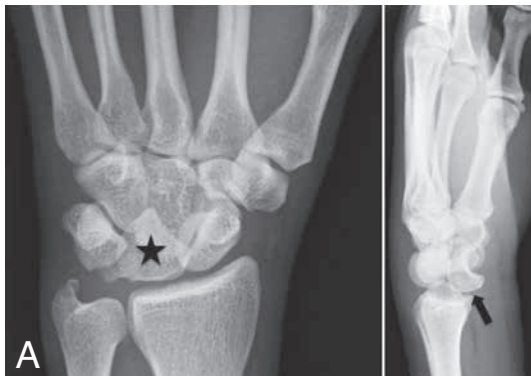


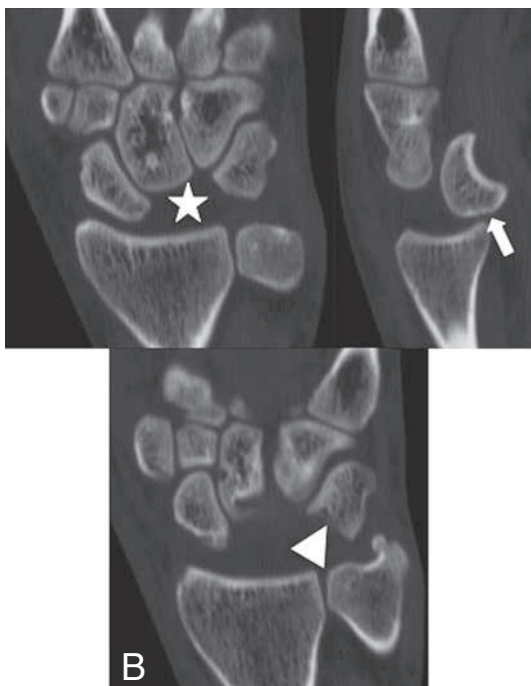
IMAGES IN CLINICAL RADIOLOGY



Lunate dislocation

F. Filippitzi¹, B. Dallaudière¹, P. Omoumi¹, F.E. Lecouvet¹, M. Lefere¹, B. Vande berg¹, A. Larbi¹

A 38 year-old patient was admitted to the emergency department after road accident due to pain on palpation of the right wrist, the 1st and the 2nd finger of the right hand. The patient was subsequently referred for an X-ray. Following the proper positioning of the patient and the systematic analysis of the wrist X-ray (PA and lateral view), a lunate dislocation was diagnosed (Fig. A). A CT scan of the right wrist was then performed, at the request of the surgeon, which clearly demonstrated the lunate dislocation and an additional triquetral fracture (Fig. B).



Comment

The lunate dislocation is one of the most severe carpal instability lesions and it is commonly associated with a trans-scaphoid fracture (Fenton syndrome). It involves all the intercarpal joints and disruption of most of the major carpal ligaments. It produces volar dislocation and forward rotation of the lunate. The concave distal surface of the lunate therefore faces anteriorly (Fig. A) and the capitatum drops into the space vacated by the lunate. The capitatum and all the other carpal bones lie posterior to the lunate on the lateral radiography. On a frontal projection however, the triangular appearance of the lunate is preserved (Fig. A). When analyzing a wrist radiograph to look for possible carpal instability or fracture dislocation, one should first check the good quality of the picture, in particular the good positioning of the wrist (on the PA and lateral views). Secondly, a systematic analysis is essential. On the PA view the normal alignment between the carpal bones should be verified, as well as the integrity of the three carpal lines (Gilula's arcs) and the respect of the joint spaces, always < 2 mm. On the lateral view, the alignment of the radius-lunate-3rd metacarpal bone should be verified, as well as the congruity of the capitatum with the cup of the lunate. The eight carpal bones form an intricately connected unit that allows for three-dimensional movements of the wrist. They are divided into two horizontal rows. The proximal row (scaphoid, lunate, triquetrum) forms an intercalated segment between the radius and the distal carpal row, and maintains wrist stability. The distal row, supporting the metacarpals, consists of the trapezium, trapezoid, capitatum and hamatum. Both intrinsic and extrinsic ligaments support the wrist. The extrinsic ligaments run between the radius or ulna and the carpal bones, whereas the intrinsic ligaments link adjacent carpal bones. The CT scan is done because in 30% of cases, these lesions were overlooked in the initial posttraumatic setting but could be seen retrospectively. In this case the scaphoid was intact but there was a triquetral fracture (Fig. B). The treatment consisted to reduce the lunate dislocation and to synthesize the triquetrum fracture; because of the risk of early osteoarthritis. To conclude, in case of doubt during the systematic analysis of the X-ray, a CT-scan should be also performed.

Reference

1. Gilula L.A.: Carpal injuries: analytic approach a case exercises. *AJR*, 1979, 133: 503-517.