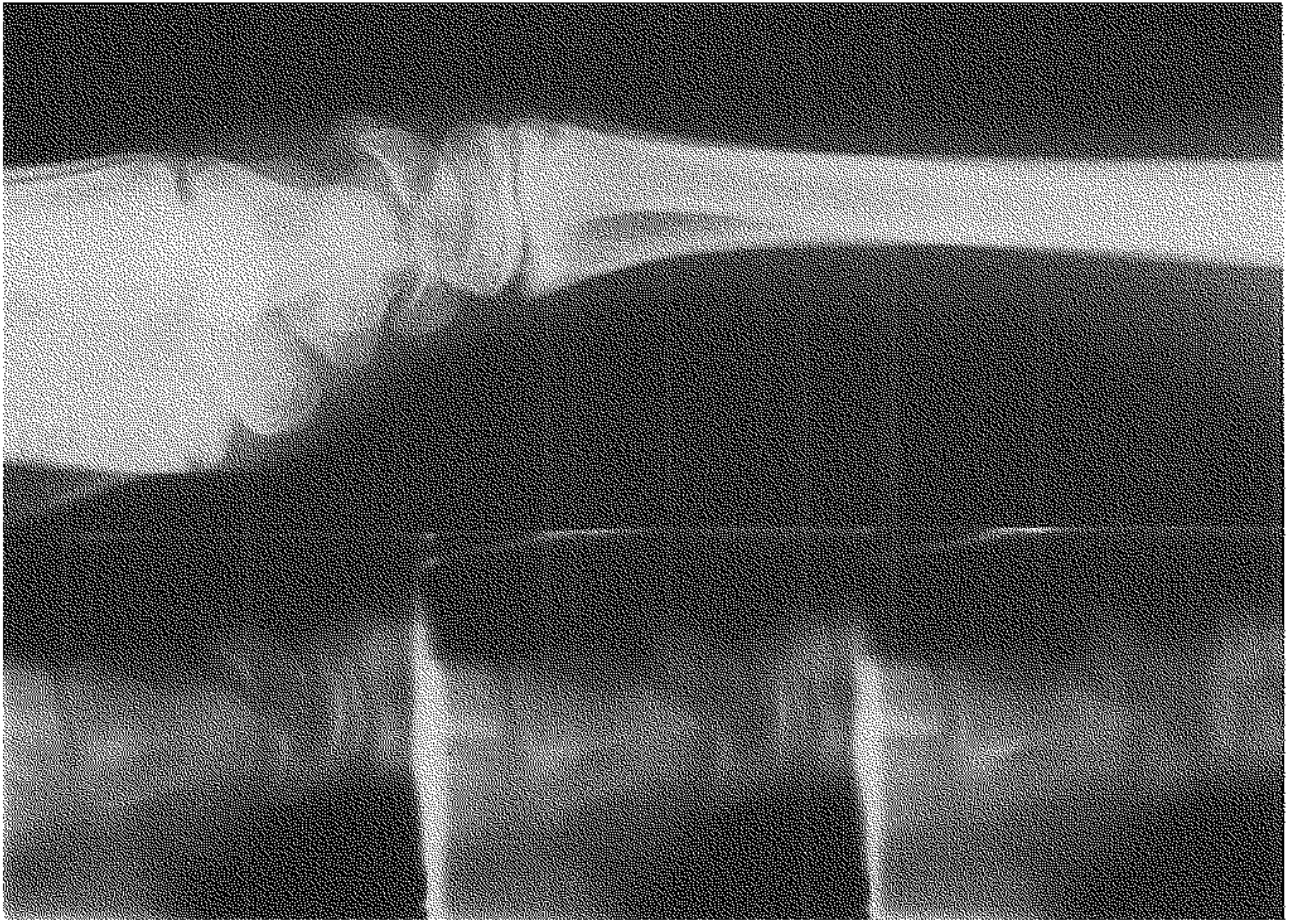


Fig. 1. — X ray of the fresh fracture, with marked displacement.

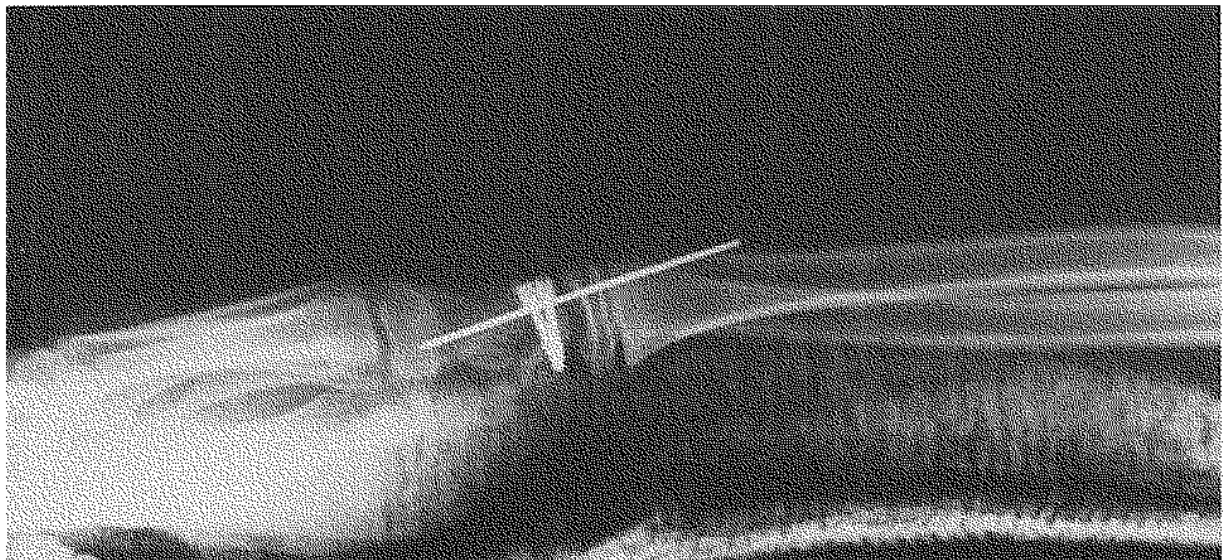


Fig. 2. — Postreduction and fixation x ray.