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FOCUS

PAPANICOLAOU SOCIETY OF CYTOPATHOLOGY

Companion Society of the United States and Canadian Academy of Pathology

Dedicated to Clinical Practice, Clinical Education and Clinical Research

PRESIDENT'S MESSAGE

ANDREA ABATI, MD

National Cancer Institute, Bethesda, Maryland

GREAT EXPECTATIONS

"That was a memorable day to me… Imagine one selected day and think how different its course would have been… and think for a moment but for the formation of the first link on one memorable day"

Charles Dickens

What is this memorable day? Feb. 11, 2006, of course. Aside from being my son's 11th birthday and bringing over a foot of much anticipated snow to the East Coast of the USA, it was the day that the PSC showed its true stuff at the Companion Society Evening Session of the USCAP. **"The Papanicolaou Society of Cytopathology Recommendations for Thyroid Fine Needle Aspiration"** resulted in record attendance and excellent reviews for us. The incredibly hard work of Lester Layfield and Zubair Baloch and their committee members (Scientific Program and Standards of Practice Guidelines, respectively) was well received beyond my wildest hopes or expectations. When was the last time you remember attendees flowing out of the seats and into the hall until 9:45pm at a Saturday evening session? I was afraid I was hallucinating.....After several years of dwindling attendance and warnings of impending removal from USCAP, we were suddenly feeling on top of our game - eager and even optimistic! With focused energy, single-minded purpose and drive, nothing can diminish our great expectations for the future of our society. Interest level in participation, membership and attendance at our reception set new records - we even ran out of food! This year's conference and anticipation of the recommendations spurred us on to further action - an NIH/NCI sponsored conference to set standards of practice guidelines for thyroid FNA will take place at NIH on Sept. 13 and 14, 2007. You all will certainly be informed every step of the way, so watch for messages on our website and list serve with details as they become available. Currently, the PSC guidelines for thyroid FNA have been posted on the website. These will serve as a template for any future work.

Keeping up interest and support for our evening session at USCAP remains of the utmost importance for us to maintain our status as a companion society. Next year our session should be just as intriguing - Changing practice patterns using small tissue pathology - just how much is enough? We will look at the utilization of cytology vs. tissue pathology in every day practice. Factors driving the practice patterns and what we can do to ensure optimal patient care will be examined. Our opening speaker will be Dr. Steven Silverberg who will discuss the utilization of cytology in the frozen section room. Please join us for this provocative presentation of state of the art information which will focus on how changing trends in medicine are affecting our practice of pathology, for better or for worse.

This year we also witnessed a move towards the "internationalization" (for lack of a better word) of the society with the election of Andrew Fields of Australia to our executive board. We are hoping that Andrew will help make the society more

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PRESIDENT'S MESSAGE *Continued from page 1*

visible not only "down under" but also in Australia and Asia by setting up some PSC sessions at national and international meetings there. Additionally, the International Relations Committee set up PSC companion meetings last year at the European Congress of Cytology in Paris and again this November in Venice. We are certainly interested in enlisting experienced speakers who are willing to travel internationally to PSC sessions to bring our experience and expertise around the world. We have so many international members all with a wealth of experience and we welcome the opportunity to engage the international cytology community. We have attempted to do this at our annual meeting via our afternoon sessions spearheaded by Eric Suba, Steve Raab and Carlos Bedrossian - "Cells Without Borders". Thus far the emphasis has been on cervical cancer with speakers from Africa, Europe, North and South America, Australia, and Asia in the last three years since its inception. Next year the focus will shift to the utilization of FNA around the globe. So please drop me a line and let me know if you are interested in speaking at an international session.

In other society news…

This year we have accomplished not just a face-lift, but major reconstructive surgery on our website. If you haven't been there (www.papsociety.org), take a quick visit and see. PSC practice guidelines, awards, bios, and the case of the month are all there.

The other exciting news is strictly academic.... Oxford University Press has approached PSC to do a series of monographs to publish on cytology and small tissue pathology. Just how wonderful is this? A series of specialized practical text books for bench use which will showcase some of the brain power we have in PSC! David Chhieng is currently leading a task force to discuss potential editors for individual volumes of this multivolume series that will come out several issues at a time over the next few years.

There is good news all around. The PSC is achieving new levels of academic importance and expanding internationally due to the high level of interest and energy of our members. Surely there are reasons for "Great Expectations".

THIS ISSUE OF FOCUS HAS BEEN MADE POSSIBLE BY AN UNRESTRICTED EDUCATIONAL GRANT FROM THE CYTYC CORPORATION.

THE MEMBERS OF THE PAPANICOLAOU SOCIETY THANK YOU FOR YOUR GENEROUS SUPPORT.

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TIMELY TOPICS

DON'T BE TAKEN BY SURPRISE!

TIPS FOR PREPARING FOR CAP UNANNOUNCED INSPECTIONS

DAVID C. CHHIENG, M.D., M.B.A., JANIE A. ROBERSON, SCT (ASCP)

UNIVERSITY OF ALABAMA, BIRMINGHAM AL

In September 2005, the College of American Pathologists (CAP) made known that the college would be conducting unannounced routine inspections starting June 2006. The implementation of CAP's new accreditation process brings significant change in how laboratories address the inspection and accreditation process. The objective of this article is to help laboratories manage the process by offering tips on to how to prepare for and handle themselves during an unannounced inspection.

THE LOGISTICS OF UNANNOUNCED INSPECTION

Unannounced inspections have always been part of the arsenal in the Laboratory Accreditation Program (LAP). Until now, most of the unannounced inspections have involved complaint investigation or re-inspection before a laboratory is removed from probation. However, starting June 2006, all routine inspections will be unannounced. The goal is to create an expectation that each accredited laboratory is constantly in compliance with CAP standards. As a matter of fact, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) in 2006 started to conduct its regular inspection of hospitals on an unannounced basis. The new policy will affect all U.S. and Canadian laboratories that participate in the CAP LAP. Exceptions are laboratories located outside the United States and Canada and laboratories performing reproductive and forensic urine drug testing. Unannounced inspection means that the laboratory being inspected will have no knowledge of the date of its inspection or the name and the members of the inspection team prior to the date of inspection. No direct contact is allowed between the laboratory and the inspection team. The new policy applies to laboratories with anniversary dates after June 1st 2006. Inspections will occur up to 6 months prior to the laboratory's anniversary date. The laboratory may select 10 "blackout" dates—dates that the laboratory does not want the inspection team to show up for various reasons. These dates do not include National Holidays which are considered automatic blackout date. However, all other days, including Federal holidays and weekends, are potential inspection days.

PREPARATION PRIOR TO THE INSPECTION

For the majority of the laboratories who have been striving for continuous readiness, the new process should not cause major disruptions to the routine operation. However, for a small number of laboratories that traditionally focus solely on inspection preparation for the purpose of 'passing' the inspection, the new process may serve as a wake up call and necessitate a change in how the laboratory thinks and operates. Following are tactics the laboratory can incorporate the new process into the laboratory culture. They include; **inform** everyone within the organization, **train** adequately for all staff levels, develop accessible **tools and resources**, and **practice**.

- **Inform**

It is imperative to notify the relevant hospital and clinical administrators about the process change. Their support is essential to maintaining readiness. Even for those labs actively engaged in the process of continuous, systematic and operational improvement, the staff can feel a bit of trepidation with the new process. It would certainly help in alleviating some of the anxiety by explaining to everyone, i.e. clinical, technical, and supportive staff, the new inspection process, its implication, and what new procedures and policies will be in place.

- **Train**

Laboratories are expected to operate normally without compromising patient care regardless of staff vacation schedule. Therefore, the laboratories should not prohibit staff from taking vacations during the 6-month inspection window. However, laboratories should identify and train individuals as back up to ensure that they possess the same knowledge as the primary individuals. It is also advisable that remaining staff be informed and educated so that they understand the inspection process and the key elements of compliance standards.

- **Tools and resources**

It is critical for the laboratories to plan ahead to efficiently coordinate all the resources that go into an inspection on very short notice. Develop a phone list of the hospital administrators, medical director, laboratory director, laboratory manager, supervisors, and their backup. It is a good practice to document compliance to each checklist question and note the location of the documents and/or records that demonstrate compliance to the requirement. Procedure manuals, records, and other documents should be stored in a central location so that they can be accessed easily. Laboratory staff should maintain records that are up-to-date. Laboratories should come up with a list of tasks that the laboratories need to handle when the inspectors show up and identify both primary and backup individuals that are responsible for each task as a fail-safe measure.

- **Practice**

In addition to conducting an internal inspection as required by the CAP halfway through the 24-month accreditation cycle, laboratories can conduct more frequent self-inspections. Conducting more than one inspection per year, will help laboratories uncover areas that may be overlooked or need better clarification. Additional self-inspection also offers opportunity to involve technical staff other than those in the supervisory position in the inspection process and allows the back up personnel to be familiar with the inspection process and the checklist.

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ON THE DAY OF INSPECTION

More often than not, the "front-line" staff members are the first personnel to greet the inspection team and activate the "inspection day protocol". They should be properly trained and comfortable handling an unannounced inspection team. It is acceptable to ask the inspectors to wait while the laboratory is performing identity checks and summoning appropriate personnel. However, it would be unwise to refuse to be inspected by the inspection team, leave them waiting for an extended period of time, or behave unprofessionally. The inspection team should be allowed to begin the inspection even if the laboratory director is not on site.

AFTER THE INSPECTION

Laboratories should self-evaluate the entire inspection process and make changes when improvements are in order.

CONCLUSION

Preparing for a CAP unannounced inspection can be an overwhelming process. Adequate preparation will help to streamline the process. Above all, stay focused on the big picture: the CAP, the laboratories, and the inspectors are engaged in a joint effort to ensure the provision of safe and high quality laboratory services.

THE PSC CONGRATULATES THE RECIPIENTS OF THE FOLLOWING AWARDS PRESENTED AT THE ANNUAL MEETING OF THE PAPANICOLAOU SOCIETY OF CYTOPATHOLOGY, ATLANTA, GEORGIA, FEBRUARY 2006

"L.C. TAO" EDUCATOR OF THE YEAR AWARD

• Carlos WM Bedrossian, MD, PhD, FICA
Biomedical Concepts, Oak Park, IL
Norwegian American Hospital, Chicago, IL

"YOLANDA OERTEL" INTERVENTIONAL CYTOPATHOLOGIST AWARD

• Sixten Franzen, MD, PhD
Oslo, Norway

PATHOLOGISTS-IN-TRAINING WINNERS OF THE PAPANICOLAOU RESEARCH AWARDS

FIRST PRIZE

• Eric Wei, MD, PhD

EGFR Expression as an Ancillary Tool for detecting Lung Cancer in Cytology Specimens

Department of Pathology, Louisiana State University Health Sciences Center

SECOND PRIZE

• Vaishali Pansare, MD

Fine Needle aspiration Biopsy Outcomes of Masses Detected by Positive Emission Tomography: Correlation with Standard Uptake Value

Department of Pathology, Wayne State University

ANNUAL MEETING AND RECEPTION OF THE PAPANICOLAOU SOCIETY OF CYTOPATHOLOGY, ATLANTA, GEORGIA, FEBRUARY, 2006

PSC Reception: Drs. Ballasanian and Yang.

Drs. Dawsy, Filie, Gatusso and Monasca catch up at the PSC Reception.

PSC Reception: Drs. Raab, Ballasanian, Roth, Cangiarella and Chhieng.

PSC Evening Companion Meeting: Dr. Asa presenting.

PSC Afternoon Session Speakers: Drs. Koutselini, Bedrossian, Scnitt, Dawsy and Zarka.

PSC Evening Companion Meeting: Dr. Pittman (presentee) and Dr. Layfield (moderator).

PSC Evening Companion Meeting; Recommendations for Thyroid FNA.

MEDICAL-LEGAL CONNECTION

Part 1. Liability Risk Reduction Benefits of New Cervical Cancer Screening Technologies

Mark S. Sidoti, Esq

Newer cervical cancer screening technologies, including liquid based ("LB")cytology and gene based high-risk HPV typing performed concurrently with the conventional or LB Pap test, offers significant benefits to patients and clinicians alike. The paramount benefit to the health of patients from a standardized, highly effective and much more sensitive (in the case of gene based HPV testing, almost 100%) approach to monitoring for cervical precancer and prevention of cervical cancer and the risk of disease development may be obvious. However, while the ancillary risk management and control benefits of this approach may be less apparent, they are no less significant.

The risk to clinicians and laboratories arising out of cervical cancer diagnosis and treatment is directly proportionate to the risk that a patient with disease will not be diagnosed at a stage at which precancer can be cured with minimal intervention (e.g. cryotherapy or a cone biopsy) and cancer prevented. Reducing the risk to patients necessarily reduces the risk that a clinician or lab professional will be exposed to the ever-widening net of malpractice liability involving this specific disease.

Part I: Anatomy of a Legal Risk[1]

Pap Smear Liability - The Increasing Risk

In spite of, and perhaps because of, the tremendous success of the Pap smear in reducing cervical cancer diagnoses, the Pap smear has, in the last 20 years, become the focus of litigation throughout the United States. Much of this litigation arose in the wake of the 1987 Pulitzer Prize winning Wall Street Journal article by Walt Bogdanich ("Lax laboratories: the Pap Smear Misses Much Cervical Cancer Through Lab Errors" *Wall Street Journal*. November 2, 1987), which ultimately lead to the CLIA 1988 regulations. Since then, the sensitivity and specificity of Pap testing has been, itself, placed under the "microscope" of public and legal scrutiny. The mindset leading to the crises in Pap smear liability is perhaps best epitomized in the website solicitation of clients by one plaintiff's malpractice attorney in 1997, who claimed "If a woman develops cervical cancer and undergoes a hysterectomy or dies, there is almost certainly a claim for medical malpractice against some health care provider, unless the woman utterly failed to get even periodic Pap smears." [Perey R, Cervical Cancer and the Misdiagnosed Pap Smear. Law Office of Ron Perry Trial Lawyers, March 1997].

Fertile Ground for Plaintiffs' Attorneys

Entreaties such as these have taken advantage of the impression of many non-physicians that a negative Pap smear represents an absolute assurance that a woman will not develop cervical cancer. The well-documented limitations on the sensitivity and specificity of traditional Pap testing, as discussed above, belie this, yet the perception persists. When combined with the issues of overworked cytotechnologists and pathologists, excessive false negative rates, and inadequate quality control procedures that gave rise to the CLIA regulations, these public expectations present fertile ground for enterprising plaintiff's attorneys. The records maintained by the Doctors Company, one of the leading insurers of pathologists in the U.S., demonstrate that, between 1987 and 1995, the number of cervical cytology lawsuits against its insured increased by more than 600% and the total amount paid for these claims increased from $5,321 to $5,594,900. The trend continues, though not as precipitously, with many Pap smear lawsuits filed throughout the US every year, often resulting in settlements and verdicts in the multiple millions of dollars. In recent years, cervical cancer litigation verdicts and settlements have been significantly and increasingly higher, including well publicized 8 figure verdict in the New York region in 2005 and many high 6 and 7 figure settlements throughout the country.

In addition to a public misperception that the Pap test is, or should somehow be, diagnostic of any cancerous or precancerous condition of the cervix, and the anger engendered by the failure of this presumed "fool proof" test, other factors have cultivated the expansion of legal risk to both clinicians and laboratory professionals surrounding cervical cancer. These include:

- **The prevalence of the test itself** - Over the past several decades, most American women have come to recognize the need for Pap screening, and many understand that it should be performed annually. More Pap screening -- like more mammograms, blood screenings and genetic tests - leads to greater possibility for adverse outcomes in the tested population, and hence more lawsuits.

- **The unreliability of the Pap test** - Most studies demonstrate that the Pap smear has an irreducible false negative rate of between 5 and 20%. "False negatives occur at a low, but well-documented and probably irreducible rate of at least 5% to 10% . . ." [DeMay, R, *The Art & Science of Cytopathology*] In fact, it is generally accepted that the false negative rate even in the best clinical laboratories is at least 5%. [Allen & Holaday]. False negative Pap smear reports emanate from three primary sources - sampling (or preparation) error, location error, interpretation error, and test process (or follow through) error. Location error (in which the abnormal cells present on a Pap smear are simply not located by the screening technologist or pathologist) and interpretative error (where the questionable cells are located but are misinterpreted as less abnormal than they actually are), emanate from the laboratory and its personnel. Sampling error, in which the appropriate areas of the cervix are not adequately or properly sampled so as to detect an existing and otherwise detectable lesion, or the slide is collected and fixed in such as way as to compromise the quality of cell preservation, is most often considered the responsibility of the treating clinician. Regardless of the allocation of responsibility, all of these factors leading to false negative results can lead to a situation where a woman with cervical cancer is not timely diagnosed, and all lead to lawsuits which include both labs and clinicians as defendants.

- **Test process error** - Mishandling of slides, loss of results, failure to notify patients of abnormal results and other miscommunication of abnormal results to patients, also gives rise to liability on the part of treating clinicians when a previously undisclosed cervical cancer is ultimately detected. A recent survey of physicians found that 17-32% had no reliable method to make sure results of all tests ordered are received and 33% of physicians did not always notify patients of abnormal lab results. [Wear Finkle, DJ, Risk Management, Lisbon alls, ME, Pragmatic Press 2000].

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- **The affected population and damages involved** - Most cervical cancer victims are middle aged women, many with or desirous of children. This population makes for particularly sympathetic plaintiffs. Moreover, cervical cancer cases involve not only the obvious element of a cancer diagnosis, but one that affects the reproductive abilities of the victims, particular "hot button" issues for most juries. Moreover, these claims often entail either death of the woman (often preceded by extended periods of intense pain and suffering) or significant surgery and often adjunctive treatments such as chemotherapy and radiation, which in and of themselves, (and combined with the sequelae they often lead to) increase the settlement and verdict potential substantially.

- **The natural history of cervical cancer** - Because it is well established that progression from easily treatable precancer to cervical cancer is a generally slow process a common theme in cervical cancer litigation is the fact that the physician had "many years" to discover the patients developing cancer and treat it before it had progressed to the advanced stage it was at when diagnosed. This theme resonates with many juries.

- **Ease of prosecution** - cervical cancer lawsuits generally (and as compared to other cancer litigation) require relatively little preparation or expertise to prosecute on behalf of plaintiffs. Indeed, the process is often as simple as a woman diagnosed with cervical cancer securing her last several Pap smears (often at the direction of her attoney) and having them reviewed by the ever increasing number of pathologists and cytopathologists willing to involve themselves in the process of second guessing Pap smear laboratory results. In most cases - given the known limitations of Pap test screening, including the established false negative rate, the typical number of cells sampled on a cytology slide, the subjectivity and nuance involved in Pap smear interpretation, and the inherent outcome and context bias infecting the retrospective review of the plaintiff's expert - it is not surprising that unreported "abnormal" cells are typically located and allegations leveled. In the majority of filed cases, these claims provide an inviting segue into additional allegations of malpractice of some form against treating clinicians who are expected to have discovered the cancer at an earlier stage, regardless of the cytology results (often, it is alleged, through recognition of "tell-tale" symptoms that only become so in retrospect). One prominent plaintiff's attorney has said of Pap smear lawsuits:

> With proper pre-suit investigation, discovery, and expert assistance, these cases can be successfully prepared for trial. Because of intense media coverage in this area, many labs are reluctant to try these cases if the plaintiff attorney has covered all the bases and is prepared to face all the common defenses. Jurors are likely to have relatives or friends who have suffered through or died from cancer. This will make it dangerous for the defense to downplay the seriousness of cancer and the importance of early diagnosis. Clay Miller, *Trial* - June 1997

The Clinical Context of the Cervical Cancer Lawsuit: The Typical Case

The cervical cancer lawsuit fact pattern can, of course, vary widely, but the primary elements remain constant –

- a woman's cervical cancer develops undetected over a period of years,
- progressing past the pre-clinical and minimally invasive stages, to a point at which extensive intervention and adjunctive therapies are required.
- In some cases, by the time the cancer is diagnosed, it has metastasized distantly and is no longer curable.
- During the course of this disease process, several Pap screenings are performed which, alone, or in conjunction with clinical signs of evolving cervical cancer, could have resulted in early detection and treatment of the cancer had - according to the plaintiff's retained expert witnesses - the doctor, the laboratory, or both, performed their duties within the applicable standards of care.
- Many cases involve what might be considered less than diligent attention to one's own health status by the patient herself.

The Common Risks

The risks to the clinicians and laboratory professionals in cervical cancer lawsuits are varied but, again, hold to common patterns. The laboratory and its professional employees are at risk based upon the interpretation of the cytology specimens. The subtleties of this exposure include:

- whether abnormal cells on the Pap tests were interpreted correctly,
- whether abnormal cells were located at all,
- whether the reported results clearly reflected the abnormality present,
- whether appropriate procedures were followed in the screening process, and
- whether recommendations for follow up cytology (or, in rare cases clinical care) were accurate and advisable under the circumstances.

Common themes in disputed cases of whether the slide should have been reported as "within normal limits" vs. abnormal of any degree include the role of the three primary causes of false negative Pap smears (sampling, location and interpretation error), and the issue of whether a missed low level abnormality (such as ASCUS) represents a deviation from accepted standards of care.

In cases where the laboratory must concede some degree of error in the initial call, the issue of complete clinical information on the requisition is often raised. The theory is that if such information were provided, it would have caused the patient to be classified as "high risk " and allowed for a secondary review of the slide (which, it is argued, would have prevented the error).

The common risks to clinicians in these cases include:

- over-reliance on the negative Pap test results in the face of otherwise suspicious clinical events,
- failure to act upon abnormal Pap smear results (sometimes, but not always, in the context of suspicious clinical events) based upon a judgment that the results were not abnormal enough to warrant concern, and
- reliance upon imperfect and inconsistent patient compliance with regular follow up visits and timely reporting of clinically significant events such as abnormal bleeding.

Even in cases where the patient's attention to her own gynecologic health appears reasonably diligent, pitfalls abound in the form of taking appropriate interval histories, proper documentation of patient communications, documentation of communications to the patient, and undue reliance upon the imperfect Pap test. Additionally, failure to apply generally accepted follow up and treatment practices - including particularly, the guidelines for the management of women with cervical abnormalities adopted by the American College of Obstetrics and

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Gynecology (ACOG), and the American Society for Colposcopy and Cervical Pathology (ASCCP) - pose significant risk to clinicians. Many of these follow up algorithms require repeated and informed assessment of the patient's most recent and historical clinical presentation, as well as a solid understanding of cytopathology reporting protocols and definitions under the Bethesda System - a significant amount of data and decision points to process multiple times a day.

More subtle but increasingly prevalent areas of exposure for clinicians focus on their lack of familiarity with, failure to offer or reluctance to use, newer approved technologies and advancements which have been proven effective in increasing the specificity and sensitivity of cervical cancer screening.

[1]*This article is the first in a two part series. The next installment will be entitled "The Evolving Standard of Care and the Role of New Technologies in Risk Reduction."*

EXPERT'S CORNER

Endoscopic Ultrasound Guided Fine Needle Aspiration Biopsy of the Pancreas:
A Morphology Primer.
Part 1. Solid Masses.

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Massachusetts General Hospital, Boston, MA

Endoscopic ultrasound guided fine needle aspiration biopsy (EUS-FNAB) of the pancreas is increasing in popularity as the preferred method of investigating pancreatic masses and cysts owing to its improved resolution of small lesions (0.5 cm versus 1.0 cm for CT) and the ability to diagnose and stage patients during the same procedure. The technique is growing at an annual rate of approximately 25% (personal communication) and is quickly moving from academic centers into the community hospital. Although the diagnostic criteria of pancreatic lesions do not change with respect to the method used to sample them, the technique used to obtain the tissue can directly impact the overall cytological appearance of the lesion and thus the accuracy of interpretation. With respect to EUS-FNAB, the introduction of gastrointestinal (GI) contamination into the cytological specimen by the very nature of the technique produces a diagnostic challenge and pitfall for the cytopathologist. This morphological primer will cover the most common pancreatic lesions encountered on FNAB and will be divided into two parts. Part 1 in this edition of Focus will cover solid pancreatic mass lesions and Part 2 in the following issue will cover cysts of the pancreas. An emphasis will be placed on the recognition and distinction of GI contamination from lesional tissue.

Overview

The more commonly encountered solid mass lesions of the pancreas include ductal adenocarcinoma, expansive fibrosis in chronic pancreatitis, pancreatic endocrine neoplasm, acinar cell carcinoma, pancreatoblastoma, and metastatic neoplasms. Ninety percent of solid neoplasms represent ductal adenocarcinoma or one its variants. The clinical information and radiographic appearance of the mass should be integrated into the diagnostic process in the same way as an ancillary test. When combined with the cytological findings, clinical and radiological information can greatly assist in narrowing the differential diagnosis and thus enhance the diagnosis provided in the pathology report. Overall cellularity is directly related to the experience of the endoscopist and the composition of the neoplasm. The overall cellularity of the smears from EUS-FNAB is not as significant as in percutaneous biopsies because the presence of GI contamination unrelated to the neoplasm can make smears appear very cellular. Although sampling error is well recognized as the primary reason for false negative FNABs, understanding and recognizing the cytological features of the pancreatic lesions described herein and the distinction from GI contamination, will help to reduce the contribution of under interpretation to the false negative rate, and thus preclude a delay in the diagnosis and the need to perform additional diagnostic tests. The recognition of gastric and duodenal epithelial contamination is critical for the accurate interpretation of EUS-guided biopsies. Duodenal epithelium is recognized by the large, folded sheet-like arrangement of evenly spaced cells studded with goblet cells. A luminal edge of contiguous non-mucinous cytoplasm with a brush border is often present. Duodenal nuclei are generally uniformly small, round and regularly spaced in a group or sheet, and, except for the occasional goblet cell, the cytoplasm does not appear clear or vacuolated (Figure 1). Gastric epithelial cells may also occur as large sheets, but more commonly occur as smaller, flat monolayered sheets. Luminal edges may also be seen but are not as common as with duodenal epithelium and a brush border is absent. Gastric epithelium is predominantly non-mucinous. Foveolar cells, however, can display cytoplasmic mucin, but it is typically confined to the upper third of the cytoplasmic compartment forming a mucin-cup (Figure 2). Although extracellular mucin also can be a contaminant from the gastrointestinal tract, this component of contamination does not usually pose a diagnostic pitfall for the interpretation of solid mass lesions.

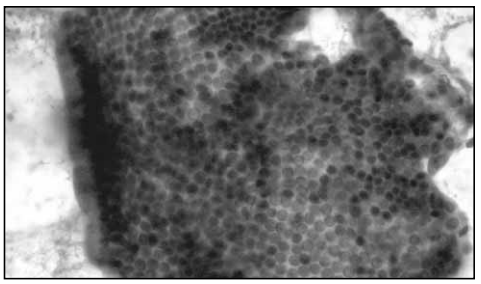

Figure 1.

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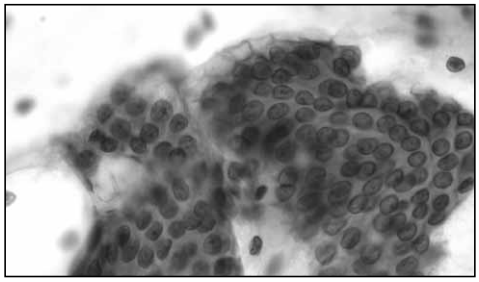

Figure 2.

Adenocarinoma versus Chronic Pancreatitis

Both ductal adenocarcinoma and chronic pancreatitis occur more commonly in the pancreatic head of men, with carcinoma occurring, on average, about two decades later than pancreatitis (50 versus 70 years, respectively). A history of alcohol abuse should raise one's threshold for a malignant diagnosis. Classic radiological images of chronic pancreatitis demonstrating irregular ductal dilatation often associated with stricture formation, obstruction and calcifications, is not the patient typically aspirated by EUS-FNAB. It is the patient with areas of expansive fibrosis within chronic pancreatitis mimicking a carcinoma that presents the diagnostic uncertainty by EUS, both pancreatitis and carcinoma appearing hypoechoic. On CT, carcinomas appear as poorly defined hypodense masses with central attenuation distorting the normal pancreatic lobulations and are often associated with an abrupt stricture in the main pancreatic duct. Within the pancreatic head, the characteristic dually dilated main pancreatic and bile ducts, the so called "double duct" sign, is a diagnostic clue. A loss of a tissue interface between the tumor and the large peri-pancreatic vessels (superior mesenteric or celiac axis) indicates invasion and stages the tumor as unresectable (pT4). The distinction between benign and malignant on FNAB smears is most challenging for well-differentiated neoplasms given the overt malignant features of most high-grade adenocarcinomas (Figure 3). For well-differentiated adenocarcinoma, overall cellular composition of the slide is important in distinguishing benign from malignant. Smears of carcinoma should be relatively pure with only ductal groups for adenocarcinoma. Smears containing acinar and endocrine cells should be interpreted with caution as this mixed cellular pattern is typical of pancreatitis. Similarly, the presence of granulation tissue and fibrous tissue fragments with inflammation are features associated with pancreatitis, and the cytological diagnosis of carcinoma in this setting is best restricted to high-grade carcinoma only. Background coagulative (not saponified fat) necrosis and intact single atypical cells are features that support a malignant diagnosis. The arrangement of the cells in groups and sheets is important in distinguishing benign from malignant. The architectural arrangement of carcinoma cells ranges from large crowded sheets to small three-dimensional clusters and balls of cells to single cells. Malignant nuclei are crowded, overlap, and have lost nuclear polarity or they display an uneven distribution in a sheet ("drunken honeycomb"; Figure 4). In contrast, benign nuclei maintain order, polarity, and a uniform distribution within the sheet or group. In addition, the nuclear chromatin in well-differentiated carcinoma often displays a pale nucleus owing to parachromatin clearing in contrast to the vesicular or even slightly coarse chromatin pattern in reactive ductal epithelium (Figure 5). Single intact cells are common in poorly differentiated carcinoma, but even the scant presence of intact individual atypical epithelial cells in well-differentiated carcinoma is significant and supports a malignant interpretation. Immunostains that support a malignant interpretation include positive cytoplasmic staining for monoclonal CEA, B72.3, CA 125, mesothelin and nuclear staining with p53 in more than 20% of nuclei. Loss of cytoplasmic and nuclear reactivity with Smad4 (dpc4) is also supportive of malignancy. Analysis of staining profiles is best on cellblock preparations of cellular samples and should be interpreted with caution on scantily cellular cellblock specimens and especially destained direct smears.

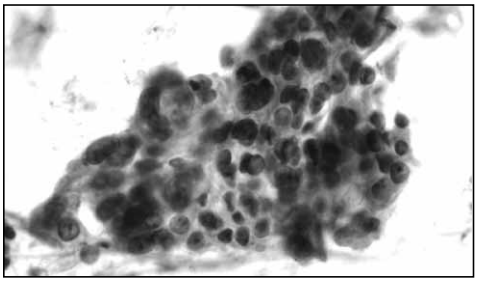

Figure 3.

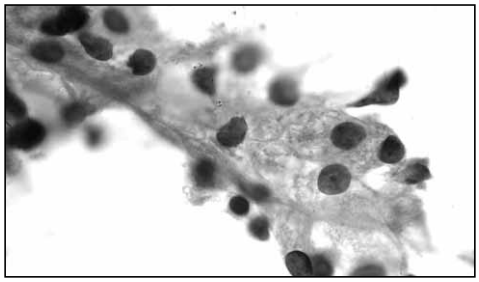

Figure 4.

Solid Cellular Neoplasms: Pancreatic Endocrine Neoplasm (PEN), Acinar Cell Carcinoma (ACC), Pancreatoblastoma (PBL) and Solid-Pseudopapillary Neoplasm (SPN)

Well-defined and well-circumscribed masses in an otherwise normal pancreas are likely solid cellular neoplasms. By EUS, they can be indistinguishable, but smaller (<3 cm), round masses are most likely to be a PEN whereas a large solid and cystic mass is more likely to be a SPN. All of these neoplasms occur in the pancreatic head and tail with equal frequency but the average patient age and sex can be helpful. SPN is 9 times more likely to occur in a female and ACC almost 4 times more likely to arise in a male. PBL and PEN occur relatively evenly in males and females. PBL, however, is most often a neoplasm of very young children (< 5 years) whereas ACC most commonly occurs in adults, and when ACC occurs in children, it is typically a teenager. PEN can occur at any age, the average patient around 50 years old. The tendency of these neoplasms to produce very cellular smears composed of relatively uniform polygonal epithelial cells makes them a challenge to distinguish from one another on cytology. Only the presence of papillary structures +/- myxoid stroma singles out an SPN. Squamoid corpuscles, the key diagnostic feature of PBL, is not readily appreciated on smears, and is a feature best recognized on cellblock preparations. Otherwise, the distinction between these similar appearing neoplasms requires close examination of the nuclear and cytoplasmic features of the neoplastic cells. The classic neuroendocrine nucleus with its coarse, stippled "salt-n-pepper" chromatin pattern is the key feature of PEN. Cells are also often plasmacytoid with dense eccentrically placed cytoplasm that is delicate and strips away from the nucleus easily. Nucleoli may be prominent (Figure 6A). An ACC is often suggested by the presence of round, stripped nuclei with prominent nucleoli (Figure 6B). ACC tumor cells, however, should not display a course stippled chromatin pattern like PEN and the cytoplasm of intact cells is coarsely granular, an appearance that may be muted on the standard cytology stains (H&E demonstrates the cytoplasmic granules the best). Acinar cell differentiation is the most common line of tumor cell differentiation and, thus, would appear cytologically

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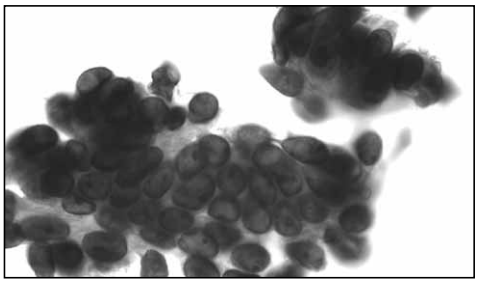

Figure 5.

identical to ACC without the recognition of the squamoid corpuscle for distinction. The nuclei of SPN are distinctive by the small round to oval shape with finely granular, evenly distributed chromatin and grooved or indented nuclear membranes. The cytoplasm is scant, nongranular and may contain a small perinuclear vacuole (Figure 6C) or hyaline globule. Immunostains can be helpful with neuroendocrine markers, chromogranin, synaptophysin and CD 56 supporting PEN, enzyme markers trypsin, chymotrypsin and alpha-1-anitchymotrypsin supporting ACC or PBL, and generally negative cytokeratin staining but positive staining with CD 10 and strong nuclear staining with B-catenin supporting SPN.

Primary versus Metastatic

The distinction between primary and metastatic adenocarcinoma requires clinical information and undoubtedly some immunohistochemical analysis. The majority of patients with pancreatic metastases have a history of an extra-pancreatic malignancy, so a good clinical history is therefore extremely helpful. A 60 year old man is the most common clinical demographic of both primary and metastatic malignancy. Radiological evidence of multiple solid parenchymal nodules favors a metastasis over a primary neoplasm, however, a solitary mass can be either. Renal cell carcinoma is particularly prone to metastasize to the pancreas as a solitary nodule, even decades after resection of the primary neoplasm. In general, however, metastases to the pancreas are less common than primary neoplasms and carcinoma is by far the most common metastatic malignancy. Common metastases include carcinomas of the lung, breast, stomach, colon, kidney, and ovary. Metastatic melanoma is also relatively common. The immunophenotype typical of these neoplasms is described elsewhere.

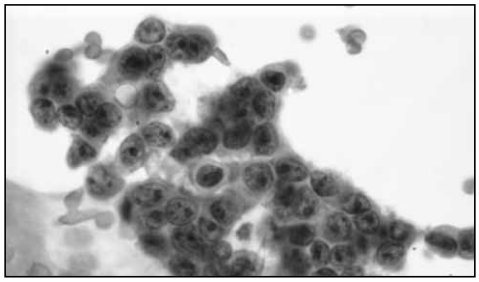

Figure 6A.

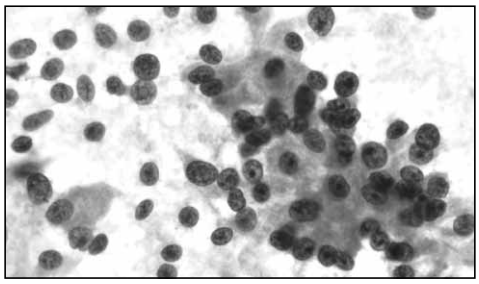

Figure 6B.

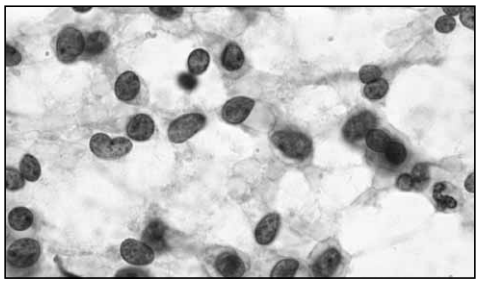

Figure 6C.

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Bulletin Board

Papanicolaou Society Committees and Task Forces

LC Tao Educator Award: The committee's charge is to select the best candidate for the Papanicolaou Society of Cytopathology Educator of the Year Award. This year, Carlos Bedrossian, MD, received the Educator of the Year Award at the 2006 USCAP, PSC meeting in Atlanta, GA. Claire Michael, Chair, clairemi@med.umich.edu Members: Kim Geisinger, Beatrix Cochand Priollet, Susan Rollins, Rosa Davila.

Yolanda Oertel Award: The committee's charge is to select the best candidate for the Papanicolaou Society of Cytopathology Interventional Cytopathologist Award. This year, Sixten Franzen, MD, received the Interventional Cytopathologist award at the 2006 USCAP, PSC meeting in Atlanta, GA. Yolanda Oertel, Chair, Yolanda.C.Oertel@Medstar.net Members: Andrea Abati, Michael Stanley, Carlos Bedrossian, Lucio Palombini.

Budget and Finance: The committee prepares a budget for the ensuing year in concert with the treasurer, to recommend a change in membership dues if and when necessary, and to recommend ways to increase the financial stability of the PSC. The 2006 annual treasurer's report will be published in the fall issue of the newsletter. Martha Bishop Pitman, Chair, mpitman@partners.org Members: Mathew Zarka, R Tambouret, Michael Cohen, Wiliam Faquin, Ursula Bedrossian (ex officio).

Constitution and Bylaws: The Constitution and ByLaws Committee updates the Constitution and ByLaws as necessary. Steve Raab, Chair, raabss@upmc.edu Members: Executive Board and Officers.

Program Development: The committee's goals are to raise funds to support the various programs and activities of the PSC. Steve Raab, Chair, raabss@upmc.edu

Publication Committee: The Publication Committee prepares and publishes the biannual PSC newsletter "Focus". Focus is published online, and also, is mailed to all PSC members through a generous donation from Cytyc Corporation. The newsletter aims to disseminate information related to the past and upcoming PSC events, society related news, new developments and timely topics associated with the practice of cytopathology. Aylin Simsir, Chair, aylin.simsir@med.nyu.edu Members: Joan Cangiarella, Oscar Lin, Isam-Eldin Eltoum, Andrew Fischer.

Scientific Program: The committee joined forces with the **Standards of Practice Guidelines Committee** and developed what proved to be an exciting and timely program for the 2006 Atlanta USCAP annual meeting of the Society on aspiration cytology of the thyroid gland. The evening meeting was attended at record numbers and received rave reviews. Lester Layfield, Chair, Layfield-aruplab.com Members: Martha Pitman, Maureen Zakowski, Harvey Cramer, Tarik Elsheik, Yolanda Oertel.

Education & Training: The committee continues to publish interesting cases on the PSC website. This year the committee has published six cases on the PSC web site. The contributors included: Drs. Amanda Ashton Sager and Alaa Afify from the Department of Pathology, University of California, Davis Medical Center, Sacramento CA, Dr Oscar Lin from the Department of Pathology, Memorial Sloan Kettering Cancer Center, New York, NY, Drs. Marilyn M. Bui and Walid Khalbuss from the Department of Pathology, University of Florida Health Science Center, Jacksonville, FL, Dr. Larry Fowler from the Department of Pathology, University of Texas Health Science Center at San Antonio, San Antonio TX, Dr. David Chhieng from the Department of Pathology, University of Alabama, Birmingham, AL. The committee has been in talks with the Cambridge Publishers about the possibility of publishing a series of cytopathology books under the auspices of the PSC. The proposal was presented to the PSC Executive Board for consideration during the 2006 USCAP meeting. David Chhieng, Chair, dchhieng@path.uab.edu Members: Alaa Afify, Joan Cangairella, Oscar Lin, Larry Fowler, Syed Ali.

PCS Website: The committee has been working to update the PSC webpage including the application of several new features that may be beneficial to PSC members. ***The following additions were made to PSC website in 2005:*** A password protected directory of PSC members, published guidelines from the Papanicolaou Society of Cytopathology (courtesy of Diagnostic Cytopathology), link to cytology stuff.com. (an educational service provided to cytotechnologists, pathologists and other professionals by Cytyc Corp., Boxborough, MA), link to *CytoJournal*. ***Planned committee activities for 2006 are:*** installation of a library of cytopathology image, expanding the "Links" to include other scientific journals, such as, Cancer Cytopathology and other pertinent websites, establishment of a "Collaboration Corner" which would allow members to collaborate on research projects. Rana Hoda, Chair, hodars@musc.edu Members: Prabodh Gupta, Ricardo Bardales, Vinod Shidham, Mohammad Aktar, Volker Schneider, James Madory.

Government Relations: The Government Relations Task Force monitors legislative and regulatory issues, and proposes areas for advocacy efforts by the membership. The Task Force communicates, and partners with other medical and cytopathology organizations including the CAP, ASC, and AMA, on topics important to cytopathology. This year, the Government Relations Task Force has been monitoring mainly the cytology proficiency testing. The task force published a detailed article in the October 2005 issue of Focus entitled "Update on Cytology Proficiency Testing", and also posted another update on the PSC list-serve in November which included information on how members could be active in advocacy and lobbying efforts related to PT. Diane Davey, Chair, e-mail: ddavey@uky.edu Members: Anna O'Grady Berry, George Birdsong, Dina Mody, R Marshall Austin.

Research: The purpose of the committee is to encourage quality research and exchange of ideas relevant to Cytopathology among pathologists-in-training. Its main task is to evaluate abstracts for the PSC Research Awards. For the PSC Research Awards, members of the research

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committee review cytopathology abstracts accepted for presentation at the USCAP annual meeting. Abstracts accepted for the USCAP Stowell-Orbison Award are automatically entered for the PSC Research Awards. All other cytopathology abstracts are entered if an application form is submitted to the chair of the research committee. Briefly, during the selection process the eligible abstracts are rendered anonymous by the chair of the research committee and scored by committee members based on novelty of idea, scientific and/or practical value and for the effort put in the study by the author. For details pertaining to the application and selection process please refer to the society website. Armando Filie, Chair, afilie@mail.nih.gov Members: Sue Ellen Martin, Hormoz Ehya, Robert Pu, Jan Silverman.

International Relations: The function of this committee is the interchange of ideas and information between members and committees of various cytology organizations at the international level. The committee facilitates joint sessions among these organizations and assists PSC in the recruitment of prospective members. Carlos Bedrossian, Chair, carlos@bedrossians.com Members: Rana Hoda.

Nominating Committee: It is the charge of the nominating committee to produce a slate of nominees for all elections for the PSC. Kim Geisinger, Chair, kgeis@wfubmc.edu Members: Mary Sidawy, Carlos Bedrossian.

Standards of Practice Guidelines : The charge of this committee for 2005-2006 is to formulate a set of recommendations/guidelines for thyroid fine-needle aspiration (FNA). This is being accomplished by forming various subcommittees to tackle different aspects of thyroid FNA (listed below). Each subcommittee presented their recommendations at the 2006 Papanicolaou Society Evening Session at annual USCAP meeting in Atlanta. After the meeting all recommendations/guidelines will be discussed and the final consensus will be published in Diagnostic Cytopathology.

Subcommittees:

1. Indications for FNA and technique (Pitman and Baloch)
2. Adequacy assessment and adequacy criteria (Oertel and Bourtsos)
3. Diagnostic terminology and criteria (Tarik, Faquin, Logani, Zakowski)
4. Report format (Pitman, Cramer, Tarik, Layfield)
5. Ancillary studies (Clark, Baloch, Zakowski)

Zubair Baloch, Chair, baloch@mail.med.upenn.edu
Members: Douglas Clark, William Faquin, Tarik Elsheik, Sanjay Logani

Membership: The charge of the Membership Committee is to increase membership with a particular focus on recruiting junior members. Gladwyn Leiman, Chair, Gladwyn.Leiman@vtmednet.org Members: Euphemia McGoogan, Andrew Field, Colleeen Wright, David Chhieng.

International Scientific Programs : This year, along with the International Relations Committee, the Scientific Programs Committee prepared the Annual Afternoon Scientific Session at the 2006 USCAP PSC Meeting in Atlanta. Moderated by Dr. Suba, the topic this year was "cytologic screening for cancer in the real world: successes, failures and cultural distractions". Experts from around the world shared their experiences in esophageal cancer screening in China (Dr. Sandy Dawson), and cervical cancer screening in rural Japan (Dr. Tadao Kobayashi), Greece (Dr. Elena Koutselini), Kenya (Dr. Mark Titus), and Mexico (Dr. Matt Zarka). Eric Suba, Chair, Eric.Suba@kp.org Members: David Kaminski, M. Duggan.