

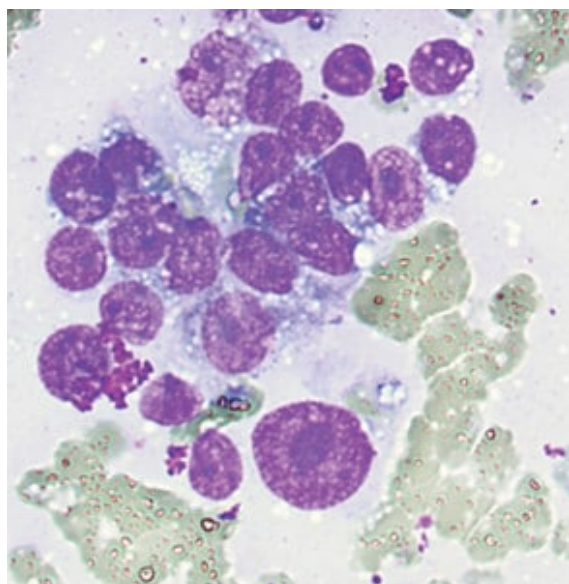
Cytopathology in Focus: Glass slide programs to have latest terms, ancillary clues



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Why glass slides are being reclassified, one body site at a time

August 2016—*Why is there more than one correct answer for this glass slide case? I wouldn't make the diagnosis of mesothelioma without correlating with the clinical history and performing ancillary studies. In our practice, we would call this case a follicular lesion of undetermined significance, and that isn't an answer on the response sheet.*

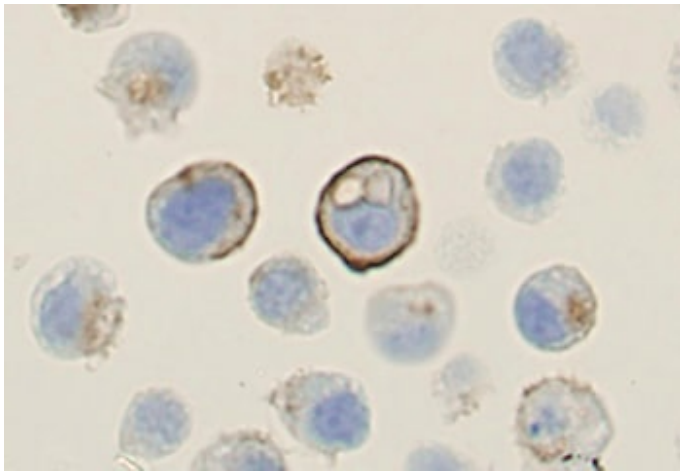


Metastatic ductal carcinoma. Lymph node fine needle aspiration, modified Giemsa stain, high magnification.

You asked and commented (a few examples above), and we listened. The CAP Cytopathology Committee is renovating and updating the Fine-Needle Aspiration and Nongynecologic Cytopathology Education glass slide programs. The slides in these programs, as in the Pap Education Program, receive a precursory review for damage, fading, and coverslip problems when they are sent back to the CAP and before they are returned to the program. This filters out the well-worn slides. Simultaneously, new slides are entered into the program every quarter after three pathologists on the Cytopathology Committee review and accept them. If all three pathologists agree that the slide represents a well-stained, well-prepared, and accurate example of the interpretation, it is accepted into the program to replace retired slides.

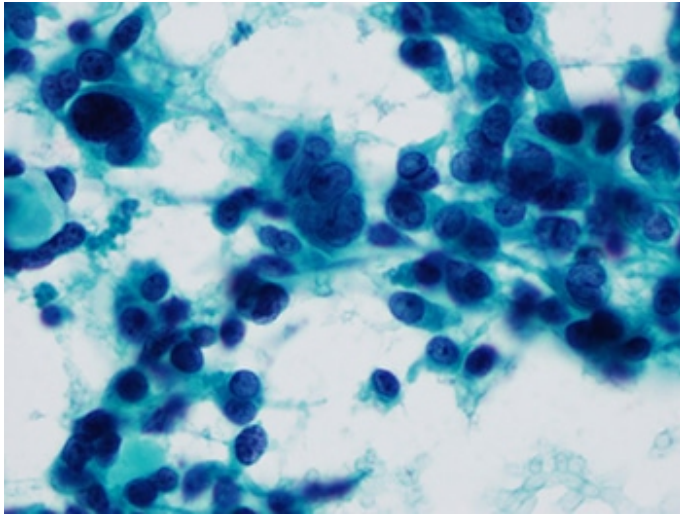
But is this good enough? Cytopathology Committee members thought not. Over the years, the practice of cytopathology has expanded and become more complex. Biopsies have gotten smaller and the use of cytopathology as a diagnostic tool has become common. Touch imprints of core biopsies are employed to assess for biopsy adequacy and ensure that diagnostic tissue is obtained. The use of ancillary tests, such as

immunocytochemical studies, flow cytometry, genotyping, FISH, and molecular analysis for mutations and translocations, is the standard to maximize minimal tissue. Pathologists and cytotechnologists routinely investigate electronic medical records to harvest information about clinical, radiographic, and laboratory findings that may help to narrow a differential diagnosis. The CAP cytopathology educational programs are intended to mirror actual clinical practice as closely as possible but had been lacking these ancillary clues. Time for a change: time to provide pathologists with all of the information they need to make the most specific interpretation possible and minimize catchall interpretations such as “metastatic malignancy” and “non-small cell carcinoma.”



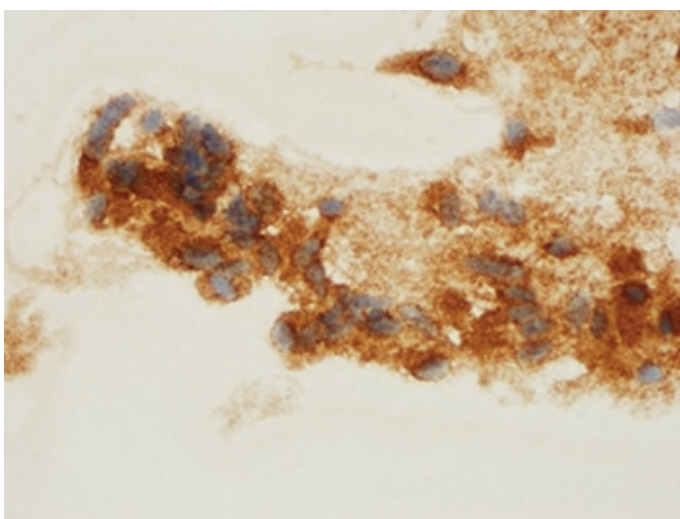
Metastatic ductal carcinoma. Lymph node fine needle aspiration, positive HER2 immunocytochemistry, high magnification.

Since 1991, with the introduction of the Bethesda System for Reporting Cervical/Vaginal Cytologic Diagnoses, the cytopathology community has been progressively moving toward standardized diagnostic terminology to improve diagnostic understanding of cytology reports. The Bethesda System for Pap test terminology has been updated several times, most recently in 2014. In 2007, the Bethesda System for Reporting Thyroid Cytopathology expanded those efforts into fine needle aspiration specimens. Then came the Papanicolaou Society of Cytopathology's standardized terminology and nomenclature for pancreaticobiliary cytology, the American Society of Cytopathology/International Academy of Cytology Paris System for Reporting Urinary Cytology, and the International Association for the Study of Lung Cancer/American Thoracic Society/European Respiratory Society International Multidisciplinary Classification of Lung Adenocarcinoma. Still evolving is an international effort to propose standardized terminology for reporting salivary gland cytopathology. These new directions provided committee members with the opportunity to update the terminology used in the glass slide program to support cytopathology organizations' recommendations for the use of standardized terminology.



Medullary carcinoma. Thyroid fine needle aspiration, Papanicolaou stain, high magnification.

What a huge undertaking! The CAP cytology glass slide programs contain more than 25,000 slides, most of which are in constant circulation to participating laboratories. The committee decided to tackle one body site at a time. To accomplish this, the CAP staff must retrieve all of the slides in circulation from that body site and replace them with new slides from another body system. Concomitantly, committee members review and update the CAP diagnostic response menu to mirror current recommended terminology. At each quarterly committee meeting, a subgroup of committee members manually review every retrieved slide for quality, rejecting those that are faded, broken, or poor examples of an interpretation. The slides are then reclassified to reflect the newly proposed diagnostic response menu. Because many of the existing slides were submitted to the program before the committee began to require associated ancillary studies and biopsy diagnostic confirmation, many of the cases require augmentation by the committee's Web Enhancement team in order for a definitive diagnosis to be rendered. If necessary, the Web Enhancement team supplements the case with images of immunocytochemistry, flow cytometry, or other studies that confirm diagnostic impressions and allow participants to choose the most specific response. Once this process is complete, the reclassified slides, with their enhancements, are released back into the glass slide programs.



Medullary carcinoma. Thyroid fine needle aspiration, calcitonin immunocytochemical stain, high magnification.

Thyroid fine needle aspirations were the first slides to be reclassified and categorized under the Bethesda System for Reporting Thyroid Cytopathology terminology. When participants receive their glass slide mailing they can view

the enhancement images for those cases on the CAP website. The committee strives to have identical morphology for the ancillary studies and the diagnostic slide, but in some circumstances ancillary studies from a morphologically similar case are substituted. As of 2014, the committee requires enhancements for newly submitted glass slides that need them for participants to confidently render a specific interpretation (for example, metastatic melanoma with an HMB-45 positive immunocytochemical enhancement image).

The committee has almost finished reclassifying lung slides, so participants can look forward to increasingly enhanced slides in the program and less confusion as to appropriate interpretive terminology when selecting answers.

1. Ali SZ, Cibas ES, eds. *The Bethesda System for Reporting Thyroid Cytopathology: Definitions, Criteria and Explanatory Notes*. New York: Springer; 2010.
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4. Rosenthal DL, Wojcik EM, Kurtycz DFI, eds. *The Paris System for Reporting Urinary Cytology*. New York: Springer; 2016.
5. Travis WD, Brambilla E, Noguchi M, et al. International Association for the Study of Lung Cancer/American Thoracic Society/European Respiratory Society international multidisciplinary classification of lung adenocarcinoma. *J Thorac Oncol*. 2011;6(2):244-285.

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