Cutting Unnecessary Healthcare Costs: Routine Imaging Less Than One Year After a Benign Breast Biopsy Incurs Significant Cost with Little Benefit

Abstract: The Value of Six Month Interval Imaging following Benign Radiologic-Pathologic Concordant Minimally Invasive Breast Biopsy

May 2, 2013, Chicago--Routine imaging studies conducted less than a year after a benign breast biopsy are an unnecessary drain on healthcare dollars. This was the conclusion of a new study presented this week at the American Society of Breast Surgeons (ASBrS) Annual Meeting. Researchers found that half of the patients with benign lesions studied received at least one imaging exam during this time period, and only one patient (.6%) was diagnosed with a cancer.

“In today’s cost-conscious healthcare environment, the key word in our conclusion is routine. In some cases, physicians will have clear reasons to feel such an exam is appropriate,” says researcher Demitra Manjoros, breast fellow at Bryn Mawr Hospital. “But in this study, the yields for finding a malignancy with interval imaging were extremely low, and testing cannot be justified across this entire patient population.” Manjoros points out that currently routine six- to 12-month imaging after a benign biopsy is recommended as part of the National Comprehensive Cancer Network (NCCN) guidelines.

In the study, researchers followed 689 patients undergoing needle biopsy to test for breast cancer. Of these, 188 (27%) were diagnosed with a malignancy, three (0.4%) had a non-breast pathology and 498 (72.3%) had benign findings. Forty-four (8.8%) patients with benign results were also surgically biopsied because of discordant pathology, atypia, papillary lesions or other nonmalignant findings. Interval imaging at less than 12 months after the benign biopsy was obtained for 169 of the concordant patients. For 33 patients, more than one study was performed for a total of 204 interval imaging exams. Ultimately, only one (.6%) patient was found to have breast cancer. An analysis found that the cost of detecting this single cancer was approximately $193,000 in this patient cohort. The researchers also note that this particular patient had significant complicating factors that likely would have independently identified her as a candidate for early follow up imaging.
“Concordance in findings between the radiologist and pathologist is extremely important when making decisions about care for a woman undergoing biopsy for a suspicious lesion,” notes Dr. Manjoros.

“Concordance means that the results on an imaging exam are explained by the findings of the pathology lab. If the results are discordant—for example, a mammogram shows significant irregularities but the lab report is normal, we might conclude that the biopsied tissue sampling was not adequate. Such patients demand a special care path. But when results are concordant, and the lesion is classified as benign, our study suggests interval imaging is unnecessary, and the patient can safely wait for a full year for a routine screening mammogram.”

“Imaging studies are costly and the goal is to provide exams that improve overall outcomes vs. procedures that simply represent unnecessary testing. This study provides physicians with important information for making that choice,” she concludes.
Abstract

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INTRODUCTION:
Image-guided minimally invasive breast biopsy is standard of care in women with suspicious imaging findings. Current National Comprehensive Cancer Network (NCCN) guidelines recommend repeat imaging 6 to 12 months after a benign concordant image-guided breast biopsy. We hypothesized that interval imaging less than 12 months after a benign radiologic-pathologic concordant breast biopsy has a low cancer yield and increases healthcare costs.

METHODS:
Following IRB-approval, a retrospective chart review identified 689 patients who underwent image-guided breast biopsy at the Comprehensive Breast Center at Bryn Mawr Hospital between January 2010 and December 2010. Biopsy type included stereotactic, ultrasound-guided or MRI-guided biopsy. All charts were evaluated for documentation of radiologic-pathologic concordance.

RESULTS:
Of the 689 patients undergoing biopsy, 188 (27%) had malignant pathology, 3 (0.4%) had non-breast pathology and 498 (72.3%) had “benign” pathology. Of 498 “benign” patients, 44 (8.8%) had surgical excision secondary to discordant pathology, atypia, papillary lesion or other benign finding. Of the remaining 454 benign biopsy patients that did not undergo surgical excision, 340 (74.9%) had documented radiologic-pathologic correlation by the radiologist, of which 3 were discordant. Interval imaging less than 12 months after benign biopsy was obtained in 169 (50.1%) of the 337 concordant patients. 33 patients had more than one interval imaging study done for a total of 204 studies. Imaging was benign as designated by BIRADS 1, 2 or 3 in 162 (95.9%) of the patients imaged. Two (1.2%) received a BIRADS 0 and underwent additional imaging which was ultimately deemed benign. Five (3.0%) patients had suspicious (BIRADS 4) findings on follow-up imaging, 2 away from the original biopsy site and 3 at the biopsy site. Ultimately, only 1 breast cancer was identified, representing 0.6% (95% CI, 0% -3.6%) of all benign concordant patients undergoing interval imaging. Cost analysis reveals the cost of detecting a “missed” cancer with interval imaging following benign radiologic-pathologic concordant minimally invasive biopsy to be approximately $192,745 in this patient cohort.

CONCLUSION:
Interval imaging performed less than 12 months after benign radiologic-pathologic concordant breast biopsy had a low yield for the detection of breast cancer (0.6%) and resulted in increased healthcare costs. These data support the policy for discontinuation of interval imaging less than 12 months after benign radiologic-pathologic concordant biopsy.