Rajal B. Shah
Ming Zhou

Prostate Biopsy Interpretation: An Illustrated Guide

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Rajal B. Shah • Ming Zhou
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To my wife, Ami Shah, and sons Ansh and Alay, for their unconditional love, support, and constantly reminding me that there is life beyond work.
To my parents, Bipin Shah and Sharmishtha Shah, for their genes, sacrifice, and motivation.

Rajal B. Shah, M.D.

To my wife, Lan Zhou, and daughters Grace and Rebecca, for their unwavering support.

Ming Zhou, M.D., Ph.D.

Preface

This book is the product of a prostate biopsy course that we taught at several national pathology meetings over a period of 5 years. After the lectures, attendees of different levels – residents, fellows, pathologists in private practice and academia – came to us to compliment the practicality and timeliness of our course and encouraged us to turn it into a handy reference book. When Melissa Ramondetta, Executive Editor at Springer, approached us for writing a book on prostate biopsy, we enthusiastically agreed to her proposal.

Prostate needle biopsy specimens constitute a significant portion of a surgical pathologist's daily work. However, prostate biopsy specimens are not every pathologist's darling. There is a significant error rate on diagnosing prostate cancer in needle biopsy, slow adoption of the modified Gleason grading system, and considerable variation in reporting. This book aims to cover all the practical issues related to interpretation of prostate biopsies in day-to-day practice, including diagnosis of limited cancer and its distinction from common benign mimickers; diagnosis and the clinical significance of "atypical glands suspicious for cancer" and high-grade prostatic intraepithelial neoplasia; prostate cancers mimicking benign lesions and other variant histologies of prostate cancer; recently described new entities; contemporary approaches to Gleason grading; application of immunohistochemical and emerging molecular markers in diagnosis and differential diagnosis of prostate cancer; and reporting of prostate biopsy. In addition, we discuss several other timely topics and issues, including prostate biopsy sampling techniques and its impact on pathologic diagnosis; molecular biology of prostate cancer; and specimen handling, processing, and quality assurance measures.

This book is structured in a way that engages its readers. Chapters are comprehensive yet concise, with numerous illustrations of real cases. Many algorithms, flow charts, and tables are used to illustrate the thought and decision-making process during sign-out of prostate biopsies. Dr. Levin, one of our reviewers, agrees: "I feel like I am on my microscope and signing out those difficult prostate biopsies when I am reading this book."

It is our hope that readers will not only use this book to look up a specific prostate lesion but also to learn the most effective way to evaluate a prostate biopsy and formulate a diagnostic approach upon encountering a specific clinical and pathological problem.

Irving, Texas, USA — Rajal B. Shah, M.D.
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Our thanks are also extended to Lee Klein for his stellar administrative assistance, and to Melissa Ramondetta, who saw the value of putting a practical prostate biopsy atlas on busy practicing pathologists' desks and initiated this project.

About the Authors

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Ming Zhou is an Associate Professor and Director of Surgical Pathology and Genitourinary Pathology, Tisch Hospital, New York University, New York, USA. He was previously at the Pathology and Laboratory Medicine Institute, Cleveland Clinic, Ohio. As an expert in genitourinary pathology, Dr. Zhou has authored more than 100 research articles and 12 book chapters, and he also co-edits a textbook, *Genitourinary Pathology*. He frequently lectures at national and international meetings on urological pathology, and currently serves on several editorial boards, including those for *Modern Pathology* and *Advances in Anatomic Pathology*.

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