

## “Clinical” cytology for endoscopists: A practical guide

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### ABSTRACT

Clinical cytology was originally used by clinicians to provide rapid diagnosis. However, with advancing medical subspecialization, few clinicians interpret cytology themselves these days, for example, gynecologists, hematologists, urologists, and occasional gastroenterologist (mainly in Asian countries). Cytological assessment enjoyed a renaissance with the development of endoscopic ultrasound (EUS)-guided fine-needle aspiration (FNA). Subsequently, pathologists, most of them more experienced in histology, had to take over. Recently, it has been shown that in-room cytology can be easily performed by the endoscopist themselves for initial evaluation of the quality of the EUS-FNA specimen and an initial diagnosis distinguishing benign or malignant cells. Bringing cytology back to the clinician has some advantages but does not substitute the professional cytopathologist. This report has written to lower the threshold for the clinician to find his way back to the microscope, which may improve both their diagnostic yield and assessment of EUS-FNA sample quality.

**Key words:** Endoscopy, guidelines, histology, intervention, oncology

### INTRODUCTION

With the introduction of endoscopic ultrasound (EUS) fine-needle aspiration (FNA) tissue, acquisition from previously inaccessible areas in the body became routinely possible.<sup>[1]</sup> According to a German survey, EUS-FNA is mainly used to obtain specimens from enlarged mediastinal and abdominal lymph nodes and from the pancreas.<sup>[2]</sup> Furthermore, endoscopists can now take specimens from all areas in proximity of the upper gastrointestinal tract, including liver lesions, left adrenal gland, and spleen.<sup>[3]</sup> The EUS-FNA technique has increased the diagnostic potential of EUS enormously, decreasing the number of surgical

interventions for diagnostic sampling. With increasing availability of this new sampling method, endoscopists had to train their skills in the preparation of specimens and pathologists had to deal with FNA samples of formerly rarely targeted areas using only cytological preparation and staining methods. Endoscopists as well as pathologists strive to improve the diagnostic processes in obtaining very small samples to increase accuracy for clinical decision-making.<sup>[4-6]</sup> Some studies demonstrate that the presence of a cytopathologist in the endoscopy suite might further improve the results.<sup>[7]</sup> Rapid on-site evaluation (ROSE) evolved

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# Practical Clinical Cytology

**Jill C. Cash**



## **Practical Clinical Cytology:**

**Practical Clinical Cytology** Virginia A. Livolsi, 1980      *Practical Cytopathology* Huihong Xu, Xiaohua Qian, He Wang, 2019-10-31 This book provides a comprehensive practical and state of the art review addressing the major issues and challenges in cytopathology practice using a question and answer format Making an accurate diagnosis especially on a limited cytology sample obtained by minimally invasive procedures is often challenging yet crucial to patient care Using the most current and evidence based approaches this book 1 focuses on frequently asked questions in day to day practice of cytopathology as well as surgical pathology 2 provides quick accurate and useful answers 3 emphasizes the importance of clinical radiological and cytological correlation as well as cyto histological correlation and 4 delineates how to judiciously use immunohistochemistry molecular tests flow cytometry cytogenetics and other established ancillary studies including next generation sequencing and computer assisted diagnostics Chapters are written by experts in their fields and provide the most up to date information in the field of cytopathology *Practical Cytopathology Frequently Asked Questions* serves as a practical resource and guide to relevant references for trainees cytotechnologists and cytopathologists at various skill levels

**Practical Urologic Cytopathology** Ricardo H. Bardales, 2002-01-30 *Practical Urologic Cytopathology* provides the essentials for the cytologic diagnosis of disorders of the urinary tract illustrated with approximately 300 color photomicrographs The text combines the recent with the classic and standard concepts particularly in the classification of urothelial tumors Urothelial tumors are covered contrasting the 1973 and 1999 WHO classification and the 1998 WHO ISUP World Health Organization International Society of Urological Pathologists The author provides a summary of key concepts of each described entity that enhances the practical nature of this book The book also summarizes the recent developments in the molecular biology and markers for the diagnosis of urothelial tumors and includes chapters on the fine needle aspiration cytopathology of urinary tract masses and on the diagnostic value of urine cytology interpretation This book is intended for practicing pathologists pathologists in training and cytotechnology students as well as researchers and those with special interest in the cytopathology of the urinary tract      *Practical Informatics for Cytopathology* Liron Pantanowitz, Anil V. Parwani, 2014-01-22 *Practical Informatics for Cytopathology* provides a concise and practical overview of pathology informatics The book offers a succinct overview of basic computing and laboratory information systems applied specifically to the field of cytopathology Readers are exposed to emerging areas in pathology informatics such as specimen tracking and digital imaging Valuable features of this volume include summary tables diagrams vital resources and a glossary of informatics terms to help readers Written by authorizes in the field *Practical Informatics for Cytopathology* is a vital resource that provides users with a solid comprehensive foundation and practical working knowledge of the rapidly emerging field of pathology informatics      *Practical Diagnostic Approaches in Non-Gynaecologic Cytology* Min En Nga, 2020-07-31 This book presents rational diagnostic approaches to common areas of cytopathology such as thyroid lymph node and effusion cytology

It discusses differential diagnoses for each site and describes a systematic approach to narrow down differential diagnoses in a logical manner based on cytomorphology and the judicious application of ancillary tests. Further, it introduces discriminatory panels of immunohistochemical tests with an emphasis on patient-centred approaches with active clinicopathologic correlations. In addition, it provides practical recommendations for optimizing tissue triage for ancillary testing in terms of both diagnostic and therapy-related testing. The book also includes sample diagnostic reports to help readers formulate appropriate comments and to aid clinicians in specific clinical scenarios as well as test cases for readers to apply their diagnostic and specimen triage algorithms. The book equips readers to apply logical approaches to sound cytopathology reporting in daily clinical practice, guiding them through specimen collection and triage to diagnostic workup based on morphologic and clinical features and writing rational and clinically useful diagnostic cytology reports with a focus on clinicopathologic correlation. As such, it is relevant for practising cytopathologists and pathology trainees as well as for cytologists, cytotechnologists, and other clinicians involved in cytopathology diagnostic processes. **Practical**

**Cytopathology: A Diagnostic Approach E-Book** Andrew S. Field, Matthew A. Zarka, 2016-05-18 Employing a systematic pattern recognition approach, *Practical Cytopathology: A Diagnostic Approach* equips you to achieve a more accurate diagnosis of aspirated and exfoliative tissue samples from all available body organs and sites. Part of the popular Pattern Recognition Series, this volume is designed to successfully guide you from identification of the dominant cytopathologic pattern through the appropriate workup around the pitfalls to the best diagnosis. A practical pattern-based organization helps you to efficiently and confidently formulate accurate diagnoses at the microscope. A unique Visual Index at the beginning of the book allows you to compare specimens to commonly seen patterns, categorize them accordingly, and turn directly to in-depth diagnostic guidance. Lavishly illustrated with more than 1200 high-quality full-color images that depict the full range of common and rare conditions, it is ideal for both general surgical pathologists and cytopathologists. No other single source delivers such highly practical, hands-on information needed to solve even the toughest diagnostic challenges in aspiration and exfoliative cytology. Expert Consult eBook version included with purchase. This enhanced eBook experience allows you to search all of the text, figures, images, and references from the book on a variety of devices. **Molecular**

**Diagnostics in Cytopathology** Sinchita Roy-Chowdhuri, Paul A. VanderLaan, John M. Stewart, Gilda da Cunha Santos, 2018-11-21 Molecular diagnostics are increasingly used to help guide targeted therapy in solid organ tumors and hematologic malignancies. A large proportion of molecular testing is performed on limited volume samples obtained via minimally invasive techniques such as fine needle aspiration. Increasingly, cytopathologists play an essential role in this process, both in the triage of specimens during rapid on-site evaluation and in the evaluation of archival samples to determine suitability for ancillary testing. Therefore, it is imperative that practicing cytopathologists stay abreast of up-to-date diagnostic, prognostic, and predictive ancillary tests that can be used on limited cytologic material. This is a challenge since the

landscape of known genomic alterations is constantly evolving and the subsequent set of testing options is ever expanding. The proposed text will provide a user friendly quick reference handbook to serve as a useful resource for practicing pathologists and laboratory personnel dealing with and interested in this evolving field of molecular cytopathology. Essential components to be presented include 1 pre analytic factors that affect sample selection and evaluation 2 specimen preparation to maximize confidence in results 3 interpretation of results 4 potential limitations and 5 workflow algorithms. In addition specific disease specific molecular testing details will be outlined to provide the reader with resources for quick reference. All chapters will be written by experts in their fields and will include the most up to date scientific and clinical information. Molecular Diagnostics in Cytopathology will be of value to Cytopathologists Cytotechnologists Cytotechnology students Cytopathology fellows Surgical pathologists Pathology residents and fellows Molecular Pathologists Molecular pathology fellows Molecular technologists as well as Translational researchers with an interest in molecular cytopathology.

**Molecular Histopathology and Cytopathology** Adem Kara, Volkan Gelen, Hülya Kara, 2023-06-14 Various histopathological and cytopathological processes such as inflammation cell injury tissue regeneration hemodynamic disorders and neoplasia constitute important processes in the formation mechanism of many diseases. Molecular mechanisms are involved in the emergence of these basic pathological processes. Learning the organization from molecule to tissue guides investigating the mechanisms of many diseases. This book describes and discusses these pathological processes and their association with molecular mechanisms of the formation of various diseases.

**Practical Manual of Thyroid and Parathyroid Disease** Asit Arora, Neil Tolley, R. Michael Tuttle, 2009-12-01 Edited and authored by international experts. A Practical Manual of Thyroid and Parathyroid Disease presents concise evidence based multi disciplinary guidance relevant for a global audience. Where appropriate chapters include an evidence appraisal section which critically assesses the level of the evidence available for different treatment options. Reflecting the latest in clinical research and showcasing techniques pioneered by the contributors the book includes chapters dedicated to advances in cytology radiological assessment molecular biology and treatment rationale in thyroid cancer surgical technique including minimally invasive modalities. Designed to be user friendly the book contains key points case studies color photographs and diagrams throughout. Multiple choice questions included at the end of each chapter enable self assessment. The book will be relevant to the medical undergraduate postgraduate and clinical nurse specialist. Primary care physicians will find this an excellent resource for reference purposes and it will update specialists involved with treating thyroid and parathyroid disease in the fields of Pathology Radiology Oncology Endocrinology and Surgery.

**Current Catalog** National Library of Medicine (U.S.), 1980 First multi year cumulation covers six years 1965-70.

**Cytopathology, An Issue of Surgical Pathology Clinics** Vickie Jo, 2018-09-07 This issue of Surgical Pathology Clinics edited by Dr Vickie Jo focused on Cytopathology. Topics include but are not limited to Head and Neck Cytology HPV Associated Carcinomas Updates in Thyroid Cytology Salivary Gland Cytopathology Pulmonary Cytopathology

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An Issue of Veterinary Clinics of North America: Small Animal Practice Amy L. MacNeill,2016-11-21 Dr Amy MacNeil has  
 assembled an expert team on Small Animal Cytology Topics include Preparation of Cytology Samples Tricks of the Trade  
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 Key Considerations for Synovial Fluid Analysis Fluid Analysis and more     Immunologic Approaches to the Classification and  
 Management of Lymphomas and Leukemias John M. Bennett,Kenneth A. Foon,2012-12-06 Where do you begin to look for a  
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**Saunders Manual of Small Animal Practice - E-Book** Stephen J. Birchard,Robert G. Sherding,2005-12-20

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Shapiro, 2005-02-25 From the reviews of the 3rd Edition The standard reference for anyone interested in understanding flow cytometry technology American Journal of Clinical Oncology one of the most valuable of its genre and addressed to a wide audience written in such an attractive way being both informative and stimulating Trends in Cell Biology This reference explains the science and discusses the vast biomedical applications of quantitative analytical cytology using laser activated detection and cell sorting Now in its fourth edition this text has been expanded to provide full coverage of the broad spectrum of applications in molecular biology and biotechnology today New to this edition are chapters on automated analysis of array technologies compensation high speed sorting reporter molecules and multiplex and apoptosis assays along with fully updated and revised references and a list of suppliers

**Family Practice Guidelines** Jill C. Cash, 2023-01-30 Praise for earlier editions This is a wonderful book for both novice and experienced physician assistants and nurse practitioners This latest edition will see frequent use in your daily practice Score 100 5 stars Doody's Medical Reviews This textbook provides comprehensive coverage of primary care disorders in an easy to read format and contains invaluable step by step instructions for evaluating and managing primary care patients It belongs in every NP and PA's reference library I highly recommend this wonderful textbook Maria T Leik MSN FNP BC ANP BC GNP BC President National ARNP Services Inc This core nursing resource has long served as an essential text for thousands of NP students and as a valued clinical reference for family practice and primary care clinicians The sixth edition continues to provide current practice guidelines and professional standards of care across the life span with the addition of updated information in all chapters updated patient teaching guides and charts and new charts featuring enhanced readability The book provides new content on COVID 19 treatment and vaccines and new guidelines for dermatology including photos respiratory disease cardiovascular disease genitourinary considerations neurologic conditions and infectious diseases Offering succinct and practical counsel the book features detailed step by step instructions for physical examinations and diagnostic testing information on health promotion guidelines of care dietary information common procedures and patient resources Chapters are organized by body system with disorders alphabetized for ease of reference Client Teaching Guides available in print and digital format perform double duty as both patient handouts and concise study tools Consistent guidelines for more than 275 disorders facilitate ease of use and Clinical Pearls highlight key information In addition website links are incorporated throughout for easy access to additional information New to the Sixth Edition Updated information in all chapters including new clinical content for each body system New tables charts and algorithms Updated CDC guidelines on health maintenance and immunization schedules New dermatology guidelines including color photos of skin rashes disorders Updated guidelines for heart failure and hypertension Focused guidelines for the management of asthma Updated management of urinary tract infections erectile dysfunction and premature ejaculation Key updates for stroke management Current CDC guidelines for management of COVID 19 Key Features Presents consistent guidelines for over 275 disorders providing quick access to information



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