Understanding digital pathology applications in clinical practice, education and research

This special topic issue covers the essential elements of digital pathology. The basic components of a whole slide imaging system (WSI) are reviewed, and interoperability and standards recommendations are offered, including a thorough revision of the international guidelines on digital pathology. Further, the publication provides a study on conventional microscopy versus WSI in pre-graduate and post-graduate medical training. It includes a study on synoptic pathology reports, evidence supporting the use of WSI for primary diagnosis in the different pathology subspecialties, second opinion telepathology, and practical recommendations for large volume storage. New technologies that lead to future 3D representation of tissue histology are examined. Finally, this issue discusses integrative digital pathology, microsemiology, comprehensive immunohistochemistry, and computational pathology concepts.

Digital Pathology is primarily aimed at pathologists, residents, technicians, biologists, and IT scientists. It provides answers to current challenges and some innovative proposals for the future.

Contents

Editorial
• Trying to Understand Digital Pathology before We Move to Computational Pathology: García-Rojo, M.; Ordi, J.

Original Papers
• Functional Assessment of Synoptic Pathology Reporting for Ovarian Cancer: Slodkowska, J.; Cierniak, S.; Patera, J.; Koplik, J.; Baranowski, W.; Markiewicz, T.; Murawski, P.; Buda, I.; Kozłowski, W.
• Current Status of Whole-Slide Imaging in Education: Saco, A.; Bombi, J.A.; Garcia, A.; Ramírez, J.; Ordi, J.
• Validation of Whole-Slide Imaging for Histopathological Diagnosis: Current State: Saco, A.; Ramírez, J.; Rakislova, N.; Mira, A.; Ordi, J.
• International Clinical Guidelines for the Adoption of Digital Pathology: A Review of Technical Aspects: García-Rojo, M.
• Network Consumption and Storage Needs when Working in a Full-Time Routine Digital Environment in a Large Nonacademic Training Hospital: Nap, M.

Review
• International Telepathology: Promises and Pitfalls: Farahani, N.; Riben, M.; Evans, A.J.; Pantanowitz, L.

Original Papers
• The Role of Micro-CT in 3D Histology Imaging: Senter-Zapata, M.; Patel, K.; Bautista, P.A.; Griffin, M.; Michaelson, J.; Yagi, Y.
• Semantic Integrative Digital Pathology: Insights into Microsemiological Semantics and Image Analysis Scalability: Racoeanu, D.; Capron, F.
• Comprehensive Immunohistochemistry: Digital, Analytical and Integrated: Laurinavicius, A.; Plancoulaine, B.; Herlin, P; Laurinaviciene, A.
The journal is also the official periodical of the following National and Regional Societies.

<table>
<thead>
<tr>
<th>National and Regional Societies</th>
<th>National and Regional Editors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albanian Society of Cytology</td>
<td>Majlinda Buba Ikonomi</td>
</tr>
<tr>
<td>Sociedad Argentina de Citologia</td>
<td>Mercedes Gamboni</td>
</tr>
<tr>
<td>Australian Society of Cytology</td>
<td>Andrew S. Field</td>
</tr>
<tr>
<td>Société Belge de Cytologie Clinique/Belgische Vereniging voor Klinische Cytologie</td>
<td>Claire Bourgain</td>
</tr>
<tr>
<td>Sociedade Brasileira de Citopatologia</td>
<td>Álvaro Piazzeta Pinto</td>
</tr>
<tr>
<td>British Society for Cytopathology</td>
<td>Karin Denton</td>
</tr>
<tr>
<td>The Canadian Society of Cytology/Société Canadienne de Cytologie</td>
<td>Harmanjatinder S. Sekhon</td>
</tr>
<tr>
<td>Česká společnost pro klinickou cytologii</td>
<td>Jaroslava Dušková</td>
</tr>
<tr>
<td>Sociedad Chilena de Citologia</td>
<td>Miguel Socías</td>
</tr>
<tr>
<td>Chinese Society of Cytopathology</td>
<td>Dongge Liu</td>
</tr>
<tr>
<td>Associacion Colombiana de Citologia</td>
<td>Lilia M. Osorio Mejia de Gomez</td>
</tr>
<tr>
<td>Croatian Society for Clinical Cytology</td>
<td>Vesna Mahovlić</td>
</tr>
<tr>
<td>Danish Society of Pathologic Anatomy and Clinical Cytology</td>
<td>Doris Schledermann</td>
</tr>
<tr>
<td>Deutsche Gesellschaft für Zytologie</td>
<td>Dietmar Schmidt</td>
</tr>
<tr>
<td>Dutch Society of Pathology</td>
<td>Elle K.J. Risse</td>
</tr>
<tr>
<td>European Federation of Cytological Societies.</td>
<td>Martin Tötsch</td>
</tr>
<tr>
<td>Sociedad Española de Citología</td>
<td>Mercedes Santamaria Martínez</td>
</tr>
<tr>
<td>Finnish Society of Clinical Cytology</td>
<td>Leena Krogerus</td>
</tr>
<tr>
<td>La Société Française de Cytologie Clinique</td>
<td>Marie-Cécile Vacher Lavenu</td>
</tr>
<tr>
<td>Hong Kong Society of Cytology</td>
<td>Nancy Yuen</td>
</tr>
<tr>
<td>Magyar Pathologusok Tarsasaga-Cytodiagnosticszak Sectio</td>
<td>László Vass</td>
</tr>
<tr>
<td>Indian Academy of Cytologists</td>
<td>Manjula Jain</td>
</tr>
<tr>
<td>Iranian Society of Clinical Cytology</td>
<td>Mansour Mehzad</td>
</tr>
<tr>
<td>Società Italiana di Citologia</td>
<td>Patrizia Maioli</td>
</tr>
<tr>
<td>Società Italiana di Anatomia Patologica Citodiagnostica</td>
<td>Sonia Prandi</td>
</tr>
<tr>
<td>Japanese Society of Clinical Cytology</td>
<td>Nobuhiro Takeshima</td>
</tr>
<tr>
<td>Kazakhstan Association of Clinical Cytologists.</td>
<td>Leyla B. Djansugurova</td>
</tr>
<tr>
<td>Korean Society for Cytopathology</td>
<td>Soon Won Hong</td>
</tr>
<tr>
<td>Sociedad Latino-Americana de Citología</td>
<td>José P. Schalper</td>
</tr>
<tr>
<td>Mexican Academy of Cytopathology</td>
<td>Oralia Barboza Quintana</td>
</tr>
<tr>
<td>New Zealand Society of Cytology</td>
<td>Peter N.G. Fitzgerald</td>
</tr>
<tr>
<td>Norsk Forening for Klinisk Cytologi</td>
<td>Ben Davidson</td>
</tr>
<tr>
<td>Österreichische Gesellschaft für Angewandte Zytologie</td>
<td>Helene G. Wiener</td>
</tr>
<tr>
<td>Sociedad Peruana de Citologia</td>
<td>Delia M. Jara Facundo</td>
</tr>
<tr>
<td>Sociedade Portuguesa de Citologia.</td>
<td>Fernando C. Schmitt</td>
</tr>
<tr>
<td>Romanian Society of Cytology</td>
<td>Irina Ecaterina Julea</td>
</tr>
<tr>
<td>Russian Association of Clinical Cytologists</td>
<td>Naum A. Shapiro</td>
</tr>
<tr>
<td>Schweizerische Gesellschaft für Klinische Cytologie</td>
<td>Lukas Bubendorf</td>
</tr>
<tr>
<td>Slovenian Society of Clinical Cytology.</td>
<td>Alenka Repse Fokter</td>
</tr>
<tr>
<td>Suid-Afrikaanse Vereniging vir Kliniese Sitologie/ South African Society of Clinical Cytology</td>
<td>Pamela M. Michelow</td>
</tr>
<tr>
<td>Svensk Förening för Klinisk Cytologi</td>
<td>Edneia M. Tani</td>
</tr>
<tr>
<td>Society of Clinical Cytology Taiwan</td>
<td>Ming-Shyan Huang</td>
</tr>
<tr>
<td>Turkish Society of Cytopathology</td>
<td>Özlem Aydin</td>
</tr>
<tr>
<td>Sociedad Uruguaya de Citología</td>
<td>Carmen Alvarez-Santín</td>
</tr>
<tr>
<td>West African Society of Cytology</td>
<td>Jaiyeola Thomas</td>
</tr>
</tbody>
</table>
Learn more about this promising new technique

Liquid-Based Techniques in Non-Gynecological Cytology
From Morphology to Molecular Methods

Editors
Adhemar Longatto-Filho
Kari J. Syrjänen

This special topic issue of Acta Cytologica provides the reader with a comprehensive and critical overview of liquid-based cytology (LBC) applied to different non-gynecological samples and technical procedures. Non-gynecological LBC plays an increasingly important role in diagnostic cytopathology, since it has the potential for a similar or better diagnostic accuracy than conventional smears. The possibility of storing material which is useful for molecular procedures provides LBC with a great advantage that may be further exploited by next-generation sequencing technology. The articles in this issue discuss LBC as a reliable alternative tool to surgical or core needle biopsies in cancer diagnosis and prognosis and open up new prospects for cancer research. Further, this issue reflects on the potential applications of several molecular players as specific targets for personalized therapy.

Contents

Editorial
- Liquid-Based Cytology: A 25-Year Bridge between the Pap Smear and Molecular Cytopathology: Zeppa, P.

Reviews
- Overview of Nongynecological Samples Prepared with Liquid-Based Cytology Medium: Ren, S.; Solomides, C.; Draganova-Tacheva, R.; Bibbo, M.
- The Nightmare of Indeterminate Follicular Proliferations: When Liquid-Based Cytology and Ancillary Techniques Are Not a Moon Landing but a Realistic Plan: Rossi, E.D.; Fadda, G.; Schmitt, F.
- The Implementation of Liquid-Based Cytology for Lung and Pleural-Based Diseases: Michael, C.W.; Bedrossian, C.C.W.M.
- Is Liquid-Based Cytology the Magic Bullet for Performing Molecular Techniques?: Abedi-Ardekani, B.; Vielh, P.

Original Articles
- Micronucleus Evaluation of Exfoliated Buccal Epithelial Cells Using Liquid-Based Cytology Preparation: Ramos, M.A.; Cury, F.D.P.; Scapulatempo Neto, C.; Marques, M.M.C.; Silva, H.C.S.
- Epidermal Growth Factor Receptor Test Performed on Liquid-Based Cytology Lung Samples: Experience of an Academic Referral Center: Bellecicne, C.; Malapelle, U.; Vigilar, E.; de Luca, C.; Troncone, G.

Author Index / Subject Index

The easiest way to order: www.karger.com/acy

Karger – Medical and Scientific Publishers
CH-4009 Basel, Switzerland
orders@karger.com, f: +41 61 306 12 34
www.karger.com
Guidelines for Authors

Acta Cytologica is a bimonthly published journal that aims to cover all aspects within the area of both clinical cytology and cytopathology. It further the understanding of cytopathic processes and facilitates the translation of current research into clinical practice. As the official journal of the International Academy of Cytology and affiliated to over 50 cytology societies around the world, Acta Cytologica evaluates new and existing diagnostic applications of scientific advances as well as their clinical correlation. The journal features Original Papers (Fine Needle Aspiration, Gynecologic Cytopathology, Nongynecologic Cytopathology, Techniques, Molecular Techniques), Novel Insights from Clinical Practice (formerly Case Reports), Letters to the Editor and Reviews. Criteria for acceptance are quality, originality, and clarity. Acta Cytologica will not consider papers that are either preliminary or purely descriptive. Reports on clinical cases are accepted only if they provide novel insight into unresolved problems of cytology and cytopathology. All articles are subject to editorial review.

Submission
Only original papers written in English are considered. Manuscripts should be submitted online using the online submission website at www.karger.com/acy (the preferred word-processing package is MSWord®). Before submitting your manuscript, you are encouraged to read the detailed guidelines at www.karger.com/acy_guidelines for specific directions as how to get a manuscript ready for submission. If you should have any problems with your submission, please contact the editorial office.

Kari J Syrjänen
Karger AG
Editorial Office 'Acta Cytologica'
P.O. Box
CH-4009 Basel (Switzerland)
Tel. +41 61 306 1437
Fax. +41 61 306 1434
E-Mail acy@karger.com

Conditions
All manuscripts must be accompanied by a covering letter signed on behalf of all authors verifying that all the authors were active participants. Assurance should be given that the manuscript is original and not under simultaneous consideration for publication in another journal. Please provide complete financial disclosure information. Presentation of manuscripts should conform with the Uniform Requirements for Manuscripts Submitted to Biomedical Journals (see N Engl J Med 1997;336:309–315). All articles will undergo an in-depth peer-review process. Submission of an article for publication implies the transfer of the copyright from the author to the publisher upon acceptance. Accepted papers become the permanent property of Acta Cytologica and may not be reproduced by any means, in whole or in part, without the written consent of the publisher. It is the authors' responsibility to obtain permission to reproduce illustrations, tables, etc. from other publications. Signed permission forms from the copyright holders and original authors for all previously published tables or figures must be provided.

Sections
Original Paper (Fine Needle Aspiration, Gynecologic Cytopathology, Nongynecologic Cytopathology, Techniques, Molecular Techniques): Submitted manuscripts should be fully documented reports of original research. They must describe significant and original observations.

Review: Potential authors are asked to contact the Editor-in-Chief before submitting a paper in order to avoid clashes with other pending reviews.

Letter to the Editor: Letters to the Editor concerning articles published in Acta Cytologica may be submitted for publication. They should not be more than one printed page in length. If accepted, the authors of the articles concerned will be given the opportunity to reply.

Novel Insights from Clinical Practice (formerly Case Reports): the publication space available for case reports is very limited. The journal only considers case reports with significant new insights or with an extremely unusual and memorable course. Highlighted boxes containing one or two bullet points on 'Established facts' (what is already known) and 'Novel insights' (what new information has been added) should be placed on the first page of the report. These should be selected so as to reinforce the novelty of the clinical observation.

Arrangement
General: Manuscripts should be written in English and be as concise as possible. The length of the text should be limited to approximately 3,000 words, pages numbered consecutively, starting with the title page, and continuing in the following order: abstract and key words, body of text, references, figure legends and tables. Use generic names of drugs when possible. For any trade name cited, capitalize the first letter, and include the manufacturer's name and location (city, state/province, country). Express weights and measures in metric values. Acknowledge any presentation at a national or international medical society and any substantive financial support.

Title page: The first page of each paper should indicate the title, the authors' names, the institute(s) where the work was conducted, and a short title for use as running head. Limit the number of authors to 6. If more than 6 authors contributed significantly to the article, the editorial office will consider including their names upon request.

Full address: The exact postal address of the corresponding author complete with postal code must be given at the bottom of the title page. Please also supply phone and fax numbers, as well as an e-mail address.

Key words: For indexing purposes, a list of 3–10 key words in English is essential.

Abstract: Each paper needs an abstract limited to 200 words structured as follows: Objective, Study design, Results and Conclusions. For Novel Insights from Clinical Practice the headings should be: Background, Case and Conclusion. Address the study's power to detect a difference if the research identified important variables that lacked a statistically significant difference.

Footnotes: Footnotes should be avoided. When essential, they are numbered consecutively and typed at the foot of the appropriate page.

Materials and Methods: Acknowledge that the original research was approved by the local institutional review board. Clearly state the method of any randomization, blinding and selection of specific statistical tests. Explain dropouts/exclusions and confounding variables.

Tables and illustrations: Tables and illustrations (both numbered in Arabic numerals) should be prepared on separate pages. Tables require a heading and figures a legend, also prepared on a separate page. Due to technical reasons, figures with a screen background should not be submitted. When possible, group several illustrations in one block for reproduction (max. size 180 x 222 mm) or provide crop marks. Each illustration must be labelled with its number and the first author's name. Electronically submitted b/w half-tone and color illustrations must have a final resolution of 300 dpi after scaling (final size), line art drawings one of 800–1,200 dpi. Do not modify a low-resolution image by increasing the dpi. Figure files should not be embedded in a document file but submitted separately. All illustrations must include the original magnification and the stain employed, and clearly identify what is being compared. They should not be more than one printed page in length.

Color illustrations: For all manuscripts accepted, authors will be charged CHF 500.00 for each color page published in the print version of the journal. Several color illustration may be placed onto one color page. When the illustration appears in black and white in the printed version, the authors will not be charged a fee. In the online version all figures submitted in color will appear in color at no charge to the author. Referring to colors in the text and figure legends should be avoided. We recommend using symbols, instead of color, for charts and graphs.

Ethics
Published research must comply with the guidelines for human studies and animal welfare regulations. Authors should state that subjects have given their informed consent and that the study protocol has been approved by the institution's committee on human research and thus meets the standards of the Declaration of Helsinki in its revised version of 1975 and its amendments of 1983, 1989, and 1996 (JAMA 1997;277:925–926). Information suitable to
Conflict of Interest
All forms of funding and support, including that from companies, as well as any potential competing financial interests should be acknowledged in the cover letter to the editors when applicable. The statement has to be listed at the end of the article.

Digital Object Identifier (DOI)
S. Karger Publishers supports DOIs as unique identifiers for articles. A DOI number will be printed on the title page of each article. DOIs can be useful in the future for identifying and citing articles published online without volume or issue information. More information can be found at www.doi.org.

Supplementary Material
Supplementary material is restricted to additional data that are not necessary for the scientific integrity and conclusions of the paper. Please note that all supplementary files will undergo editorial review and should be submitted together with the original manuscript. The Editors reserve the right to limit the scope and length of the supplementary material. Supplementary material must meet production quality standards for Web publication without the need for any modification or editing. In general, supplementary files should not exceed 10 Mb in size. All figures and tables should have titles and legends and all supplementary files should not exceed 10 Mb in size. All figures and tables should have titles and legends and all files should be supplied separately and named clearly. Acceptable files and formats are: Word or PDF files, Excel spreadsheets (only if the data cannot be converted properly), and video files (.mov, .avi, .mpeg).

Self-Archiving/Green Open Access
Karger permits authors to archive their pre-prints (i.e. pre-peer review) or post-prints (i.e. accepted manuscript after peer review but before production) on their personal or their institution’s internal website. In addition, authors may post their accepted manuscripts in public Open Access repositories and scientific networks (e.g. ResearchGate or Mendeley) no earlier than 12 months following publication of the final version of their article. For all self-archiving, the posted manuscripts must:

- Be used for noncommercial purposes only
- Be linked to the final version on www.karger.com
- Include the following statement: ‘This is the peer-reviewed but unedited manuscript version of the following article: [insert full citation, e.g. Cytogenet Genome Res 2014;142:227–238 (DOI: 10.1159/000361001)]. The final, published version is available at http://www.karger.com/?doi=[insert DOI number].’

It is the author’s responsibility to fulfill these requirements.

For papers published online first with a DOI number only, full citation details must be added as soon as the paper is published in its final version. This is important to ensure that citations can be credited to the article.

Self-archiving Author’s Choice™ (Gold Open Access) articles, see Author’s Choice™.

Author’s Choice™
Karger’s Author’s Choice™ service broadens the reach of your article and gives all users worldwide free and full access for reading, downloading and printing at www.karger.com. The option is available for a one-time fee of CHF 3,000.00, which is a permissible cost in grant allocation. More information can be found at www.karger.com/authors_choice. The final, published version of the article may be posted at any time and in any repository or on other websites, in accordance with the relevant Creative Commons license. Reposted Open Access articles must:

- Follow the terms of the relevant Creative Commons license
- Be linked to the final version on www.karger.com
- Include the following statement: ‘The final, published version of this article is available at http://www.karger.com/?doi=[insert DOI number].’

It is the author’s responsibility to fulfill these requirements.

Funding Organizations (NIH etc.)
The U.S. National Institutes of Health (NIH) Public Access Policy mandates that accepted, peer-reviewed manuscripts are archived in its digital database, PubMed Central (PMC), within 12 months of the official publication date. As a service to authors, Karger submits NIH-funded articles to PMC on behalf of the authors immediately upon publication. The NIH assigns a PMCID within approximately 1 month and the manuscript will appear in PMC after a 12-month embargo. For authors making their paper Open Access through Author’s Choice™, the embargo will be overridden, thereby accelerating the accessibility of the article. Karger also complies with other funders’ requirements (including Wellcome Trust and RCUK) for submission to PMC. Authors should include information on their grants in the Acknowledgements section of their papers.

Copy Editing
All manuscripts accepted for publication by Karger are subject to copy editing. Changes introduced by the copy editor and/or questions will be marked in the manuscript so please be sure to check the proofs against the manuscript. The copy edited manuscript will be returned along with the proofs.

Proofs
Unless indicated otherwise, proofs are sent to the corresponding author and should be returned with the least possible delay. Alterations made in proofs, other than the correction of printer’s errors, are charged to the author. No page proofs are supplied.

Reprints
An order form and a price list are sent with the proofs. Orders submitted after the release of an article in print are subject to considerably higher prices.
Annual Meeting 2016 –
Swiss Society of Cytology

September 2 – 3
Institute of Surgical Pathology
University Hospital Zurich

Venue
University Hospital Zurich
Lecture Hall OST
Rämistrasse 100
8091 Zurich

Directions
Tram Nr. 6, 9 and 10
Stop ETH/Universitätsspital
The lecture hall is next to
the cafeteria Dick&Davy.
Join us at
The 40th European Congress of Cytology
this October in Liverpool Sunday 2nd –
Wednesday 5th October 2016

There will be an abundance of inspiring symposia and
interactive microscope workshops within the programme which
cover all aspects of cytology; morphology, best practice,
guidelines and new techniques.

Register today @
www.cytology2016.com/registration

Follow us @
#ECC16 #cytology

SPONSORED BY OUR GOLD PARTNERS

HOSTED BY

Visit us @ www.cytology2016.com
Pathobiology offers a valuable platform for the publication of high-quality original research into the mechanisms underlying human disease. Aiming to serve as a bridge between basic biomedical research and clinical medicine, the journal welcomes articles from scientific areas such as pathology, oncology, anatomy, virology, internal medicine, surgery, cell and molecular biology, and immunology. Published bimonthly, Pathobiology features original research papers and reviews on translational research. The journal offers the possibility to publish proceedings of meetings dedicated to one particular topic.

Pathobiology
Exploring the Basis of Disease

Editor-in-Chief
B. Borisch, Geneva

Regional Editor: Far East
W. Yasui, Hiroshima

Selected contributions
- Biobanking Trends, Challenges, and Opportunities: Mackenzie, F. (Glasgow)
- Cell Purification: A New Challenge for Biobanks: Almeida, M.; Garcia-Montero, A.C.; Orfao, A. (Salamanca)
- The Role of Diagnostic Tissue in Research: Cheung, C.C.; Tolaricovic, E.E.; Porwilt, A. (Toronto, Ont.)
- DNA Damage Response-Related Proteins in Gastric Cancer: ATM, Chk2 and p53 Expression and Their Prognostic Value: Lee, H.E.; Han, N.; Kim, M.A. (Seoul); Lee, H.S.; Lee (Seoul/Seongnam); Yang, H.-K.; Lee, B.L.; Kim, W.H. (Seoul)
- Skeletal Metastatic Carcinomas from the Roman Period (1st to 5th Century AD) in Hungary: Merczi, M. (Esztergom); Marcsik, A. (Szeged); Bemert, Z.; Józsa, L.; Buczok, K.; Lassányi, G. (Budapest); Kelemen, M.H. (Esztergom); Zádori, P.; Bird, G. (Kaposvár); Hajdu, T. (Budapest); Molnár, E. (Szeged)
- Critical Role of the GM-CSF Signaling Pathway in Macrophage Pro-Repair Activities: Bernasoni, E.; D’Angelo, F.; Michetti, P.; Velin, D. (Lausanne)
- Absence of Microsatellite Instability in Soft Tissue Sarcomas: Campanella, N.C.; Penna, V.; Ribeiro, G.; Abrahão-Machado, L.F.; Scapulatempo-Neto, C. (Barretos); Reis, R.M. (Barretos/Braga/Guimarães)

Pathobiology
Founded: 1938
Category: Basic and Clinical Research
Field of Interest: Pathology
Listed in bibliographic services, including Journal Citation Reports, PubMed/MEDLINE, Biological Abstracts, EMBASE

2016: Volume 83
6 issues per volume
Language: English
ISSN 1015–2008
e-ISSN 1423–0291

Impact Factor: 2.480

More information at www.karger.com/pat
Minireview

93 When Morphology Meets Somatic Mutations: The New Possible Scenario in Thyroid Fine-Needle Aspiration
Rossi, E.D. (Rome); Schmitt, F. (Porto/Dudelange)

107 Effectiveness of the Pattern-Based Approach in the Cytodiagnosis of Salivary Gland Lesions
Amita, K.; Vijay Shankar, S.; Sanjay, M.; Sarvesh, B.M. (B.G. Nagara)

118 Fine-Needle Aspiration with Immunohistochemistry Using a Modified Scrape Cell Block Technique for the Diagnosis of Thyroid and Parathyroid Nodules
Wuertz, F.G. (Klagenfurt); Kresnik, E. (Villach); Malle, P.; Hyden, M.; Lind, P.; Rogatsch, H.; Gallowitsch, H.J. (Klagenfurt)

131 Importance of Flow Cytometry in the Cytopathologic Evaluation of Lymphoid Lesions Involving the Kidney
Bynum, J.P.; Duffield, A.; Ali, S.Z. (Baltimore, Md.)

Gynecologic Cytopathology

139 Prevalence of High-Grade Intraepithelial Neoplasia in Patients with Cytology Presenting Atypical Squamous Cells of Undetermined Significance
Marcos Lopes, A.C.; Campaner, A.B.; Henrique, L.Q. (São Paulo)

Tawfik, O.; Davis, M.; Diaz, F.J.; Fan, F. (Kansas City, Kans.)

154 Diagnostic Yield of Endoscopic Ultrasound-Guided Fine-Needle Aspiration Cytology of Porta Hepatis Lesions: A Retrospective Study

161 Analyzing Gastric Lavage of Gastric Cancer Patients: A Prospective Observational Study on Cytopathology and Determination of Intragastric CEA, CA 19.9, CA 72.4, and CA 50

167 Biliary Brush Cytology Revisited
Mehmood, S.; Loya, A.; Yusuf, M.A. (Lahore)

Novel Insights from Clinical Practice

173 Atypical Hidradenoma Mimicking Primary Mammary Carcinoma on Breast Fine-Needle Aspiration: A Case Report with Long-Term Follow-Up
Rooper, L.M.; Iding, J.S.; Cuda, J.D.; Ali, S.Z. (Baltimore, Md.)

179 Cytopathology of Hepatobiliary-Related Actinomycosis
Xing, J. (Pittsburgh, Pa.); Rodriguez, E.F. (Baltimore, Md.); Monaco, S.E.; Pantanowitz, L. (Pittsburgh, Pa.)

Cover illustration
Metastatic cholangiocarcinoma identified within a porta hepatitis lymph node by EUS-FNA. Immunohistochemical stain positivity for CK7, along with clinical data, support the diagnosis of metastatic cholangiocarcinoma. From Jones et al., pp. 154–160.