Outpatient Cytopathology® center

TOPICS IN CLINICAL FNA

Aspiration Biopsy Cytology October 2004

BREAST MASS – WHAT SHOULD I DO?

Most patients (male or female) who present with a breast mass are concerned that they may have breast cancer. Traditional management of breast masses includes:

- Watching the mass for a month and seeing if it decreases in size after the menstrual cycle (if applicable).
- Mammogram and/or ultrasound.
- Surgical excision.

Another approach to the workup of a breast mass that is of *concern to either the patient or clinician* is to refer the patient for a fine needle aspiration biopsy (FNA). FNA biopsy of palpable masses has been recommended by the National Cancer Institute (NCI) as an appropriate *first line procedure* for the evaluation of palpable breast masses.

FNA biopsy is an excellent first line procedure because it gives an objective cytologic diagnosis. Mammograms and ultrasounds often only offer a subjective impression. Imaging studies categorize a lesion as benign appearing, indeterminate or suspicious, but cannot determine the pathology of the mass. Also, patients can present with a mass of palpable concern that is not visualized by ultrasound or mammogram. Imaging procedures are complimentary to FNA biopsy, but should not be used as the only diagnostic test for evaluation. FNA biopsy of masses can also diagnose malignancy in the absence of imaging abnormalities.

If FNA biopsy is used as the initial diagnostic test for the evaluation of palpable breast masses, many patients can be spared open biopsies. Studies over the years have shown that approximately 85% of patients that may have been referred for surgical biopsy could have been triaged to clinical follow-up and avoided surgery, based on the FNA biopsy results.

Breast Density

Breast parenchymal density depends on the ratio of connective tissue and glandular tissue in the breast. In general, younger women have denser breast tissue than older women. Increased parenchymal density makes it more difficult to detect breast cancers mammographically. The cancer density can easily blend into the surrounding dense breast tissue. Thus, it is not visualized on the mammogram.

Women with dense breast tissue can be at an increased risk for breast cancer. A possible explanation is that there is more glandular tissue in a dense breast and therefore more cells with the potential to transform into cancer cells. However, the explanation may be more complicated.

Fine needle aspiration biopsy of women with dense breast tissue, i.e. young patients and women on hormone replacement therapy, plays a very important role in the evaluation of breast masses, since these women often have no mammographic evidence of breast disease.

PIAA Breast Study

The 1995 Physician Insurers Association of America (PIAA) Breast Cancer Study was implemented to investigate the circumstances surrounding the high frequency and severity of malpractice claims arising from breast cancer submitted to PIAA member companies. The data revealed that malignant neoplasms of the female breast continue to be the condition for which a patient frequently files a medical malpractice claim and that breast cancer is an extremely expensive condition in terms of indemnity dollars. The 1995 Breast Cancer Study included only closed claims involving the failure or delay in the diagnosis of breast cancer in which an indemnity payment was made. The major findings of the study were:

The most common reason given for a delay in diagnosis was the failure of the physician to be impressed by the physical findings (35%). Other reasons were physician failure to follow-up with the patient in a timely manner (31%), negative mammogram report (25.8%), a misread mammogram (22.7%), failure to do a proper biopsy (22.7%), and a delay or failure to request a consult (15.5%).

More than 60% of patients in the study were under the age of 50 and these claims accounted for over 71% of the total reported paid indemnity. More than 30% of the claimants were under the age of 40 and these claims had 37% of the total reported indemnity.

Radiologists were the most frequently claimed specialist in the study (24%), followed by Ob-Gyn (23%) and family

practice (17%). The number of claimants reporting a positive or negative family history made no difference in claim frequency or average indemnity payment.

In most cases, the patient found the lesion (60% of all cases). It was suggested by the report that the physician should order follow-up studies in any cases where a patient reports a symptom that could be even remotely related to carcinoma.

A mass with no pain was reported in almost 50% of the cases where the presenting symptom was recorded. Reports of pain and tenderness, with or without a mass, were reported in more than 25% of cases. This finding is significant, as pain is not commonly believed to be characteristic of breast cancer.

In almost 50% of cases, the mammogram results were reported as negative or equivocal, when, in fact, a lesion was present. False negatives and equivocal results appear to occur more frequently in the females under 40 years of age. Mammography cannot be relied on as the only tool for diagnosing breast cancer. The average delay in the diagnosis was 14 months.

NCI Bethesda Breast Conference

On September 9 - 10, 1996, a National Cancer Institute sponsored conference was held in Bethesda, Maryland about the diagnostic work-up of palpable breast masses. Representatives of the American Society of Cytopathology, American College of Radiology, American College of Obstetricians and Gynecologists, Society of Surgical Oncology, American Academy of Family Physicians, College of American Pathologists, American Cancer Society, and American College of Surgeons were present.

The conference concluded that the following are indications for FNA biopsy on palpable breast lesions.

- Sufficiently defined palpable breast masses of clinical or patient concern should be aspirated regardless of imaging findings where experienced FNA services are available.

- Masses that can be clinically explained by normal anatomy and physiology can be observed over the course of two menstrual cycles, especially in young women. Any persistent or suspicious mass (asymmetry, fixed, not round, hard) or masses in patients with increased family risk factors should be biopsied regardless of the imaging findings.

The Triple Test

At the Outpatient Cytopathology Center, we use the "triple test" approach for the evaluation of palpable breast lesions. Triple test refers to the combined findings on physical examination, mammography, and fine needle aspiration biopsy. When all three parameters are concordant, then the false negative rate of fine needle aspiration biopsy of palpable masses by experienced physicians is 0.4-0.7%.

If there is discordance between the physical examination, mammographic findings, or fine needle aspiration results, then additional testing is needed to attempt to resolve the discrepancy. The false negative of FNA with the triple test than that of the "gold standard" of frozen section (0.3-1.7%) or excisional biopsy (0.5-2%).

Thurfiell, E. Breast Density and the Risk of Breast Cancer, *New England Journal of Medicine* 2002;347 (12):866.

The Uniform Approach to Breast Fine Needle Aspiration Biopsy. A Synopsis. *Acta Cyologica*.

Abatti, A. To Count of Not to Count. A review of the issue of adequacy in breast FNA. *Diagnostic Cytopathology* 21(2), 1999, 142-147.

PIAA Breast Cancer Study, June 1995

Company Profile

OUTPATIENT CYTOPATHOLOGY CENTER (OCC) is an independent pathology practice that specializes in performing and interpreting fine needle aspiration biopsy specimens. OCC is accredited by the College of American Pathologists. The practice was established in 1991 in Johnson City, Tennessee. Patients may be referred for aspiration biopsy of most palpable masses as well as for aspiration of non-palpable breast and thyroid masses that can be visualized by ultrasound. OCC is a participating provider with most insurance plans. Our referral area includes patients from Virginia, West Virginia, North Carolina, South Carolina and Georgia.

Dr. Rollins

SUSAN D. ROLLINS, M.D., F.I.A.C. is Board Certified by the American Board of Pathology in Cytopathology, and in Anatomic and Clinical Pathology. Additionally, in 1994 she was inducted as a Fellow in the International Academy of Cytology. She began her training under G. Barry Schumann, M.D. at the University of Utah School of Medicine, subsequently completed a fellowship in Cytopathology under Carlos Bedrossian, M.D. at St. Louis University School of Medicine, and has completed a fellowship in Clinical Cytopathology under Torsten Lowhagen, M.D. at the Karolinska Hospital in Stockholm, Sweden. The author of numerous articles in the field of cytopathology, Dr. Rollins also has served as a faculty member for cytopathology courses taught on a national level.

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JANET F. STASTNY, D.O. is Board Certified by the American Board of Pathology in Anatomic Pathology and has specialty boards in Cytopathology. She completed a pathology residency at the University of Cincinnati and subsequently a one-year fellowship in cytopathology and surgical pathology at the Virginia Commonwealth University / Medical College of Virginia. She was on the faculty at the University for 7 years specializing in gynecologic pathology and cytopathology. She has written numerous articles in the filed of cytopathology and gynecologic pathology and has taught cytopathology courses at national meetings. She is currently involved on national committees dealing with current issues concerning the practice of cytology.