



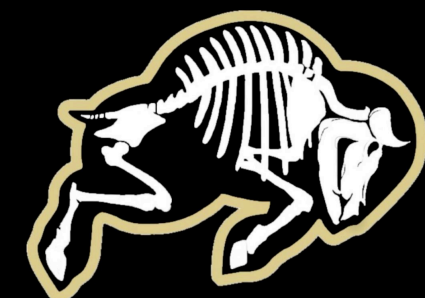
Children's Hospital Colorado
Musculoskeletal Research Center

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

Ryan T. Calkins, B.S.¹; James Lendrum, MD/MPH¹; Alex Lencioni, MD¹; Tyler Freeman, MD¹; Frank Scott, MD^{1,2}

¹Department of Orthopaedic Surgery, University of Colorado School of Medicine, Aurora, CO

²Department of Orthopaedic Surgery, Children's Hospital Colorado, Aurora, CO



ORTHO
University of Colorado

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.

Literature Review: Available literature shows a significant portion of patients treated conservatively subsequently require surgical intervention due to unresolved symptoms or progressive disease. Only three cases are reported in the literature where skeletally immature patients were successfully treated with conservative management alone

Clinical Relevance: We report 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 disease with extended time in conservative management.

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/family was informed and consented to the case report.

Case Timeline

Initial Presentation

Subjective: 7-Year-Old RHD F with 2 months of atraumatic R wrist pain.
Exam: Global wrist tenderness with sharp pain over dorsal wrist worse with extension/flexion and axial loading
Labs: NL CRP, ESR, RF, slightly elevated Anti-CCP
Imaging: Figures 1, 2
Plan: Short arm cast x 12 weeks

8-Week Follow-Up

Subjective: Patient has been in cast for 8 weeks with minimal symptoms
Imaging: Figure 3
Plan: Continue short arm cast for 4 weeks and then transition to a custom orthosis x 4 months

6-Month Follow-Up

Subjective: Patient was seen by Rheum for slight elevation in Anti-CCP and found to have no evidence of rheumatologic disease
Imaging: Figure 4
Plan: Continue orthosis for 1 additional month and transition to normal activity

3-Year Follow-Up

Subjective: Denies pain or any other complaints.
Exam: 10-15 degree decrease in ROM compared to contralateral side
Imaging: Figure 5
Plan: Continue normal activity as tolerated

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.

Acknowledgements/Additional Info

Thank you to Andy Lalka, MPH for his management of this Case Report.

No funding was received for this work.

No conflicts of interest to report for any authors.

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Initial Presentation



Figure 1: AP, Lateral and Oblique plain radiographic projections of the right wrist upon initial presentation without any signs of carpal mal-alignment or osseous change to the lunate.



Figure 2: Axial, Sagittal and Coronal T1 FS post contrast sequences of the right wrist showing edema of the Lunate.

6-Month Follow-Up



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

8-Week Follow-Up



Figure 3: Anterior-Posterior, Lateral and Oblique plain radiographic projections of the right wrist after eight weeks of immobilization, without any signs of carpal mal-alignment or osseous change to the lunate.

3-Year Follow-Up



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