Broken Bones

Second Edition

Broken Bones contains 434 individual cases and 1,101 radiologic images illustrating the typical and less typical appearances of fractures and dislocations throughout the body. The first chapter describes fractures and dislocations of the fingers, starting with fractures of the phalangeal tufts and progressing through the distal, middle, and proximal phalanges and the DIP and PIP joints. Subsequent chapters cover the metacarpals, the carpal bones, the radius and ulna, the elbow and upper arm, and the shoulder and thoracic cage. The cervical spine and the thoracic and lumbosacral spine are covered in separate chapters, followed by the pelvis, the femur, the knee and lower leg, the ankle, the tarsal bones, and the metatarsals and toes. The final three chapters cover the face, fractures and dislocations in children, and fractures and dislocations caused by bullets and nonmilitary blasts.

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To our families, without whom nothing would be possible or worthwhile.

Broken Bones

The Radiologic Atlas of Fractures and Dislocations
Second Edition

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CAMBRIDGE
UNIVERSITY PRESS

CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning, and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781107499232

First published 2016

Printed in the United States of America

A catalog record for this publication is available from the British Library.

Library of Congress Cataloging in Publication Data
Names: Chew, Felix S. | Maldjian, Catherine. | Mulcahy, Hyojeong.
Title: Broken bones : the radiologic atlas of fractures and dislocations / Felix S. Chew, University of Washington, Catherine Maldjian, New York University, Hyojeong Mulcahy, University of Washington.
Other titles: Broken bones
Description: Cambridge : Cambridge University Press, 2016. | Includes bibliographical references and index.
Identifiers: LCCN 2015039551 | ISBN 9781107499232 (pbk.)
Subjects: LCSH: Fractures. | Dislocations. | Human anatomy – Atlases. | Human keleton – Radiography.
Classification: LCC RD101.C522 2016 | DDC 617.1/5–dc23
LC record available at http://lccn.loc.gov/2015039551

ISBN 978-1-107-49923-2 Paperback

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Preface

This book is an atlas of fractures and dislocations, as depicted by radiologic imaging. It was my intention to illustrate all the common and uncommon fractures that may be encountered in clinical practice, and also include as many of the rare injuries as possible. This book is intended for the use of anyone with an interest in the diagnosis, treatment, and management of patients with fractures or dislocations.

When the first edition of *Broken Bones: The X-Ray Atlas of Fractures* was published in 2009, it was the first full-sized radiology textbook written specifically as an e-book for the Amazon Kindle 2 and Apple iPhone 3GS platforms. With the subsequent introduction and proliferation of the Apple iPad and its competitors and of high-resolution large-screen smart phones, many handheld computing devices now rival or exceed clinical radiology workstations in display quality. All of the radiographic images in the new edition were originally acquired with state-of-the-art digital x-ray equipment and faithfully reproduced to provide the reader with images that take advantage of the excellent display technology now available. While retaining its anatomic organization and case-based format, the book has been expanded from 369 to 434 individual cases, 234 of which are new to the second edition. There are now 1,101 radiologic images, increased from the original 939. The new and revised text for each case is self-contained for the reader who is only able to read the book in snippets, yet the organization of cases within each chapter and the organization of the chapters within the book as a whole provide a logical progression and story arc for the reader with longer blocks of time.

The book is organized by anatomic region. The first chapter describes fractures and dislocations of the fingers, starting with fractures of the phalangeal tufts and progressing through the distal, middle, and proximal phalanges and the DIP and PIP joints. Subsequent chapters cover the metacarpals, the carpal bones, the radius and ulna, the elbow and upper arm, and the shoulder and thoracic cage. The cervical spine and the thoracic and lumbosacral spine are covered in separate chapters, followed by the pelvis, the femur, the knee and lower leg, the ankle, the tarsal bones, and the metatarsals and toes. The final three chapters cover the face, fractures and dislocations in children, and fractures and dislocations caused by bullets and nonmilitary blasts.

The radiologic images have been carefully chosen to illustrate the typical and less typical appearances of fractures and dislocations. It would have been ideal but impractical to include all of the images that were obtained for clinical diagnosis in these cases. To meet the limitations of the textbook format, the images have been cropped, resized, reoriented, and re-leveled. Radiographs are presented in standard fashion, generally looking at the hands, wrists, and feet as if they were the viewer's own, and the other body parts as if the patient were facing the viewer. For clarity and ease of correlation, cross-sectional images are presented in the same orientation as the radiographs they accompany. Many fracture classifications are described in the text, but the coverage of classifications is not meant to be exhaustive or even complete. Radiologists are usually not called on to classify fractures, but it is important to know which characteristics of various injuries determine how they would be classified, so that the imaging examination and report can be more useful.

In my work as a diagnostic radiologist at the University of Washington in Seattle, I see the images from thousands of injured patients every year, including many from Harborview Medical Center (Seattle, WA), the Level 1 Trauma Center that serves the states of Washington, Wyoming, Alaska, Montana, and Idaho, and the University of Washington Medical Center, the region's leading academic medical center. Additional cases used in this book were drawn from the teaching collections of the authors. A few images have been previously published and are used with permission.