

## Preface

# Endocrine Pathology: Practical Suggestions, Emerging Diagnostics, and New Frontiers



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*Editor*

This issue on Endocrine Pathology in *Surgical Pathology Clinics* tackles common and challenging problems in thyroid and parathyroid pathology, emerging clinically relevant molecular findings in endocrine neoplasms and syndromes, and new horizons in diagnosis and treatment of endocrine tumors.

Starting with (my favorite organ) the thyroid gland, the article, “A Triumvirate: Correlating Thyroid Cytopathology, Molecular Testing, and Histopathology,” emphasizes the importance of correlating thyroid cytopathology to preoperative molecular testing to final diagnosis, specifically regarding how to interpret molecular tests for clinical decision making and how they can inform histopathologic diagnosis. The article, “To Freeze or not to Freeze? Recommendations for Intraoperative Examination and Gross Prosection of Thyroid Glands,” suggests standard practices for gross handling of thyroid glands, whether sent for intraoperative diagnosis (which should be discouraged) or permanent evaluation, and it provides recommendations for clinically relevant inking, sectioning, and cassette submission. The article, “Challenges in Encapsulated Follicular-Patterned Tumors: How Much is Enough? Evaluation of Nuclear Atypia, Architecture, and Invasion,” discusses the age-old (and often frustrating) question of the minimum threshold for a cancer diagnosis (whether it lies in the nuclei, the

architecture, the capsule, the vessels...), identifies common pitfalls, and provides practical recommendations for pathologists. The article, “No Longer Well-Differentiated: Diagnostic Criteria and Clinical Importance of Poorly Differentiated/High-Grade Thyroid Carcinoma,” addresses the new WHO category of high-grade follicular-derived thyroid carcinomas, comparing the diagnostic criteria for differentiated high-grade and poorly differentiated thyroid carcinomas and the clinical implications thereof. The article, “This Is Your Thyroid on Drugs: Targetable Mutations and Fusions in Thyroid Carcinoma,” transitions to emerging molecular diagnostics in thyroid carcinomas, specifically addressing actionable mutations and how pathologists can play a critical role in the interdisciplinary care team by facilitating targeted therapy for patients. The article, “It Does Exist! Diagnosis and Management of Thyroid Carcinomas Arising in Struma Ovarii,” faces a question that endocrine pathologists may find themselves asked by gynecologic pathology colleagues—can we capture the elusive beast of thyroid carcinoma arising in struma ovarii? The articles, “Preoperative, Intraoperative and Postoperative Parathyroid Pathology: Clinical Pathologic Collaboration for Optimal Patient Management” and “Para this, Fibromin that: The Role of CDC73 in Parathyroid Tumors and Familial Tumor Syndromes,” move to the small but mighty parathyroid

gland: how to frame an overall diagnostic approach to parathyroid disease during intraoperative evaluation compared with permanent evaluation, and how to conceptualize *CDC73*-mutated parathyroid neoplasms, which may point to a clinical syndrome. The articles, “On the Chopping Block: Overview of *DICER1* Mutations in Endocrine and Neuroendocrine Neoplasms” and “Back to Biochemistry: Evaluation for and Prognostic Significance of *SDH* Mutations in Paragangliomas and Pheochromocytomas,” are also devoted to the molecular basis of disease in the rare but clinically important *DICER1* and succinate dehydrogenase (*SDH*)-related endocrine/neuroendocrine syndromes. The article, “All Together Now: Standardization of Nomenclature for Neuroendocrine Neoplasms Across Multiple Organs,” addresses the protean classification of neuroendocrine tumors (carcinoid? NET? NEN? NEC?) and the push to standardize nomenclature across organ systems, which would facilitate communication and standard of patient care. The last three articles, courtesy of our colleagues in endocrine surgery and internal medicine, aim to facilitate pathologists’ understanding of cutting-edge clinical issues: the use of DOTATATE radiotracer for diagnosis and therapy (“Light It Up! The Use of

DOTATATE in Diagnosis and Treatment of Neuroendocrine Neoplasms”); transoral surgery for endocrine lesions of the neck (“Scarless Surgery: Clinical Indications for Transoral Endocrine Surgery and Implications for Pathologists”); and how deep learning could be applied to the management of patients with endocrine tumors (“Applications of Deep Learning in Endocrine Neoplasms”). The overall aims of this collection of fourteen articles are to address challenges that pathologists encounter in daily practice as well as to introduce innovations in the interdisciplinary practice of medicine related to endocrine tumors.

I would like to thank Dr Hornick for the invitation to serve as guest editor as well as the article authors for their hard work and interesting contributions to this collection! I hope you find it interesting and educational.

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