

Mastalgia: Imaging Work-up Appropriateness

Alison L. Chetlen, DO, Megha Madhukar Kapoor, MD¹, Meredith Ranzenbach Watts, MD

Rationale and Objectives: Radiologists frequently image women with the sole complaint of mastalgia (breast pain). We hypothesized that whereas the vast majority of women ultimately have no imaging explanation for their breast pain, a small percentage of patients may have a correlative imaging finding and confirm the current American College of Radiology Appropriateness Criteria recommendations.

Materials and Methods: In this Health Insurance Portability and Accountability Act (HIPAA)-compliant, institutional review board-approved retrospective review, we evaluated 236 women between the ages of 18 and 83 years who presented to our Breast Care Center in 2013 with the sole complaint of breast pain or tenderness. Patients' clinical presentation, diagnostic imaging work-up, and clinical and radiographic follow-up were documented. Outcomes of the diagnostic work-up were compared with the American College of Radiology Appropriateness Criteria recommendations.

Results: Of the 236 patients, 10 women had cyclical breast pain, 116 had noncyclical, nonfocal breast pain, and 110 had noncyclical, focal breast pain. No imaging correlates were discovered to explain the etiology of cyclical pain, supporting the American College of Radiology Appropriateness Criteria rating values. A definitive imaging correlate for breast pain was identified in seven women (3%) with noncyclical, focal pain, one of which was a cancer diagnosis (0.4%), which correlates with the American College of Radiology Appropriateness Criteria ratings. No imaging correlates were found in women with noncyclical, nonfocal pain, supporting the American College of Radiology Appropriateness Criteria ratings.

Conclusion: There was no radiological imaging finding to explain the etiology of mastalgia in most women. Diagnostic imaging may be an appropriate diagnostic evaluation in patients with noncyclical, focal breast pain, supporting the American College of Radiology Appropriateness Criteria recommendations.

Key Words: Breast pain; mastalgia; appropriateness criteria; mammography.

© 2016 The Association of University Radiologists. Published by Elsevier Inc. All rights reserved.

INTRODUCTION

Breast pain is a common problem that affects 70–80% of women at some point in their lives (1–8), most frequently noted in premenopausal women (9). The incidence of cancer in patients presenting with breast pain is reported to be 0–3.2% (3,6,10–16) and in one study up to 7% (17). Breast pain is usually self-limited and is not typically a symptom of malignant pathologic disease. Most breast pain symptomatology can be treated with reassurance, over-the-counter pain medications, or structural support (9,11,17–19).

As breast cancer awareness has increased, a concern that breast pain may indicate malignancy contributes to the trend of breast pain being the most common breast symptom causing a woman to consult her primary care physician or a breast

surgeon (9,17,20). If patients are not treated based on symptoms and physical examination alone, they may be referred for reassurance to a breast imaging facility (1,11,16,21). These studies report that after initial imaging, most women require no intervention after reassurance that their diagnostic imaging work-up is normal. The negative predictive value of mammography and ultrasound for patients with breast pain has been reported to be 100% in three studies (10,11,22). However, a 2012 study showed that women who received initial imaging were more likely to have subsequent imaging, biopsies, additional visits, and higher clinical services utilization than women who did not (13), suggesting that these modalities should be judiciously performed.

Imaging work-up for breast pain is described in the American College of Radiology (ACR) Appropriateness Criteria, with guidelines for evaluating breast pain based on 44 studies chosen for review. The ACR expert panel, however, acknowledges lack of strong empirical evidence. The ACR provides six different scenarios of breast pain and imaging recommendations for each. The six different scenarios are referred to as variants that are based on the characteristics of pain and age of the patient. In each variant, pain can be unilateral or bilateral. For each variant of breast pain, there are recommendations for what imaging studies are most appropriate for the initial evaluation of breast pain. Variant 1 is the scenario of cyclical breast pain in a patient <40 years old, whereas Variant

Acad Radiol 2016; ■■■■-■■■

From the Department of Radiology, Division of Breast Imaging, Penn State Health, Milton S. Hershey Medical Center, 30 Hope Drive, Suite 1800, Mail Code EC 008, Hershey, PA 17033-0859. Received July 21, 2016; accepted October 10, 2016. *At the time this research was performed, Dr. Kapoor was a Diagnostic Radiology Resident at Penn State Milton S. Hershey Medical Center. She is currently working as a full time breast imager at MD Anderson Cancer Center, Department of Diagnostic Radiology, The University of Texas MD Anderson Cancer Center, 1400 Pressler Street, Unit 1459, Houston, TX 77030. Address correspondence to: A.L.C. e-mail: achetlen@hmc.psu.edu

© 2016 The Association of University Radiologists. Published by Elsevier Inc. All rights reserved.
<http://dx.doi.org/10.1016/j.acra.2016.10.004>

2 is in a patient ≥ 40 years old. Variant 3 is the scenario of noncyclical, focal breast pain in a patient < 30 years old, whereas Variant 4 is in a patient ≥ 30 years old. Variant 5 is the scenario of noncyclical, diffuse breast pain in a patient < 40 years old, whereas Variant 6 is in patient ≥ 40 years old (23).

The purpose of our retrospective review was to evaluate the diagnostic work-up of women presenting with solitary complaint of breast pain, identify the outcomes of the diagnostic work-up, and review the use of these criteria within our own practice.

MATERIALS AND METHODS

In this Health Insurance Portability and Accountability Act (HIPAA)-compliant, institutional review board-approved retrospective study, we queried our institution's General Electric (GE) (Fairfield, Connecticut, United States of America) Imagecast picture archiving and communication system (PACS) using the Primordial software and searched for breast imaging studies between January 1, 2013 and December 31, 2013 with key words "breast pain" or "breast tenderness." We limited the search criteria to include imaging modality of diagnostic mammography or ultrasound, female gender, and age interval of 18–100 years old. This query returned 561 women between the ages of 18 and 83 who presented to our Breast Care Center with a current complaint of breast pain or breast tenderness.

Three hundred twenty-five women were then excluded because of one or more of the following reasons: breast pain associated with a palpable abnormality history of ipsilateral breast cancer, trauma to the ipsilateral breast and associated skin, suspected or known breast abscesses, nipple discharge, new nipple inversion, associated constitutional symptoms, or pregnancy. If a patient presented to the Breast Care Center with a consult for diagnostic evaluation of the axilla with the exclusive purpose of evaluating lymph nodes alone, these patients were also excluded from the study. After applying the exclusion criteria, our cohort included 236 women who presented with a sole complaint of breast pain or tenderness.

Diagnostic Evaluation

In our institution, our standard of care for a patient > 30 years old presenting with focal breast pain is to perform a bilateral diagnostic mammogram followed by targeted ultrasound. In some cases, if the patient had a mammogram performed within the last 6 months, only ultrasound evaluation is performed, following the radiologist's review of her most recent mammogram. In rare cases of a patient with focal breast pain and entirely fatty mammographic breast density in the area of her breast pain, ultrasound may have been foregone if there was no mammographic abnormality identified per radiologist discretion. If the patient had bilateral nonfocal breast pain, she was generally only evaluated with mammography, utilizing only standard craniocaudal and mediolateral oblique views.

Patient demographics, chief complaint, history of breast cancer, physical examination (whether it was performed by the referring physician), chronicity of the complaint, location, focal or nonfocal, radiographic work-up (mammogram +/- ultrasound, findings, Breast Imaging-Reporting and Data System [BI-RADS] Category), surgical consultation, treatment recommended, and pathology were collected into a secure database that was maintained and updated by a single data manager (MMK).

Follow-up of Our Cohort

For the majority of patients in our study population, we used their 2014 and 2015 follow-up mammograms as a method to assess whether they developed cancer in the interim after their initial breast pain evaluation. If there was only a follow-up ultrasound available, more frequently encountered in the age group < 30 years old, we used this to evaluate for the development of cancer after the initial breast pain evaluation. For those women who had no follow-up breast imaging, we did attempt to follow up with the most recent clinical note, although clinical notes did not specifically address the previous breast pain complaint. Some of the women did not have a follow-up mammogram because they were < 40 years old.

In ten patients with cyclical breast pain (Variants 1 and 2), four women had follow-up mammographic imaging, with an average follow-up interval of 10.5 months (range: 4–13 months). The remaining six patients did not have imaging follow-up.

In 12 patients with noncyclical focal breast pain who were < 30 years old (Variant 3), only two women had follow-up ultrasound examinations at 7 and 9 months, respectively, and the remaining ten patients had no follow-up breast imaging due to age or had no specific follow-up imaging recommended at their initial breast pain evaluation.

In 98 patients who were > 30 years old (Variant 4), 49 had a follow-up mammogram, with an average follow-up interval of 15.5 months (range: 2–27 months), 2 patients had follow-up ultrasound examinations—one at 6 months and one at 2 months—and the remaining 47 had no follow-up breast imaging due to age (< 40 years old) or were lost to follow-up.

In 116 patients with noncyclical, nonfocal breast pain (Variants 5 and 6), 58 patients had follow-up mammograms, with an average follow-up interval of 15 months (range: 6–28 months). The remaining 58 had no follow-up breast imaging due to age (< 40 years old) or were lost to follow-up.

RESULTS

Of the 236 patients, 10 patients were categorized as having cyclical breast pain (Variants 1 and 2), 110 patients had focal breast pain (Variants 3 and 4), and 116 patients had nonfocal/diffuse breast pain (Variants 5 and 6). A definitive cause for the breast pain was identified in 7 patients (3% of all patients in this study), all of whom had focal pain, and 1 (0.4%) had a cancer diagnosis. There were no imaging

Download English Version:

<https://daneshyari.com/en/article/5725591>

Download Persian Version:

<https://daneshyari.com/article/5725591>

[Daneshyari.com](https://daneshyari.com)