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CORR Insights®: What Is the Radiographic Prevalence of Incidental Kienböck Disease?

Ryan P. Calfee MD, MSc

Where Are We Now?

Despite a multitude of surgical interventions reported to treat Kienböck disease, our understanding of the natural history of

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R. P. Calfee MD, MSc (✉)
Department of Orthopedic Surgery,
Washington University in St. Louis,
Campus Box 8233, 660 South Euclid
Avenue, St. Louis, MO 63110, USA
e-mail: calfeer@wudosis.wustl.edu

this process is limited. The authors of the current study approached one aspect of the unknown in determining the prevalence of asymptomatic Kienböck disease by querying reports from 10 years of wrist imaging at one institution. Before this study, we knew that avascular necrosis of the lunate could occur without associated symptoms, although how often this occurred was unknown. Prior studies [1, 4] also indicated that some, but not all, patients with Kienböck disease demonstrated radiographic progression of lunate collapse. Unfortunately, we cannot predict which patients with symptomatic disease are likely to progress to advanced lunate collapse with associated degenerative carpal malalignment. Equally disappointing is the lack of a consensus treatment proven to improve the natural course of the disease in a given individual.

Where Do We Need To Go?

Although the authors concluded that symptoms and disability failed to correlate with pathophysiology, progression, or activity, they found that patients with symptomatic disease

were more likely to present with advanced disease associated with lunate collapse (51% versus 18% in asymptomatic patients). These data suggest that although radiographic stage may correlate imperfectly with clinically relevant symptoms, advanced disease progression is more likely to result in wrist pain, prompting patients to seek medical treatment. For a definitive answer, we would need a large population surveillance study with interval imaging of wrists to determine how and when symptoms occur relative to radiographic changes. The current study fails to delineate the natural history of Kienböck in terms of risk factors for progressive lunate collapse nor does it detail the chance of disease progression following a radiographic detection of disease.

How Do We Get There?

In order to truly understand the natural history of a rare condition like Kienböck disease, I anticipate that we will need collaborative, multicenter investigations. To answer the biggest question remaining (how often, and in whom, does Kienböck disease advance to its

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end stage?) long-term longitudinal data are required about patients who do not undergo treatment. This type of longitudinal natural history data is found for scapholunate ligament injuries and for triangular fibro cartilage complex injuries when each is associated with distal radius fractures [2, 3]. These conditions are unique in their frequency and in their uncertainty regarding its impact on outcomes after distal radius fracture, which allowed a single center to produce meaningful long-term followup after diagnosis without treatment. For Kienböck disease, this type of study may be prohibitive secondary to both the rarity of the condition, which may

necessitate population level surveillance, and the reluctance of surgeons and patients to observe Kienböck disease without intervention. However, if such data regarding Kienböck disease were available, it could be used to construct predictive models for disease progression and then could provide a reference standard against which to judge the effectiveness of our treatments provided.

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