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Book Review

Cytopathology of urine (and the Paris system): CMAS #4. Editor: Shikha Bose; Series Editor: Vinod Shidham

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The accurate evaluation of urinary cytology has been a cornerstone in the diagnosis and management of urothelial carcinoma for decades. However, the field has long struggled with subjectivity, inconsistency, and diagnostic challenges. In response to these issues, The Paris System (TPS) for Reporting Urinary Cytology was introduced in 2016[1] to bring structure, clarity, and evidence-based standards to the interpretation of urine cytology. This book serves as a guide to understanding and applying the Paris System, making it a valuable resource for both novice and experienced cytopathologists.

Since its inception, TPS has become a global standard, offering a reliable framework for interpreting cytological findings in relation to clinical outcomes. Its structured approach helps bridge the gap between pathologists and clinicians, fostering clearer communication and ultimately improving patient care. In short, TPS has revolutionized the field by providing standardized diagnostic criteria that promote greater consistency and accuracy in urinary cytology.

The Cytopathology of Urine (and The Paris System) book[2] is divided into nine well-referenced and richly illustrated chapters, each meticulously designed to enhance the reader's understanding of the TPS system and its practical application in daily practice. From novice learners to seasoned professionals, this book provides insights that are both accessible and comprehensive.

A dedicated chapter on specimen sampling and preparation underscores the foundational importance of ensuring specimen adequacy.[3] The authors discuss criteria for adequacy and, crucially, the reasons why specimens may be deemed inadequate. This chapter also offers extensive, well-illustrated descriptions of normal cellular components in urine specimens, emphasizing that familiarity with the "normal" is essential to recognize abnormalities.

Not everything that deviates from normal is malignant. The chapter on benign and non-neoplastic lesions presents excellent examples of non-malignant entities encountered in urine cytology. These serve as crucial diagnostic reference points.[4]

The chapter on low-grade urothelial neoplasia provides an in-depth discussion of the morphologic characteristics of these tumors.[5] It also offers a comprehensive overview of their imaging, cystoscopic findings, and treatment modalities. Of particular note, the chapter presents the histologic appearances and classification basis of these neoplasms, along with an eloquent discussion of their molecular background. The inclusion of these neoplasms in the "negative for high-grade urothelial carcinoma (HGUC)" category within TPS is thoroughly explained, helping the reader understand the limitations of cytology in this context.

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The chapter on HGUC is richly illustrated and features well-organized tables and algorithms that enhance the book's visual appeal.[6] This chapter includes numerous examples of less common HGUC subtypes, making it an invaluable guide for practicing pathologists who need to differentiate these rare cases.

Recognizing that not all malignant bladder neoplasms are urothelial carcinomas, the book includes a comprehensive chapter on non-urothelial malignancies.[7] Like the other chapters, it is well-illustrated and thoroughly referenced, offering pathologists a complete resource on bladder cancer pathology.

A chapter on the history of urine cytology and the evolution of the Paris System provides a succinct yet informative overview.[8] More importantly, it acknowledges that TPS is a work in progress, with future advancements in digital pathology likely to shape its evolution toward an automated, standardized reporting system.

One of the most distinctive features of this book is its chapter on diagnostic pitfalls.[9] Through a series of comprehensive, well-illustrated steps, the authors guide readers in avoiding common mistakes and arriving at the correct diagnosis. For cytologists who appreciate the beauty of cytomorphology, this chapter is a visual and intellectual treat.

The book also includes a thorough discussion of the role of biomarkers in urine cytology.[10] This chapter is well-referenced, covering practically all biomarkers introduced to date and summarizing their sensitivity and specificity in comparison to urine cytology.

Finally, an entire chapter is devoted to digital pathology and artificial intelligence, preparing readers for the future of the field.[11] This chapter offers an excellent discussion of the current status of digital pathology technologies, along with a detailed guide to available products, specific terminology, and current guidelines. These are presented in table format, making the chapter an invaluable tool for laboratories looking to start or expand their digitized pathology services.

In conclusion, this book is both a tribute to the advancements in urinary cytology and a comprehensive roadmap for its future. The Paris System for Reporting Urinary Cytology has already significantly improved diagnostic accuracy and communication in the field, and this text serves as a key resource for pathologists looking to refine their skills and stay abreast of future developments. Whether you are a seasoned professional or a newcomer to the field, this book provides a thorough, visually appealing, and informative guide to mastering the Paris System and enhancing patient outcomes through precise and reliable diagnostic practices.

With its careful attention to detail, extensive illustrations, and a forward-thinking approach to emerging technologies, this book stands as an essential resource for those committed to advancing the practice of urinary cytology.

AVAILABILITY OF DATA AND MATERIALS

Not applicable.

ABBREVIATIONS

Not applicable.

AUTHOR CONTRIBUTIONS

EW: Compiled and reviewed the manuscript.

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EDITORIAL/PEER REVIEW

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