PathWays
InCyte Pathology News and Information

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Diagnostic Excellence

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Comparing Pap Test Results With Follow-up Cervical Biopsy Findings (Histo-Cyto Correlation)

Value-Added Service Provides Benchmark for Quality Patient Care

By Michael W. deTar, M.D., and Felix Martinez Jr., M.D.

Comparing the histological findings in a cervical biopsy with an antecedent Pap smear whose findings led to the biopsy procedure is an important component of quality diagnostic pathology. When Pap smear and biopsy results correlate—which they do most of the time—they reassure pathologist, clinician, and patient that good screening testing has led to appropriate medical intervention. When there is lack of correlation between histology and cytology, an attempt to explain the discrepancy by the pathologist assists in the proper follow up and care of the patient. Non-correlation between Pap and biopsy results can be reduced to the following three broad categories: 1) problems in the interpretation of the Pap cytology specimen (false positive or false negative Pap results), 2) problems in the interpretation of the biopsy material (false positive or false negative results), and 3) sampling problems in which the putative cytological abnormality is not represented in a subsequent biopsy. While histo-cyto correlation may not particularly press the need in all cases to review the cytology and histology concurrently, cases where non-correlation occurs absolutely require comparing the two in order to plan patient care.

There is a common perception that, because histology is the so-called "gold standard," non-correlating cytological results are always wrong. It is, however, important to remember that both colposcopy and directed biopsy are also tests that are subject to variation in sampling, interpretation, and preparation error.

Cytology can offer certain advantages over histology in the assessment of cervical dysplasia. Cytology provides exquisite nuclear detail, making rather subtle nuclear abnormalities easier to appreciate. Also, the morphology of the intact cell in a cytologic preparation, in comparison to that of the sectioned cell in histology, can be of great help in interpreting subtleties of histologic preparations. Finally, a wider area – theoretically the entire squamocolumnar junction (SCJ) – is sampled by a good Pap collection, where only a portion of the SCJ may be sampled by biopsy.

The Pap test and follow-up biopsy complement one another when both are reviewed and compared before the biopsy is signed out. The comparison of the two requires extra time and effort by the pathologist and laboratory staff. Good histo-cyto correlation is a time-consuming, labor-intensive process. It requires organized record keeping by the laboratory, along with extra efforts by a dedicated laboratory staff to assemble all necessary slides prior to pathologist review. This type of histology-cytology correlation has been an integral part of value-added services provided by InCyte Pathology for over 30 years.

FREQUENTLY ASKED QUESTIONS

How is histo-cyto correlation performed at InCyte Pathology?

When a cervical biopsy specimen is received in the laboratory, a cross-check of the patient's diagnostic history archived within the laboratory information system is conducted. The most recent abnormal previous Pap cytology specimen is retrieved from the slide file, as well as any previous abnormal cervical biopsies. These are combined with the current diagnostic material and sent to the pathologist for review. The diagnostic report is then prepared with a histo-cyto correlation comment appended to the diagnosis.

What are some examples of how comparing biopsy results with a preceding abnormal Pap smear can have clinical utility?

Pap cytology with HGSIL; cervical biopsy and ECC are negative.

The first question to be answered here is whether the Pap test was a false-positive result. There are many mimics of dysplasia in cervical cytology (to name a few examples: endocervical tubal metaplasia, atrophy, excessive twisting of a bottle-brush-like collection device). The pathologist must first review the Pap to confirm the presence of high-grade dysplasia. Next, s/he must be certain that the paraffin block containing the biopsy material was adequately sectioned to be sure that focal disease is not hidden in uncut tissue in the paraffin block. Finally, the pathologist must communicate to the clinician via a comment in the report that the patient indeed does have cytological evidence of high-grade dysplasia that is not demonstrated in follow-up biopsies. Depending on the patient's clinical history and her clinical setting, decisions must be made regarding a more aggressive procedure (like cone biopsy) versus continued close follow-up.

Pap cytology with atypical glandular cells of endocervical origin; colposcopy and endocervical curettings are negative.

Here, the pathologist must review the Pap findings to decide the degree of cytological abnormality evident in the Pap test. After deep sections into

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Following the Four "C"s: Correct, Complete, Clinical, and Clear

By Michael W. deTar, M.D., and Felix Martinez Jr., M.D.

Why does the information on the specimen container, slides, and request form need to be correct?

The correct labeling of patient material is essential for good patient care and for quality assurance in the pre-analytic phase of specimen preparation. Additionally, federal law (the Clinical Laboratory Improvement Act of 1988) mandates that all patient specimens and corresponding requisitions be properly labeled.

According to The College of American Pathologists, the best way to ensure that patient specimen information is accurate is to have at least two identifiers on the submitted material. This is accomplished by having a patient name **and** a specimen source on all specimen containers and requisitions. This assures that the specimen will receive appropriate handling and processing in the laboratory. It is the policy of InCyte Pathology to return all specimens without proper identification to the originating office.

Why does the information on the requisition need to be complete?

To provide adequate diagnostic care to your patients, it is essential that all pertinent information be provided. Failure to provide the necessary information delays the generation of important diagnostic results.

What are the components of a complete *medical profile?*

Name and Social Security Number

The laboratory information system at InCyte Pathology uses both name **and** social security number to identify the patient and to track previous listings for the patient in our database. Easy access to previous material facilitates the histology/cytology correlations that we perform—an activity that greatly enhances the quality of diagnostic health care.

Minors Also Have Social Security Numbers!

For patients who are minors, it is important to remember to include **the minor patient's** social security number (rather than the parents'). This will ensure that the integrity and continuity of an individual's diagnostic history is well maintained throughout life.

Date of Birth

In addition to providing a second tier for confirming patient identity, knowledge of the birth date (and, therefore, patient age) has specific relevance for interpretations in pathology. The finding of atrophic endometrium, for example, has a dramatically different connotation in a 25-year-old woman compared to a 60-year-old woman. Patient age frequently provides guidance to the pathologist in rendering a diagnosis.

Address

Incomplete patient information will lead to a phone call to the submitting office, taking office staff away from more important duties.

Name of Provider Submitting the Specimen

The name of the provider caring for the patient must be included to optimize the delivery of diagnostic results. Additionally, there are occasions when the final diagnostic opinion will depend upon clinical information best communicated through "physician-to-physician" verbal interchange, and the pathologist needs to know who to call. Another example: the monthly Pap summaries we provide to all physicians will not be accurate if the submitting physician's name is incorrect. And, finally, every provider has a unique identification number (UPIN) that is required to submit a claim to the patient's insurance carrier.

Copies to Other Doctors – CC: Requires Accurate Information

When requesting that a copy of a surgical pathology or cytology report be sent to another physician(s), please be sure to provide the doctor's first and last names **and** the address and location of the physician's office. This provided information ensures correct delivery of report copies. The space to provide this information is in the upper right-hand corner just below the submitting physician information of the Cytology/Histology examination request form that accompanies the specimen to the laboratory.

Why does the requisition need to include clinical *information?*

The inclusion of brief clinical information, impression, and/or description allows the pathologist to attempt clinical/pathologic correlation. This allows the pathologist to attempt to provide relevant information regarding a diagnosis. The provided clinical information is best when it is clear, relevant, and concise.

HPV Testing Request

When requesting HPV testing, the clinician must specify for which specific diagnosis reflex HPV testing is requested. ASCCP guidelines recommend HPV testing on Atypical Squamous Cells of Undetermined Significance (ASC-US). All other reflex diagnostic categories must be specifically requested on the InCyte Cytology/Histology request form.

Why does the information on the requisition need to be clear?

One of the consistent areas of concern in the arena of reducing medical errors pertains to the misinterpretation of written instructions. Incorrectly interpreted orders on a requisition may lead to inappropriate testing and the compromising of specimen integrity. Requisitions need to be completed in clearly legible handwriting or type-print to minimize this risk. Illegible instructions or patient data will necessitate interruption of office staff members by a phone call for clarification.

Histo-Cyto Correlation, continued from page 1

the paraffin block have been obtained and evaluated, the pathologist must then make a decision of whether cone biopsy should be recommended for the patient. When endocervical glandular neoplasia occurs deep within glands, the ECC can be negative, and disease may only be demonstrated after deep conization. In our experience, an outpatient LEEP procedure as follow-up for this particular scenario of non-correlating results often results in interfering cautery artifacts, superficial endocervical sampling, or both. Therefore, since a definitive answer may not be provided by a superficial LEEP, a cold knife conization or very deep electrocautery excision should be considered to be able to provide the best tissue to evaluate the patient's disease.

To summarize, the pathologist must utilize his/her best cytopathology skills to interpret the atypical glandular cell abnormality in the Pap smear in order to make useful recommendations

Pap test reports LGSIL; follow-up colposcopically-directed biopsy with HGSIL, ECC is negative.

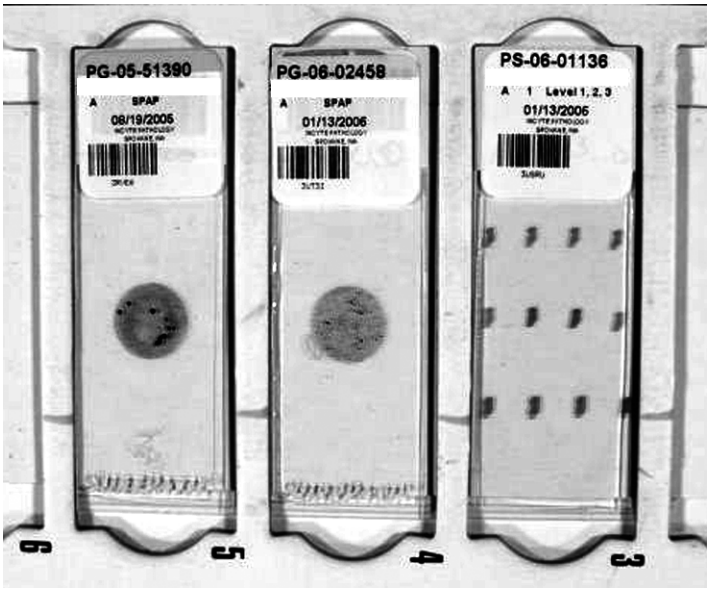
The overall strategy of Pap screening with follow-up colposcopy is to exclude the presence of invasive disease. In any setting of non-correlating results, the pathologist must review both the Pap test and biopsies to determine whether invasive malignancy was missed. The Pap smear in this scenario should be carefully reevaluated to be sure that invasive disease was not missed in the original interpretation. The pathologist must then make sure that sufficient sections were prepared from the paraffin block of the biopsy material. Once invasive disease has been excluded in investigating non-correlating Pap and biopsy results, the pathologist should report what steps were employed in the investigation.

It is important to note that, in approximately 20% of cases, Pap results of ASCUS/LGSIL will demonstrate a greater degree of abnormality in the follow-up colposcopy and biopsy. This is not necessarily a mistake on the part of the cytology screening, since sampling variability can naturally occur between a screening test and its more specific follow-up biopsy.

Correlation between Pap cytology screening results and subsequent biopsy material contributes not only to the quality of patient care, but also serves as an internal quality control for diagnostic accuracy in pathology. We use histo-cyto correlation as a teaching tool for both cytotechnologists and pathologists.

Please do not hesitate to call the laboratory with any questions you may have about our histo-cyto correlation program. Our desire is to help you provide the best cervical health care possible for your patients.

When Pap smear and biopsy results correlate, they reassure pathologist, clinician, and patient that good screening testing has led to appropriate medical intervention.



Prior abnormal Pap Concurrent Pap Current biopsy

Pap monolayers and biopsy in same flat ready for pathologist's review.

INCYTE PATHOLOGY

Return of Specimens

InCyte Pathology, P.S., is accredited by the College of American Pathologists (CAP) and the American Society for Cytopathology (ASC) and must pass rigorous inspections to maintain accreditation. In order to comply with federal regulations (CLIA) for handling improperly identified specimens, InCyte has implemented a policy for returning specimens to the submitting office. Specimens will be returned to the originating clinician's office for clarification of the following problems:

- The patient name on the specimen does not match the patient name on the requisition.
- The specimen is not identified or labeled with patient name.
- The requisition does not have patient name.

InCyte recognizes that returning specimens may adversely affect turnaround time in some instances. However, we feel that proper patient identification and compliance with federal regulations are of utmost importance in providing quality care for your patients.

InCyte Pathology, P.S.
P.O. Box 3405 • Spokane, WA 99220-3405

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InCyte Pathology, P.S.
P.O. Box 3405 • Spokane, WA 99220-3405
(509) 892·2700 • 1·888·814·6277

InCyte Pathology is an independent professional service company of pathologists that provides interpretation of biopsies and cytology preparations.

Circulation List

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PathWays has items of interest for office personnel and assistants as well as for physicians, nurse practitioners, nurses and physician assistants. We recommend that, upon completion of circulation, your copy of ***PathWays*** be filed in the InCyte Pathology *Anatomic Pathology Services Manual* for future reference.

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