

Differential Diagnosis in Cytopathology

Third Edition





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To my mom and dad for their selfless devotion to their children's success, to my sister for her lifelong camaraderie, to my husband for his sincerity and generosity, to Elijah as my endless source of joy *Ji-Weon Park*

To my wife Nancy and my children Vincent and Francesca *Paolo Gattuso*

To my mother Susheela Gantla and my daughter Swathi, for their unwavering love and support. *Vijaya B. Reddy*

To the memory of my parents and to my family, Drs. Ahmad, Ali and Sina and my grandchildren Alik, Alden, Clark and Jaleh Kasraeian Shahla Masood





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Preface

Advances in science and technology in recent years have revolutionized our approach to the diagnosis and management of various disease entities. Similarly, there has been significant change in the fundamental concept of delivery of healthcare. Emphases now are directed to find the most efficient ways to deliver personalized medicine and to improve the quality of patient care. Integrated care has resulted in better treatment planning and improved patient satisfaction, and minimally invasive diagnostic and therapeutic models have replaced excisional biopsies and open surgical procedures.

Pathologists have played a central role in the realization of delivery of personalized patient care. Their efforts in the development, validation, and implementation of various technologies have been central in providing appropriate diagnostic, prognostic, and predictive information. The discipline of cytopathology has also played a critical role in responding to the changing trends in healthcare. Aside from learning more about morphologic features and diagnostic pitfalls, cytopathologists have been actively engaged in using advanced technologies on cytologic preparations in an effort to maximize the efficiency of the practice of cytopathology. Currently, cytologic preparations are used routinely in ancillary studies in order to offer the most accurate information about the nature and biology of a disease process.

Practice of cytopathology is exciting and yet challenging. A good cytopathologist must be a good surgical pathologist. In many ways, cytopathology practice is similar to looking through the keyhole and being able to see the entire room. It takes imagination, knowledge, and courage to do so. We believe that *Differential Diagnosis in Cytopathology* will offer the knowledge and the vision necessary for the practice of cytopathology.

Differential Diagnosis in Cytopathology is designed to offer a systematic, concise, and organized approach to addressing differential diagnosis in cytopathology, and the application of possible ancillary studies to help reach the correct diagnosis. Differential Diagnosis in Cytopathology distinguishes its unique character by remarkable simplicity in the language used and the quality of the images.

Each chapter has a uniform format. Every entity discussed features several sections: clinical findings, cytologic features, special stains, immunohistochemistry, modern techniques for diagnosis, differential diagnosis, and take-home messages as "pearls."

The book is designed to fulfill the needs of pathology residents, cytopathology fellows, cytotechnologists, and the academic/pathology community, in cytologic diagnosis of the female genital tract, exfoliative pulmonary cytology, body cavity fluids (peritoneal, pleural), cerebrospinal fluid, and intraocular cytology, gastrointestinal tract, urine cytology, cytopathology of the breast, fine-needle aspiration of tumors of unknown origin, soft tissue and bone, thyroid gland, kidney and adrenal gland, head and neck, salivary glands, liver, pancreas, prostate, lymph nodes, gonads, and cytopathology of the central nervous system.

This multi-authored publication is representative of the fine work of many key opinion leaders in the discipline of cytopathology who have spent a great deal of time in the preparation of each chapter. We greatly appreciate their contribution and their sincere effort in this process.

Ji-Weon Park Paolo Gattuso Vijaya B. Reddy Shahla Masood