Flexor Tendon Rupture Due to Previously Undiagnosed Kienböck Disease: A Case Report

HAND
2017, Vol. 12(3) NP37–NP38
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Hand Surgery 2016
DOI: 10.1177/1558944716668861
hand.sagepub.com

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Abstract

Background: Spontaneous flexor tendon rupture is rare and most common in the little finger. The pathogenesis of spontaneous tendon ruptures is unclear but may occur through attrition or mechanical abrasion over a bony prominence. Kienböck disease is avascular necrosis of the lunate, with an unknown etiology. **Methods:** We present a case of spontaneous rupture of flexor digitorum profundus due to Kienböck disease, which we believe is the first recorded case of flexor tendon rupture attributable to osteonecrosis of the lunate. **Results:** The patient underwent single-stage reconstruction of FDP and regained a good range of motion at the affected DIPJ. **Conclusions:** This case illustrates the importance of plain radiographs in the assessment of a patient presenting with spontaneous flexor tendon rupture in the hand to exclude bony pathology as a cause.

Keywords: Kienböck disease, tendon rupture, lunate, osteonecrosis, flexor digitorum profundus

Introduction

Spontaneous flexor tendon rupture is rare and most common in the little finger. The pathogenesis of spontaneous tendon ruptures is unclear but may occur through attrition or mechanical abrasion over a bony prominence.

We report a case of spontaneous rupture of flexor digitorum profundus (FDP), which we believe is the first recorded case of a flexor tendon rupture due Kienböck disease.

Case Report

A right-hand-dominant 64-year-old retired plumber presented with a 2-week history of being unable to flex his left index finger at the distal interphalangeal joint (DIPJ), which initially occurred while he was erecting a gazebo. On close questioning, he had suffered from left wrist pain for several years. This had improved following his recent retirement.

Examination demonstrated absent flexion at the left index DIPJ, while flexion at the proximal interphalangeal and metacarpophalangeal joints was preserved. The left index finger was neurovascularly intact, and the movements of the other digits in the left hand were normal.

Plain radiographs demonstrated negative ulnar variance with a sclerotic lunate, suggestive of Stage II Kienböck disease (Figure 1). Both the radiographs and ultrasound revealed the presence of a volar bony prominence or fragment at the level of the carpus (Figure 2).

Figure 1. AP and lateral radiograph of the left wrist demonstrating the volar lunate fragment (a) and osteosclerosis of the lunate (b).

The patient underwent single-stage reconstruction of FDP with a palmaris longus bridge graft. Intraoperatively, it

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Figure 2. Ultrasound of the left carpus demonstrating the presence of a volar bony fragment of lunate within the carpal tunnel (arrow).

was noted that the FDP tendon had ruptured over the volar bony prominence identified on radiograph and ultrasound. This was found to be a loose fragment of the volar lunate protruding into the carpal tunnel, and it was removed via a volar capsulotomy.

The patient had an unremarkable postoperative recovery and at 3 months postoperatively had regained a good range of motion at the affected DIPJ.

Discussion

Kienböck disease is avascular necrosis of the lunate. Its etiology is unknown, although it is hypothesized that a combination of traumatic insult and anatomical variation contributes to the interruption of normal blood flow to the lunate with resultant osteonecrosis.¹

Extensor tendon rupture is a rare sequelae of Kienböck's disease, with several authors reporting cases in the literature.²⁻⁴ However, to our knowledge, there is no other reported case of flexor tendon rupture due to Kienböck disease.

This finding demonstrates the importance of plain radiographs in the assessment of a patient presenting with

spontaneous flexor tendon rupture in the hand to exclude bony pathology as a cause.

Ethical Approval

This study was approved by our institutional review board.

Statement of Human and Animal Rights

This article does not contain any studies with human or animal subjects.

Statement of Informed Consent

Informed written consent was given by the patient for the anonymized radiographs, ultrasound images, and details of his case to be submitted for publication.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

1. Cross D, Matullo KS. Kienböck disease. *Orthop Clin North Am.* 2014;45(1):141-152. doi:10.1016/j.ocl.2013.09.004.
2. Hernández-Cortés P, Pajares-López M, Gómez-Sánchez R, Garrido-Gómez J, Lara-García F. Rupture of extensor tendon secondary to previously undiagnosed Kienböck disease. *J Plast Surg Hand Surg.* 2012;46(3-4):291-293. doi:10.3109/2000656X.2012.668325.
3. Murase T, Ando Y, Hiroshima K. Extensor tendon rupture due to Kienböck's disease. *J Hand Surg Br.* 1997;22(5):597-598.
4. Park JW, Kim SK, Park JH, Wang JH, Jeon WJ. Multiple extensor tendon ruptures with advanced Kienböck's disease. *J Hand Surg Am.* 2007;32(2):233-235. doi:10.1016/j.jhsa.2006.11.002.