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# Private Practice Pathology, Breast Care, and Economics

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When breast problems arise, most patients in this country are cared for in their hometown communities by physicians in private practice. Regardless of the setting, however, the goal of providing patients with the highest quality and most compassionate care must be foremost. In modern breast centers, a trio of physicians serve as the first team of consultants to assist primary care providers and their patients through the maze and uncertainties related to detection, diagnosis, and treatment of new breast abnormalities. This trio consists of the radiologist, surgeon, and pathologist. The critical and pivotal role of pathologists and their workload in breast disease is often underappreciated by administrators and under-reimbursed by payers. Despite these realities, the private practice of pathology can be rewarding and gratifying for those who commit to creating a work ethic based on best practices, meticulous attention to detail, and effective teamwork.

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North Houston Pathology Associates is affiliated with Houston Northwest Medical Center located in the northwest of greater Houston. This hospital initiated development of a breast center before 1993, and those early beginnings evolved into a comprehensive effort that currently delivers exceptional breast care to women in the immediate service area and beyond. Our pathology group learned about the first stereotactic core biopsy instrument to be installed in our part of town that year through a brochure the hospital distributed. With some restrained amusement, we informed the newly developing administrative team that they had forgotten to include pathology breast services in the announcement. That unintended oversight tells the story that pathology services are often underappreciated and overlooked. The role of pathology is critically important in patient care, especially in comprehensive breast centers.

## Building a Foundation Through Team Work and Education

Our pathology group's participation in the breast care services at Houston Northwest Medical Center is very active and

with one goal—to deliver the best breast care for women in the community. As we formed the breast team, a surgeon, mammographer, and this pathologist became thoroughly infected with what we call the “Tabár virus.” Our threesome attended several courses taught by Professor László Tabár, MD, of Falun, Sweden.<sup>1,2</sup> During one of Dr. Tabár's interdisciplinary conferences, I had a revelation of understanding, an epiphany if you will, about new dimensions of breast pathology that I had never seen or understood previously. This new understanding inspired our group to pursue higher levels of quality in our private practice. We also realized that we couldn't create this breast center project without other related specialists sharing the vision and participation. Eventually, this whole effort culminated in early 1996 with the beginning of weekly, prospective patient-centered breast conferences. This interdisciplinary meeting is attended by surgeons, mammographers, pathologists, radiation and medical oncologists, plastic surgeons, and allied health personnel from the breast center and pathology department. Clearly, continuous learning and multidisciplinary care laid the foundation for our comprehensive breast center.

## The Weekly Breast Conference

Probably the most powerful and continuing educational process that a pathologist participates in is the weekly breast conference. At this gathering of committed breast specialists, the patient's mammographic images are presented followed by pathology images and abstracted pathology reports, followed by a discussion of each woman's clinical presentation,

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**Table 1 National Quality Measures for Breast Centers Program**

The National Quality Measures for Breast Centers Program (NQMBC) is a free, interactive Internet model for breast centers to track and measure quality performance for more than 30 individual quality indicators.<sup>4</sup> The NQMBC Program identifies quality care measures and provides immediate access to information that allows participating breast centers to compare performance with one or all other centers across the United States. The NQMBC Program is a result of the National Consortium of Breast Centers' (NCBC) commitment to increase the quality of breast health care provided by interdisciplinary professionals. Since the sponsoring organization, the NCBC, has more than 1000 breast center members of all types and sizes, the organization chose to compile a secure database from which all breast center data can be confidentially collected and compared.

her unique wishes and choices, and a discussion of appropriate therapeutic and research options. During these presentations, our pathology team learns the significance of how seriously our reports impact the direct care and quality of life of our patients. For example, we have learned how the wording of our diagnostic reports can be misunderstood; how critical tumor measurements may "tip the scale" to force chemotherapy when 1 mm less in measurement would not do so; or how critically important the comprehensive margin measurements are in a lumpectomy specimen.

## Developing Best Practices in Private Practice Pathology

Several authors, including national quality improvement and cancer organizations, have defined quality metrics and standards of care for best practices related to breast pathology.<sup>3-9</sup> In actual practice, whether private practice, academic, or otherwise, committed pathology groups can implement these programs and guidelines to achieve and sustain reliable results for any breast specimen or other component of care related to pathology. Organizations such as the National Consortium of Breast Centers have elevated quality to a new level of awareness and recognition by peers through the introduction of a rigorous self-assessment program for breast centers. A description of the program is seen in Table 1, and the hospital's certificate from the National Consortium of Breast Center's quality program is shown in Figure 1. The specific pathology measures reflecting best practices related to timeliness of care and completeness of the report are listed in Table 2.

## Core Biopsy

Typically the first specimen that comes to anatomic pathology is the core biopsy. The cores are handled as biopsies, and these specimens receive priority with next-day processing. The usual case has next-day processing and reporting, meaning that the mammographer and primary physician will know the final diagnosis the day after the procedure. We use an interdepartmental worksheet (Fig. 2) to facilitate radiologic-pathologic correlation for each core biopsy specimen re-



**Figure 1** Certified quality breast center.

**Table 2** Quality Measures for Pathology: National Consortium of Breast Centers<sup>4</sup>

National Quality Measures for Breast Centers: Pathology
Pathology timeliness of care—Time between initial breast biopsy (excluding open surgical) and pathology results
Pathology timeliness of care—Time between open (incisional/excisional) initial breast biopsy and pathology results
Pathology timeliness of care—Time between initial breast cancer surgery and pathology results
Pathology report completeness—tumor size
Pathology report completeness—margin analysis
Pathology report completeness—margins identified
Pathology report completeness—lymph node analysis
Pathology report completeness—specimen sampling adequacy
Pathology report completeness—ER and PR receptor measurement for invasive disease
Pathology report completeness—ER and PR receptor measurement for in situ disease

Regardless of the referral source. This integrated form is used to enhance communication and interpretation between the radiologist and pathologist; it is completed by the radiologist and accompanies the specimen to the pathology laboratory. After the interpreting pathologist finishes the pathology section, the worksheet is returned to breast imaging where the

**Table 3** Medicare Allowable Reimbursement Charges

Procedure	Professional	Technical
Biopsy	\$36.95	\$67.19
Lumpectomy	\$79.28	\$125.38
Mastectomy	\$133.88	\$169.98
ER/PR	\$54.64	\$62.38
Her2neu	\$60.17	\$30.59

Courtesy of Medical Billing Services, a Division of Orion HealthCorp (Houston, TX), December 2008.

interpreting radiologist determines concordance. Our anatomic pathology laboratory serves an affiliated breast center within the hospital as well as several breast centers beyond the hospital campus. We also receive core biopsies from private physicians' offices.

Each biopsy with malignant elements has estrogen (ER) and progesterone receptor (PR) analysis performed regardless of whether the disease is in situ or invasive. The invasive lesions also require Her2neu FISH testing. Our group performs ER and PR in-house and sends the Her2neu to a reference laboratory. The charges for this biopsy include hospital and professional components. The Medicare allowable reimbursable charge is shown in Table 3.

### Lumpectomy

The role of the pathologist is also critically important when breast conservation surgery results in a lumpectomy specimen.<sup>10</sup>

This procedure is a limited resection of breast tissue taken out of the breast, leaving enough breast tissue to conserve the breast conformation that is acceptable to the patient. When the lumpectomy specimen is removed, often shaped somewhat like an egg, it leaves behind breast tissue on all sides except possibly the deep margin against the chest. With all of these remaining margins left in the breast, careful analysis of all specimen margins must be performed by the pathologist. To do otherwise would potentially leave the patient with some level of malignant tissue in the surgical margin, which is unacceptable. So, how can a pathologist assure the surgeon and woman that "clean" margins have been accomplished if you don't look at all the tissue margins of the lumpectomy specimen?

Our approach to lumpectomies is to cut the entire specimen as long as it is within certain measurements. This means putting in all the excised tissue after it has been inked to mark 6 sides: superior and inferior, anterior and deep, medial and lateral. As long as the specimen is 6 cm or less in its longest dimension, it will be completely sectioned and submitted for histologic analysis. Such sectioning will result in 60-75 histologic slides. This approach allows every margin in sequence (sectioning of all slices) to be analyzed microscopically. There is no doubt that this is the most time-consuming and exhaustive approach, but it represents the best practice for women who desire breast conservation. The charge for this lumpectomy includes hospital and professional components.

**Houston Northwest Hospital  
Breast Center**

*Houston Northwest Radiology Associates*      *North Houston Pathology Associates, L.L.P.*

Patient Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Physician: \_\_\_\_\_ Hospital number \_\_\_\_\_

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**RADIOLOGY SECTION: Patient problem**      Radiology number \_\_\_\_\_

<input type="checkbox"/> post surgical changes <input type="checkbox"/> distinct mammographic nodule, or <input type="checkbox"/> multiple nodules present <input type="checkbox"/> highly suspicious <input type="checkbox"/> indeterminate <input type="checkbox"/> probably benign <b>Lesion size</b> <input type="checkbox"/> clustered calcifications <input type="checkbox"/> highly suspicious <input type="checkbox"/> indeterminate <input type="checkbox"/> probably benign <input type="checkbox"/> non-specific tissue asymmetry <input type="checkbox"/> implants present	<input type="checkbox"/> Stereotactic Bx <input type="checkbox"/> Ultrasound Bx <input type="checkbox"/> FNA <input type="checkbox"/> Right breast <input type="checkbox"/> Left breast Quadrants: <input type="checkbox"/> upper outer <input type="checkbox"/> upper inner <input type="checkbox"/> central <input type="checkbox"/> lower outer <input type="checkbox"/> lower inner Palpable? <input type="checkbox"/> Yes <input type="checkbox"/> No Number of Cores _____ Other comments: _____ _____ _____
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Radiologist's name \_\_\_\_\_

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**PATHOLOGY SECTION:**      Pathology number \_\_\_\_\_

Pathology final diagnosis  
 benign  
 proliferative and worrisome  
 malignant

Other comments: \_\_\_\_\_  
 Pathologist's name \_\_\_\_\_

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**RADIOLOGY: Resolution**  
 YES: Concordance with mammography, pathology and clinical exam?  
 NO: Discordance with mammography, pathology and clinical exam?  
 Resolution \_\_\_\_\_

**CORE BREAST BIOPSY  
DATA SHEET**

**Figure 2** Interdepartmental radiology/pathology worksheet.



**Figure 3** Hard-boiled egg simulates inked lumpectomy specimen. Careful sectioning and preparation of a lumpectomy specimen is similar to slicing a hard-boiled egg. A “slice” is a through-and-through cut of the whole lumpectomy specimen, which should be inked on all 6 sides for orientation. Slices are cut in sequence perpendicular to the long axis of the specimen.

The Medicare allowable reimbursable charge is shown in Table 3.

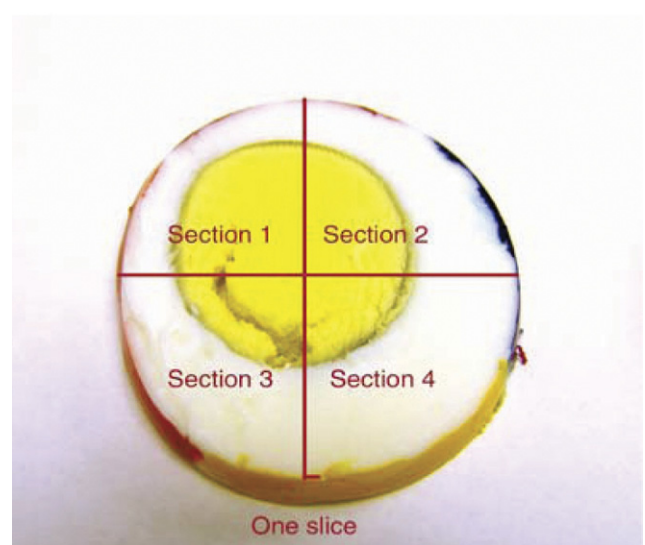
Some of the “heavy lifting” for the pathologist comes with margin analysis and tumor measurements. When a pathologist receives the histology slides for a lumpectomy, not only does he/she have to examine all the slides, but there are also careful measurements to be made. First, we have learned that the most exact tumor measurement must be determined. This is accomplished by finding how many sequential slices contain the malignancy. The thickness of each submitted tissue slice should be measured. For the purpose of illustration, as seen in Figures 3 and 4, this process can be compared to inking and slicing a hard-boiled egg. By mapping out each slice and section submitted, the pathologist determines the maximum dimension of the tumor [duct carcinoma in situ (DCIS) or invasive tumor] by multiplying the number of sequential slices that are positive for tumor times the average thickness of the slices. As an additional measurement, we try to reconstruct the cross-sectional size of the malignant process so that we can provide three measurements (length, width, depth) in the final pathology report. The rest of the “heavy lifting” is related to margin measurements. Each histologic slide that has either DCIS or an invasive lesion must be measured for closeness to one of the six margins identified by the application of colored ink. Over the years, this pathologist has developed a comprehensive spreadsheet to identify each slide that contains DCIS, an invasive lesion, or both. Each slide is analyzed and the distance of the DCIS or invasive lesion to each margin is measured and documented. After each slide’s margin is measured and tabulated, the closest distance to each margin (anterior, posterior, superficial, deep, medial, and lateral) is identified, and this information is placed in the final surgical report under the heading of “mar-

gins.” This margin closeness is reported separately for DCIS and the invasive component, depending on what is present in the specimen.

The real dilemma occurs when a lumpectomy is larger than 6 cm in maximum dimension. The technical costs become prohibitive with huge lumpectomies. The pathologist’s challenge is how to submit sections that optimize our analysis. This problem becomes acute when dealing with DCIS because we want to determine its extent and assign the Van Nuys index classification; however, we must do so prudently. We often ask for help from our mammography colleagues to identify specific areas of tissue for sectioning. Even with our attempts to be highly selective in tissue sampling in these larger lumpectomies, we may still end up with 120-140 histology slides for processing and analysis.

## Economic Implications

Suffice it to say, these lumpectomies are economic loss leaders for anatomic pathology. Yet to do less analysis would preclude a thorough examination of the specimen we have been given by the breast surgeon. Our breast team has come to expect a complete examination of lumpectomy specimen and to do less would not be acceptable. The economic impact of these studies has been addressed by several experts in the White Paper sponsored by the Susan G. Komen Foundation of the Cure.<sup>5</sup> This paper describes how, under the current insurance payment schedule, it would be difficult for some anatomic pathology laboratories to deliver this level of service. We agree that the payments for pathology service of lumpectomy specimens are woefully low. At our hospital, the



**Figure 4** Slice of hard-boiled egg simulates use of multicolored ink to identify each different margin. A “section” is the actual piece of representative tissue taken for histology sectioning. Using the sliced hard-boiled egg example, one slice could be cut into 4 sections (pie-shaped). Each individual section is then submitted separately and processed to make 4 histology slides. Multicolored inked margins around the entire circumference ensure complete analysis and documentation of each different margin.

volumes of other, nonbreast specimens offset the costs associated with our comprehensive lumpectomy preparation and interpretation.

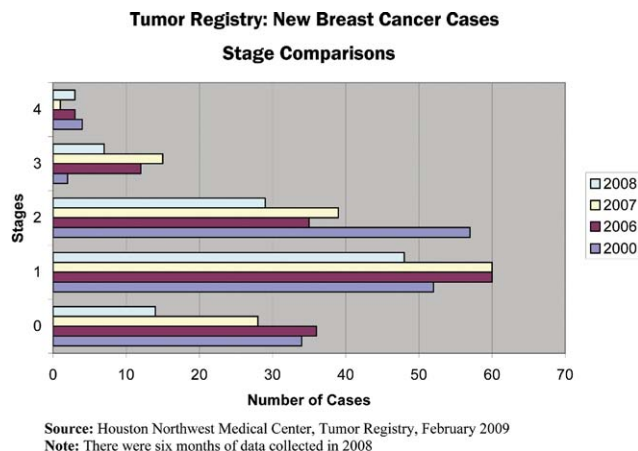
## Mastectomy

In general, the pathology analyses of mastectomy specimens are much more straightforward. There is a more routine pattern of tissue selection in a typical mastectomy usually comprising about 12-20 sections and resulting histology slides. Thus, it is clear that the sectioning of a mastectomy specimen (versus lumpectomy) results in far fewer histology slides. That is because far fewer slides are taken by protocol and the margin analysis is limited to the deep margin closest to the tumor. Sections may increase when dealing with DCIS, however. In this instance, we try to document the extent of the disease to “prove-up” and validate that the reason for the mastectomy versus lumpectomy was the extensive presence of the DCIS. Here is an interesting reimbursement fact: we typically perform much less analytical effort on a mastectomy, yet the payments are substantially better. This economic reality is also reinforced in the Komen White Paper.<sup>5</sup> The charges for this mastectomy include hospital and professional components. The Medicare allowable reimbursable charge is shown in Table 3.

There are times when a lumpectomy is followed by a completion mastectomy. This unfortunate second surgery is often because margins are too close or involved and/or the amount of remaining breast tissue will not justify re-excision of the compromised margins. As mammography and other breast imaging technology and interpretive skills advance, we hope to avoid the underestimation of malignant breast disease's extent so that completion mastectomy becomes less common. At this time, it is one of the downsides of performing lumpectomy. When completion mastectomy occurs, additional expenses are incurred due to the second operation, including additional processing of pathology material. Mastectomy specimens tend to be easier to examine because usually there are routines for submitting sections. When lumpectomy margins are involved or the extent of disease is underestimated, margin re-excision or mastectomy almost automatically follows. We deal with these dilemmas weekly and work closely with our surgical colleagues to ensure accuracy and optimal pathology analysis.

## How Can Insurance Companies Reward Best Practices and Quality Breast Care?

When we originally got underway with our breast program, we sat down with the hospital administration to discuss and plan for anticipated interest from health care insurance companies that were seeking out organ-specific treatments, such as breast cancer. Surprisingly, we found no real interest in the continuum of care. All the insurance data collection was episodic, and the companies apparently had no way of putting



**Figure 5** Tumor Registry: New breast cancer cases.

together what the breast care costs entailed from the first encounter until treatment was completed.

Today, we often read about new health care interest in containing medical costs, but no insurance company has ever approached us for a comprehensive package of services, even after being “in the market place” for almost 15 years.

Over the years, our community colleagues have come to trust us and we have benefited from a regional reputation and increasing referral base. Our private practice pathology group is proud of the percentage of new patients with early-stage disease detected in our community and tracked by our cancer registry (Fig. 5). Because we are also recognized by patients and doctors as a reference laboratory for both benign and malignant disease, the percentage of internal and external specimens that we analyze is significant but not lucrative. Hopefully, payers will begin to notice these natural trends and compare outcomes between provider groups. Indeed, payer perspectives may be changing as described in two recent articles that address health care reform in general and breast care in particular. Experts from the Commonwealth Fund suggest that fundamental provider payment reform needs to include broader incentives to reward more efficient and high-quality care over time.<sup>11</sup> I agree. Tisnado and co-workers address the variety of structural influences of breast cancer care delivery settings and managed care.<sup>12</sup> These authors suggest that “high proportions of patients with managed care coverage highlight the importance of learning what is inside the largely black box of managed care, and how the associated structural features and reimbursement systems impact processes of care and patient outcomes.” Furthermore, they suggest more focused research to better understand the structure of care and how it influences the delivery of services and patient outcomes. They also propose identifying centers of excellent care that should be modeled and describe other areas where specific components of care can be improved. Perhaps the development and recognition of best practices and nationally recognized quality metrics endorsed by the Ambulatory Quality Alliance and others<sup>3-6,13-15</sup> will finally influence payers to appropriately reward the time-consuming and meticulous attention to mammography-pa-

thology correlation, specimen handling, treatment planning conferences, and other self-initiated activities that promote quality of care and best practices in all settings.

Our group has committed hours of extra time to serve the women who come to our colleagues for breast care. Here are some immediate examples for rewarding the truly committed pathology team:

- We take extra care with each core biopsy, making sure it is processed in the timeliest fashion, and endeavor to have results available the next working day. Some of our surgeons like to personally call their patients with the breast pathology results, and we make every effort to have our typed reports available soon after the final diagnosis is rendered, so women don't have to wait over the weekend for a biopsy performed on Thursday, finished on Friday, but not delivered to the primary care physician until later.
- When a mastectomy specimen doesn't show the extent of the DCIS that was detected on mammogram, we will personally take the specimen to the interpreting radiologists and ask their help in finding the areas most likely to harbor the DCIS. This procedure requires the mastectomy to be sliced "bread-loaf fashion," and this serial sectioning technique is followed up with a special mammogram of the entire specimen. The radiologist carefully identifies all areas for tissue sampling and submission. This is a labor-intensive and time-consuming process for all participants, including mammography technologists and radiologists in addition to the pathologist and pathology assistant. However, when the histology slides are completed the following day, most often the extent of the in situ disease is well documented because of this extra effort to correlate radiology and pathology findings; the result is more personalized and accurate treatment planning for the individual woman.<sup>14,15</sup>
- The weekly breast conference also demands extra tasks for completion. The breast center receives names of women to be presented several days before the Friday conference. When the list comes to pathology, the secretaries print all breast-related pathology reports for each patient and pull all histology slides from the most recent report. As expected, the first encounter a patient has with the breast center usually is 1 or more core biopsies. If a lumpectomy is to be presented, this may result in 60-100 slides, depending on the size of the lumpectomy and the number of sentinel lymph nodes harvested. A mastectomy usually has about 15-20 slides. To prepare for the conference, the pathologist must familiarize him or herself with the woman's pathology reports and find the slide with the best microscopic features to demonstrate the pathology findings. We have 3 modalities of photograph presentation for conference: gross images taken with a digital camera, a scanner that performs "whole-mount" copies of the entire (or portions of) histology slide, and photomicroscopy for histologic detail. All the images are processed through Adobe PhotoShop and placed in Microsoft PowerPoint.

The pathologist time per case is usually 15-30 minutes. This presentation is created on a PC (or Mac) and transferred to a laptop for the conference presentation. The conference usually has 3-8 cases each week, and conference usually lasts for close to 1.5 hours. The best practices exemplified in this type of conference cannot be overemphasized. This gathering of the breast team to discuss one woman's breast disease in sequence solves many miscommunication problems and enhances the understanding of her disease, allowing her physicians to provide better care—it is that simple.

## Suggestions for Payers

- Consider a tiered scale for breast lumpectomy examinations by creating several progressive levels of reimbursement for additional work. For example, it can be kept simple with three levels; the number of sections can be verified in the gross section of each pathology report.
- The reimbursement for lumpectomy analysis needs to be elevated over the mastectomy rate.
- The possibility exists that some laboratories might try to "game" the system<sup>5</sup>; however, audits and other means of verifying the process and outcomes can be instituted by responsible organizations and the infrequent offender dealt with on an individual basis.
- There will be more incentive to practice better breast pathology by adopting best practices and a reasonable reimbursement formula that reflects the amount of time and effort required for preparing and analyzing a lumpectomy specimen.

Finally, as creation of more breast teams takes place to promote precise pathology for patient-centered treatment planning, the business case can be made to payers to reward the time, skills, and quality improvement efforts to reduce risk exposure and promote excellence in breast health care. Wise payers in the future will realize that the financial burden of establishing and maintaining breast pathology services will then be offset by the cost savings from decreased adverse events and excessive use of more costly treatment resources resulting from incomplete or incorrect pathologic diagnoses.

Until reimbursement is improved substantially, many women will not be afforded the pathology service they deserve.

## A Personal Perspective

Sometimes I catch myself wondering why I am doing all of this extra work. All the extra services outlined in this paper are completed at no cost, with no billing codes. Our pathology group's motivation is not for the cliché of *doing the right thing*, although that is what we believe we are doing. The underlying reason goes back to my first patient education series lecture. At our hospital, twice a year I give a talk to newly diagnosed women about their personal breast pathology report. I show slides about the breast, anatomy, about cancer cells and cancerous tissue; we talk about DCIS and

invasive disease. I share this information for about 2 hours. At the end of the presentation, women approach me individually and bring their personal breast pathology reports to discuss in private. When, as a pathologist, you look at these women in the eye, you sense their anguish about the words you have issued related to their tumor specimens so objectively in the laboratory, and you begin to feel the gravity of what your words and diagnosis have spawned. It is humbling; one wants to do more for these women within our capacity. These encounters are the fuel that keeps us constantly trying to improve our breast pathology services. And fortunately for many of us that sense of gratification is our reward for the private practice of breast care.

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