

Thyroid Cytopathology

ESSENTIALS IN CYTOPATHOLOGY SERIES

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Second Edition



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Foreword

The evaluation of thyroid nodules by fine needle aspiration (FNA) is one of the most challenging tasks in all of cytopathology. A cytologist must understand the clinical presentation of thyroid diseases, their defining histopathologic and cytopathologic features, and even the intricacies of patient management. Drs. Clark and Faquin have provided a valuable framework for cytologists learning (and continuing to learn) this exacting discipline. Organized around a practical algorithm, the authors lay out a rational and concise approach toward acquiring the necessary skills for the cytologic diagnosis of thyroid nodules. The first edition, published in 2005, was a very welcome addition to the cytology literature. This new edition, with updated terminology for reporting thyroid FNA results, builds on the success of their approach.

Why are we examining such challenging specimens? Clearly, the clinical need is there. Over 50% of adults have one or more thyroid nodules. Surgical excision of all nodules is certainly neither practical nor desirable. Enter FNA, a minimally invasive cellular sampling method that has proven to be a highly useful screening test for thyroid cancer. Because of it, thousands of patients with a benign diagnosis are spared unnecessary surgery every year, and those with cancer are reliably triaged for appropriate therapy.

The large number of FNAs performed in the US is a tribute to its success as a screening test. In many institutions, the thyroid FNA is the most common FNA specimen. For a relatively new diagnostic test, this is a remarkable state of affairs. Thirty years ago, few thyroid cancers were diagnosed by FNA in the US, and in the 1980s some prominent pathologists still questioned the value

of FNA for thyroid nodules. There is no more debate: FNA has proven its value. In 2009, an estimated 37,200 thyroid cancers will be diagnosed in the United States, and virtually all of them will have been diagnosed directly or triaged for a diagnostic lobectomy by FNA. If approximately nine FNAs are performed for every thyroid cancer that is discovered, then roughly 335,000 thyroid FNAs will have been performed in the US in 2009.

Cytologists must be armed and ready to evaluate these clinically vital specimens. This book, with its practical algorithm, cogent text, and beautiful illustrations, provides the ammunition a cytologist needs to master thyroid FNA interpretation.

Edmund S. Cibas

Series Preface

The subspeciality of cytopathology is 60 years old and has become established as a solid and reliable discipline in medicine. As expected, cytopathology literature has expanded in a remarkably short period of time, from a few textbooks prior to the 1980s to a current and substantial library of texts and journals devoted exclusively to cytomorphology. *Essentials in Cytopathology* does not presume to replace any of the distinguished textbooks in cytopathology. Instead, the series will publish generously illustrated and user-friendly guides for both pathologists and clinicians.

Building on the amazing success of *The Bethesda System for Reporting Cervical Cytology*, now in its second edition, the *Series* will utilize a similar format, including minimal text, tabular criteria, and superb illustrations based on real-life specimens. *Essentials in Cytopathology* will, at times, deviate from the classic organization of pathology texts. The logic of decision trees, elimination of unlikely choices, and narrowing of differential diagnosis via a pragmatic approach based on morphologic criteria will be some of the strategies used to illustrate principles and practice in cytopathology.

Most of the authors for *Essentials in Cytopathology* are faculty members in The Johns Hopkins University School of Medicine, Department of Pathology, Division of Cytopathology. They bring to each volume the legacy of John K. Frost and the collective experience of a preeminent cytopathology service. The archives at Hopkins are meticulously cataloged and form the framework for text and illustrations. Authors from other institutions have been selected on the basis of their national reputations, experience, and

enthusiasm for cytopathology. They bring to the series complementary viewpoints and enlarge the scope of materials contained in the photographs.

The editor and authors are indebted to our students, past and future, who challenge and motivate us to become the best that we possibly can be. We share that experience with you through these pages, and hope that you will learn from them as we have from those who have come before us. We would be remiss if we did not pay tribute to our professional colleagues, the cytotechnologists, and preparatory technicians who lovingly care for the specimens that our clinical colleagues send to us.

And finally, we cannot emphasize enough throughout these volumes the importance of collaboration with the patient care team. Every specimen comes to us as a question begging an answer. Without input from the clinicians, complete patient history, results of imaging studies, and other ancillary tests, we cannot perform optimally. It is our responsibility to educate our clinicians about their role in our interpretation, and for us to integrate as much information as we can gather into our final diagnosis, even if the answer at first seems obvious.

We hope you will find this series useful and welcome your feedback as you place these handbooks by your microscopes, and into your book bags.

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Douglas P. Clark
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