Perilunate Dislocation, with Scapholunate and Lunotriquetral Tear in a Division I Football Player

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Abstract

Background: A 21 year old, male collegiate offensive lineman (body mass=135.17kg; ht=193cm), with no previous history of left lunate carpal injury, was making a block during practice. His hand was in a hyperextended position when his elbow was struck posteriorly. He experienced immediate pain and swelling, decreased range of motion, and tenderness in the distal radius area. On-site evaluation by the Athletic Trainer warranted a referral to the walk in clinic. X-rays were taken and no deformity was noted and the patient was released in a splint.

Differential Diagnosis: Wrist sprain, wrist fracture, wrist dislocation. Treatment: The team orthopedic physician reviewed the X-ray and noted the lunate was dislocated. The same evening, the athlete was referred to the emergency department for an immediate closed reduction procedure and was sent home in a soft splint. Five days later the athlete had pain and a noticeable defect on the dorsum of his left hand. The team physician referred him to a hand physician and five days later the athlete underwent surgery for an open reduction internal fixation operation. During surgery, the ligament tears were identified and three Kirschner wires were fixated and the wrist was splinted in a hard cast. The athlete was cleared to play four weeks later.

Conclusion: The hands are an essential part of daily life and preserving their longevity is crucial in performing day to day functions. The hands are an essential part of daily life and preserving their longevity is crucial in performing day to day functions. The hands are an essential part of daily life and preserving their longevity is crucial in performing day to day functions.

Treatment

- X-rays were taken and no deformity was noted on initial x-rays, the athlete was sent home in a splint
- The team orthopedic physician reviewed the x-rays the same evening and recognized the athlete dislocated his lunate and referred him to the emergency room to have the dislocation reduced.
- The orthopedic surgeon on call reviewed the x-rays and confirmed the lunate dislocation and a closed reduction maneuver was performed. X-ray prior to surgery
- Eight days later The left wrist showed the lunate to be in a slight dorsal intercalated segmental instability (DISI) position.
- Two days later the athlete underwent an Open Reduction Internal Fixation procedure. X-ray prior to surgery
- Three K-wires were used to secure the instability, one was placed across the scapholunate ligament; the second across the lunotriquetral ligament and the third was used to help control scaphoid flexion and was placed from the scaphoid into the capitate.
- A pin was then inserted into the proximal pole of the scaphoid to secure the remaining ligament from the lunate onto the scaphoid.

Differential Diagnosis

- Carpus and wrist:
  - sprain
  - fracture
  - dislocation

Uniqueness

- Carpal dislocations are commonly missed on initial imaging and are misdiagnosed as wrist sprains.
- An estimated 2.5% of all Emergency Department (ED) visits are related to wrist injuries2,4 and less than 10% of all injuries are carpal dislocations.3

Conclusions

- The hands are an essential part of daily life and preserving their longevity is crucial in performing day to day functions.
- Working closely and communicating effectively with the sports medicine team is vital to obtaining the correct diagnosis.
- Correct diagnosis was missed on initial review, which can lead to long term wrist dysfunction.
- Working with an orthopedic sports medicine physician, who is well-versed in sports injuries, is vital.
- When referring an athlete for x-rays, always request contra lateral views for comparison.

References

4. Armbruster E, Capo J, Tan V, Fuller D. Perilunate dislocation: case studies of a frequently missed diagnosis: 2, 4 and less than 10% of all injuries are carpal dislocations.3 4 5

Clinical Significance

- Correct diagnosis was missed on initial review, which can lead to long term wrist dysfunction.
- Working with an orthopedic sports medicine physician, who is well-versed in sports injuries, is vital.
- When referring an athlete for x-rays, always request contra lateral views for comparison.

Background

- A 21 year old, male collegiate offensive lineman (body mass=135.17kg; ht=193cm)
- The patient’s hand was in a hyperextened position when his elbow was struck posteriorly
- The athlete felt a pop and immediately felt pain on the dorsum of his wrist and stated he felt like he broke his wrist.
- The athlete experienced exacerbated pain with flexion and extension.
- His resisted range of motion was weak and painful.
- No palpable defects, deformities, scars, atrophy, or discolorations were noted.