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Editorial

Sub-specialty Updates on Diagnostic Anatomical and Clinical Pathology

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This special section of eight articles focused on the updates and diagnostic challenges in surgical pathology, cytopathology and clinical pathology. These are largely based on the proceedings of the seventh Chinese American Pathologists Association (CAPA) Diagnostic Pathology Course, which virtually took place in 11–12 September 2021. This course covered 17 subspecialties of pathology, attracting a record number of faculties and attendees.

The first part of the special section included four articles, which concerns clinical pathology, gynecological pathology, cytopathology and gastrointestinal pathology. This is first time clinical pathology was included in the CAPA diagnostic course. Routine coagulation tests or screening tests include prothrombin time with international normalized ratio, activated partial thromboplastin time, fibrinogen, and thrombin time. When the results are abnormal, a mixing study is often the initial reflexive test that can provide valuable information to conclude the assessment, or help guide the further investigation. If the mixing "corrects" the test results, a factor deficiency would be suspected. Otherwise, the presence of an inhibitor would be more likely. Drs. Michael Losos and Jian Chen conducted a review of various methods to determine whether a mixing test result was corrected.[1]

The high mobility group A2 (HMGA2) gene is an oncofetal protein that is upregulated in certain mesenchymal neoplasms due to chromosomal translocations, and in malignant epithelial tumors through transcription regulation. Furthermore, HMGA2 overexpression drives tumor development and/or promotes tumor aggressiveness. In the review article, Dr. Jian-Jun Wei summarized the recent developments on the study of HMGA2, including its expression as a potential biomarker for gynecologic neoplasms, especially in uterine smooth muscle tumors and ovarian cancer.[2]

Morphologic variants of pancreatic well-differentiated neuroendocrine tumors (PanNETs) are uncommon. However, these may mimic non-PanNET tumors. Furthermore, when under recognized, these can lead to misdiagnosis in fine-needle aspiration biopsy. Moreover, in the report, Drs. Dan Lu, Huihong Xu and Guoping Cai described the unique cytomorphologic features and diagnostic clues of pigmented, pleomorphic, clear cell and oncocytic variants of well-differentiated PanNETs. The differential diagnoses of each morphologic variant and the hints to prevent diagnostic pitfalls are also discussed.[3]

High grade well-differentiated neuroendocrine tumor (WDNET) is a newly defined entity that is high grade by mitotic activity or proliferative index, and exhibits a well-differentiated histomorphology. In the review, Dr. Zhaohai Yang described the clinical (age and frequent locations) and morphological features of high-grade WDNET of gastrointestinal tract. The overall survival for high-grade WDNET was significantly better, when compared to poorly differentiated NET, making the distinction of these two entities extremely important in routine pathological practice.[4]

The second part of the special section included four articles, among which two articles focused on breast, head and neck pathology. Although triple negative breast cancer is defined by the lack of expression of estrogen, progesterone and HER2 receptors, this class of tumor varies significantly, molecularly, morphologically and clinically. In the review, Dr. Zaibo Li and his colleagues discussed a group of low-grade triple negative breast cancers (acinic cell carcinoma, adenoid cystic carcinoma, and secretory carcinoma), including its evolution and therapeutic management.

Oropharyngeal squamous cell carcinomas (OPSCCs) have exhibited an alarming rate of increase in incidence over the past several decades, markedly in males. Transcriptionally-active human papillomavirus (HPV), particularly HPV type 16, has become the most common causal agent of OPSCCs in the United States. Patients with HPV-positive OPSCCs have demonstrated an improved treatment response to chemoradiotherapy and better long-term survival, when compared to patients with non-HPV-associated OPSCCs. However, a number of OPSCCs were discovered at the advanced stage, and approximately 20% of these recurred after definitive treatment. In the review, Dr. He Wang and his colleagues described the most updated research in HPV-positive OPSCCs, with emphasis on their relevance as potential new targets for precision medicine and survival prognosis.

It is hoped that the readers would find this special section informative and relevant to their daily practice. The contributors have worked hard and dedicated themselves to pathological education.

Abbreviations: CAPA, Chinese American Pathologists Association; HMGA2, high mobility group A2; HPV, human papillomavirus; OPSCCs, oropharyngeal squamous cell carcinomas; PanNETs, pancreatic well-differentiated neuroendocrine tumors; WDNET, well-differentiated neuroendocrine tumor.

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Biosketches

Linsheng Zhang, MD, PhD

Dr. Linsheng Zhang is an Associate Professor in the Department of Pathology and Laboratory Medicine at Emory University School of Medicine, and a member of the Emory Winship Cancer Institute. Dr. Zhang completed his Anatomic and Clinical Pathology (AP/CP) residency training at the Medical University of South Carolina, followed by fellowship trainings in hematopathology and molecular genetic pathology at Emory University. He provides clinical services in diagnostic hematopathology, integrating morphologic examination, flow cytometric immunophenotyping, cytogenetics, fluorescence *in situ* hybridization, and microarray studies, and the molecular diagnostics of hematologic neoplasms, and solid and soft tissue tumors. His present research focuses on the molecular profiling of malignant neoplasms to facilitate genetics-based precision oncology. He has published 24 original research manuscripts, four review articles, and five book chapters on molecular genetic studies, and edited a book on molecular pathology. Dr. Zhang is also an excellent educator. He is presently the Director of the Molecular Genetic Pathology Fellowship program, a member of the American Society for Clinical Pathology Checkpath Hematopathology Committee, and a College of American Pathologists (CAP) Hematology and Clinical Microscopy Committee. He was one of the founders of the Online Education Program provided by the CAPA, and has been organizing online webinars since the inception of the virtual educational platform.

He Wang, MD, PhD

Dr. He Wang is an Associate Professor of Pathology at Yale University School of Medicine, and the Director of Anatomic Pathology and Cytopathology at Yale New Haven Hospital St. Raphael Campus. His mission is to deliver the best possible patient care by combining his expertise in cytopathology, cardiovascular pathology, head and neck pathology, biomarker testing, and digital pathology. As an academic pathologist, he has published over 100 peer-reviewed articles, and is well-recognized in the field of salivary gland pathology and cardiovascular pathology. He is an experienced speaker at regional, national and international pathology meetings/conferences. He serves as an editorial board/ad hoc reviewer for many peer-reviewed journals. His translational research lab is funded by the National Institutes of Health, universities and industries, with present focus on the epigenetic markers of cardiovascular diseases induced by smoking and salivary tumors. Dr. Wang has been appointed various pathology leadership positions at Temple University and Rutgers University before he joined Yale University. He is the Governor of the Society of Cardiovascular Pathology.

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Conflict of interest

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Author contributions

All authors have made a significant contribution to this manuscript, and have approved the final version.

References

[1] Losos M, Chen J. Utility and Interpretation of Coagulation Mixing Studies. J Clin Transl Pathol 2022;2(1):8–11. doi:10.14218/JCTP.2022.00002.
[2] Wei JJ. HMGA2: A Biomarker in Gynecologic Neoplasia. J Clin Transl Pathol 2022;2(1):3–7. doi:10.14218/JCTP.2021.00018.
[3] Lu D, Xu H, Cai G. Morphologic Variants of Well-Differentiated Pancreatic Neuroendocrine Tumors: Fine-Needle Aspiration Cytomorphology and Diagnostic Pitfalls. J Clin Transl Pathol 2022;2(1):12–17. doi:10.14218/JCTP.2022.00005.
[4] Yang Z. Differential Diagnosis of High-grade Neuroendocrine Neoplasms in the Digestive System. J Clin Transl Pathol 2022;2(1):18–22. doi:10.14218/JCTP.2022.00008.