



## A CASE OF KIENBÖCK DISEASE SUCCESSFULLY MANAGED CONSERVATIVELY

## Orthopaedics

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## ABSTRACT

Kienbock's disease is a rare condition with an unknown etiology. It should be considered in male patients of 20 to 40 years of age who presents with insidious onset progressive type of wrist pain. MRI is a sensitive mode for diagnosing the disease than a plain radiograph. There is no definitive treatment of the disease and may vary from conservative measures to surgical procedures depending on the stage of disease.

## KEYWORDS

Kienbock's disease, Lichtman classification

## INTRODUCTION

Kienböck disease or osteonecrosis, lunatomalacia, and aseptic or avascular necrosis of the lunate bone was first described by the Austrian radiologist Robert Kienböck in 1910. (1) It is a rare condition with insidious onset progressive by wrist pain which aggravates on activity, a reduced range of movement and decreased grip strength (2) Plain X ray is usually not conclusive. MRI is useful in diagnosis and staging. We present a case of a 24 year old male with the disease managed conservatively.

## CASE REPORT

24year old right handed male patient presented with progressive right wrist pain of three months duration. There was no history of any injury to wrist. Clinically patient had mild tenderness on the dorsal aspect of the wrist. Flexion/extension of the right wrist was 85°/85° as compared with 90°/90° on the left side with other movements normal and pain free and had a good grip. X ray wrist showed no bony injury. However in view of persistent pain an MRI was done which revealed marrow edema and sclerosis of lunate bone without evidence of collapse, Kienböck's disease Stage II as per Lichtman classifications. Patient was managed conservatively by immobilization of wrist by splinting and physiotherapy. On follow up after 03 months patient showed improvement in pain.



Figure 1 : X Ray Of Right Wrist



Figure 2 :MRI of the right wrist

## DISCUSSION

Kienböck's disease mostly presents in male (Male : Female is 9: 1) in age group of 20 to 40 years, predominantly in manual workers (3). It affects both dominant and non-dominant hand equally and is usually a unilateral condition but bilateral involvement may occur (4). There are a number of risk factors and trauma is a preceding factor (2). Negative

ulnar variance of the wrist is also a significant risk factor for the development of the disease (5) due to anatomical differences in the blood supply to the lunate leading to reduction in venous outflow (6). The patient usually presents with insidious, progressive dorsal wrist pain surrounding the lunate bone with or without localized swelling. Pain aggravates with flexion and extension movements, may present with poor grip and difficulty to load the affected wrist into extension (7). Clinically the patient may have tenderness of lunate on palpation.

Radiography is the initial imaging technique to rule out other pathologic conditions.

MRI is a sensitive modality to diagnose and stage the disease. The Lichtman classification is a valid and reliable tool for detecting and staging the disease.

The Lichtman classification (8) :

Stage I radiographs are normal or a linear fracture of the lunate may be visible.

Stage II the lunate becomes increasingly radiodense.

Stage IIIA reveals lunate sclerosis with fragmentation without associated carpal alignment changes.

Stage IIIB carpal collapse and fixed scaphoid volar flexion are seen.

Stage IV pancarpal arthrosis exists

Treatment of Kienbock's disease ranges from conservative measures, usually to immobilisation during the acute phase, to surgical procedures (9) as joint levelling by radial shortening or ulnar lengthening, (10,11) intercarpal fusion , silastic arthroplasty and vascularised bone grafts (12) .

## CONCLUSION

Kienböck disease is a condition marked by avascular necrosis of the lunate bone with no definitive treatment. It is a challenging problem and is a progressive disorder resulting in joint destruction within 3–5 years if untreated. MRI helps in visualizing the bone anatomy, the staging of disease, and ruling out other diagnoses.

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