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## Preface

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### Introduction

For many years it has been popular to introduce articles on Kienböck's disease with some variation of the following statement: "Not much new information has been published on the etiology and natural history of Kienböck's disease since the appearance of the manuscript *On Traumatic Lunatomalacia* by Robert Kienböck in 1910." And, to a degree, this statement is true. No one has yet disproved Professor Kienböck's theory that the disease is caused by a compromised lunate blood supply and that some degree of stress or trauma plays a role in the process of lunate collapse. On the other hand, more recent evidence indicates that the etiology is multifactorial, that the disorder progresses through several distinct stages, that there are sophisticated diagnostic techniques available beyond plane x-rays, and that current treatment options are abundant, effective, and adaptable to the precise needs of the patient.

Realizing that much of this information is widely disseminated throughout the world's literature and that some of the currently popular treatment algorithms are based on incomplete use of this widespread database, we decided that a work collecting and synthesizing all this information would be helpful for most physicians treating osteonecrosis of the lunate. Accordingly, the two of us set out to identify selected individuals who have made significant contributions in recent years and to ask them to contribute to this publication. In almost every instance they have participated enthusiastically and added to its depth and diversity.

The goal of this book, then, has been to dispel the popular notion that we are in a static era with respect to the understanding of this enigmatic disorder. More specifically, the ultimate goal has been to consolidate the most important new information on Kienböck's disease in order to develop a more dynamic and nuanced treatment algorithm. Feeling cautiously optimistic that we have achieved this goal, we also acknowledge that there is much more to be accomplished. The many knowledge gaps that persist will surely stimulate additional basic and clinical research. And the time will eventually come when the material presented here, along with the derivative treatment models, will once again need to be revised and elevated to the next level.

One more observation: Throughout this book we use the traditional title, *Kienböck's* disease, rather than the newly fashionable, *Kienböck* disease. Although an argument can be made for either, we feel that the traditional title

is a more appropriate way to honor Professor Robert Kienböck. We hold him in esteem not just for the many professional contributions he made to the fields of radiology and hand surgery but also for the highly honorable way he conducted his personal affairs during the worst turmoil of the twentieth century.

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## Organization of the Book

The book commences with a dedication to the life of Robert Kienböck and the many aspects of this fascinating man's remarkable career. It is written by Dr. Martin Chochole, who practices hand surgery in Vienna, Austria, Dr. Kienböck's hometown.

The first section of the book is devoted to the basic sciences such as anatomy, pathology, and biomechanics of the lunate and Kienböck's disease. It also contains an update on the etiology of the disorder.

The next section details the assessment of the patient including radiology, advanced imaging, and arthroscopy. The clinical presentation is integrated with the natural history and radiologic progression of Kienböck's disease in adults, children, and the elderly. This section also introduces important information on classification and natural history based on advances in detection of bone and cartilage viability.

The treatment section is extensive and reviews the roles and methods of traditional and new treatment options. These include nonoperative modalities, minimally invasive techniques, arthroscopy, reconstructive procedures (e.g., various osteotomies, vascularized bone grafts, and limited wrist fusions), and salvage options (e.g., proximal row carpectomy, wrist fusion, and arthroplasty).

In the final chapter, we bring together the concepts provided throughout the book by the multiple authors. We then construct a more inclusive model of the pathologic stages of Kienböck's disease. From this, we present a matrix in table format for the assessment and treatment of the disease. We conclude with recommendations for future research and development.

David M. Lichtman  
Fort Worth, TX, USA

Gregory Ian Bain  
Adelaide, Australia

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