Successful Conservative Management of Kienbock’s Disease in a 7-year-old: A Case Report

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Abstract
Background: Kienbock’s disease is primarily seen in young adult males but has been recognized in skeletally immature populations as well. Traditional treatment strategies recommend operative treatment but high remodeling potential in children may allow conservative management.

Case Description: We present the case of a 7-year-old female with two months of atraumatic right wrist pain who was found to have edematous signal change within the lunate on wrist MRI consistent with Kienbock’s disease. She was treated with rigid immobilization for 12 weeks and transitioned to custom orthotic splint for another 3 months during activities. At her 6-month follow-up, she reported minimal wrist pain with repeat MRI demonstrating resolution of lunate edema.

Introduction
Kienbock’s disease is primarily seen in young adult males. It is rare in children and often referred to as “Teenbock’s Disease” as the treatments are not as clear as with adults.

Methods
7-year-old female presented with Kienbock’s disease and subsequently followed-up at 8 weeks, 6 months, and 3 years post injury.

Institutional Review Board (IRB) exemption was obtained, and patient and family were informed and consented to the case report.

Case Timeline

Initial Presentation
Subjective: 7 Year Old Right Wrist Pain with 2 months of atraumatic Right wrist pain. Exam: Global wrist tenderness with sharp pain over dorsal wrist worse with extension/hexon and axial loading.

Initial Study: LUNATE EDEMA. MRI: Lunate and scaphoid T1 FS sequences of the right wrist showing edema of the lunate.

Plan: Continue short arm cast x 12 weeks.

Case Timeline

8-Week Follow-Up
Subjective: Patient has been in cast for 8 weeks with minimal symptoms.

Imaging: Figure 3: Anterior-Posterior, Lateral and Oblique plain radiographic projections of the right wrist show no signs of carpal mal-alignment or osseous change to the lunate.

Case Timeline

6-Month Follow-Up

Subjective: Patient was seen by Rheum for right elbow elevation in Anti-CCP and found to have no evidence of rheumatologic disease.

Imaging: Figure 4: Axial, Sagittal and Coronal PD FS sequences of the right wrist showing resolution of edema within the lunate at six months after initial presentation.

Case Timeline

3-Year Follow-Up

Subjective: Patient denies pain or any other complaints.

Exam: 10-15 degree decrease in ROM compared to contralateral side.

Imaging: Figure 5: Radiographs without any signs of carpal mal-alignment or osseous change to the lunate.

Discussion/Conclusions
This is the youngest case of Lichtman stage I Kienbock’s disease successfully treated with conservative management resulting in clinical and imaging resolution.

Younger patients may be able to successfully remodel and recover from Kienbock’s disease with extended time in conservative management.

Duration of conservative treatment in this case was consistent with the recently described protocols of Lichtman et al.

This case report has limitations as it is unable to be generalized and may not apply to similar cases due to inability to understand every extraneous factor affecting disease progression and resolution in this patient.

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References