



Case Report:

Kienbock Disease

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Abstract:

A case of a 27 years old female with history of pain in left wrists is presented. Investigations revealed necrosis of left lunate (Kienbock disease).

Key Words: Kienbock disease, Lunate necrosis

Case Reports:

A 27 years old female reported with pain in left wrist of about 18 months duration, mostly felt while typing on the keyboard of computer. There was no significant past history. Patient was getting relief by regular use of analgesics (NSAIDS). Physical examination did not reveal any significant abnormality. Plain films of left wrist (Fig.1) revealed features of necrosis of lunate (Kienbock disease).

Kienbock disease is the eponym for avascular necrosis of the lunate.¹ It is named after Robert Kienbock, a Viennese radiologist in the early 1900's. The exact etiology is poorly understood particularly² as it occurs most often in the absence of obvious trauma. Most patients are men in their third to fourth decades and are either manual laborers or actively participating in recreational activities that repetitively load the wrist. Patients present with complaints of activity-related dorsal wrist pain, decreased wrist motion in the flexion-extension arc, and poor grip strength. On examination, dorsal wrist swelling and tenderness are frequently present over the radio carpal joint. Kienbock disease has been found to be associated with ulnar minus variance. It is thought that these patients are predisposed to abnormally increased stresses across the lunate resulting in repeated micro trauma leading to necrosis. With time, there is resultant abnormal rotation of the scaphoid leading to increased lunate loading and further necrosis. Plain films and MRI are the most useful modalities for diagnosis and staging. There are four stages of this disease based upon the radiological progression of the disease:³

Stage I: Radiographic findings are normal, but the bone scan findings are positive for disease. MRI shows a decreased signal on T1- and T2-weighted images.

Stage II: Sclerotic changes and fractures are visible on radiographs; however, carpal integrity is intact.

Stage III (A and B): This stage occurs when the lunate collapses and the capitate migrates proximally. In stage IIIA, no fixed carpal derangement is noted. In stage IIIB, decreased carpal height, ulnar migration of the triquetrum, scapholunate dissociation, and flexion of the scaphoid are noted.

Stage IV: This stage is associated with additional carpal degeneration and generalized arthritis.

Initially treatment is conservative and includes analgesia and immobilization with splints.⁴ When unsuccessful, various surgical options are available which include lunate excision with or without silicon replacement arthroplasty, osteotomy of the radius to compensate for ulna minus variance, intercarpal fusion and revascularization. Radial shortening (joint levering)⁵ is most commonly used, resulting in decreased pain and improved function in up to 90% of patients. In spite of surgical correction, collapse and degeneration of the lunate may continue.

(See Fig on Page 2)

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Fig 1: Plain radiographs of left wrist: Oblique view (A) and Antero-posterior view (B) showing lunate necrosis

