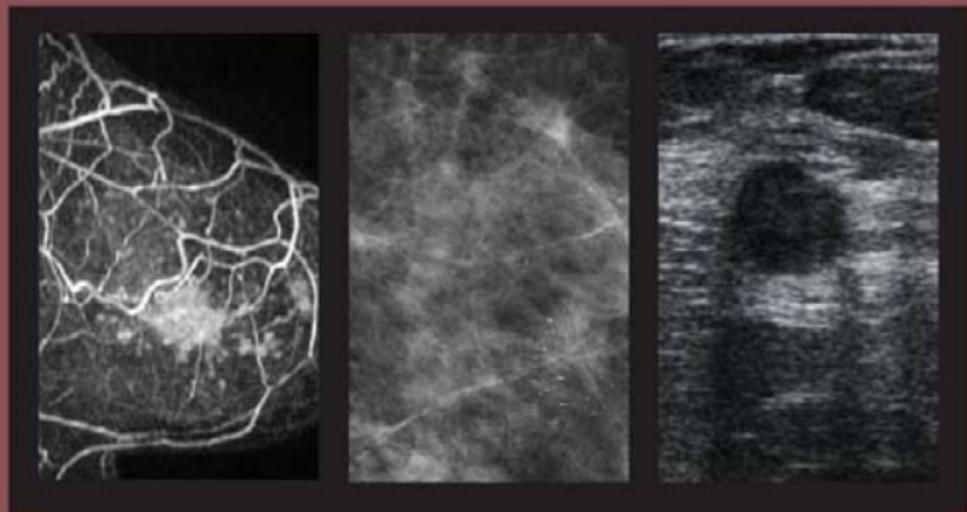


BREAST IMAGING CASES

CASES IN RADIOLOGY



CATHERINE M. APPLETON
KIMBERLY N. WIELE

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Breast Imaging Cases

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For my parents, who always told me I could do anything;
my husband, who champions my efforts, and my children,
Lily and Mack, who make it all worthwhile. **CMA**

To my biggest fan and husband, Bob, and
my 3 incredible children, Ben, Greg and Amanda. **KNW**

For my teachers, with gratitude; for my family, with love. **SH**

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Preface

This book provides a case-based, high yield, easy-to-read format presenting a spectrum of breast pathology presented through multiple imaging modalities. Generally, the cases are presented in order of increasing difficulty, although the respective difficulty may be relative to each reader. This text is certainly not intended to be comprehensive; however, classic and common diagnoses that a general practice radiologist would expect to encounter are featured. A few uncommon or rare cases are included for interest. The final 10 cases are dedicated to breast MR. They are grouped in order to have over-lapping and inclusive teaching points. We hope this book will serve in preparation for breast-imaging rotations, exams and the practice of radiology.

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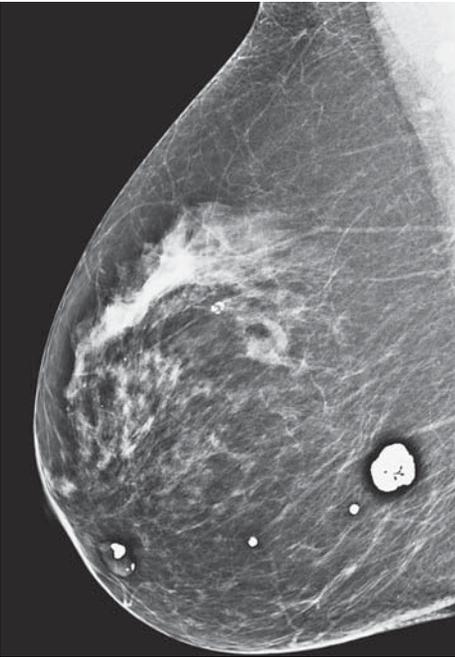
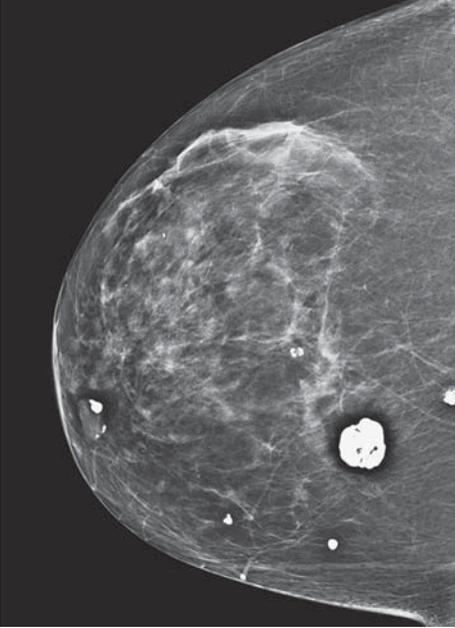
Alexander Mamourian, University of Pennsylvania

Stacy Smith, Brigham and Women's Hospital

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History

► Screening mammogram



Case 1 Benign Calcifications from Involuting Fibroadenomas

Findings

- ▶ Bilateral coarse or “popcorn” calcifications

Differential Diagnosis

- ▶ None—classic appearance for involuting/hyalinizing fibroadenomas demonstrated

Teaching Points

- ▶ Hyalinizing fibroadenomas frequently demonstrate a decrease in size of the circumscribed mass, with the associated development of dense, coarse, “popcorn” calcifications
- ▶ Calcifications are typically large (>3 mm), dense, and coarse
- ▶ Frequently multiple and bilateral but can occur in isolation
- ▶ May have residual associated soft tissue density or mass

Management

- ▶ BI-RADS® Category 2: Benign finding
- ▶ Annual screening mammography

Selected References/Further Reading

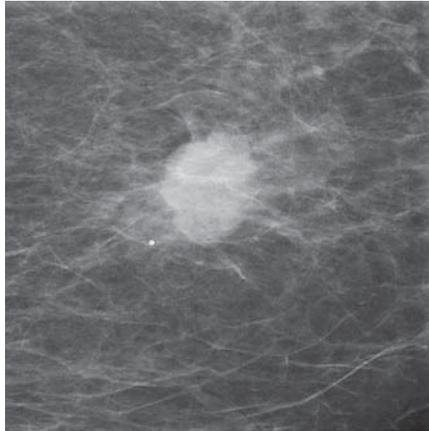
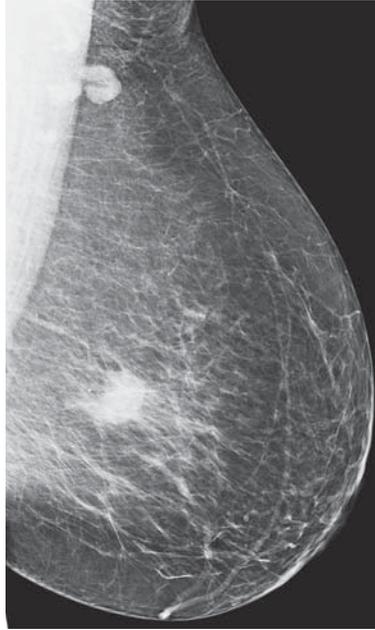
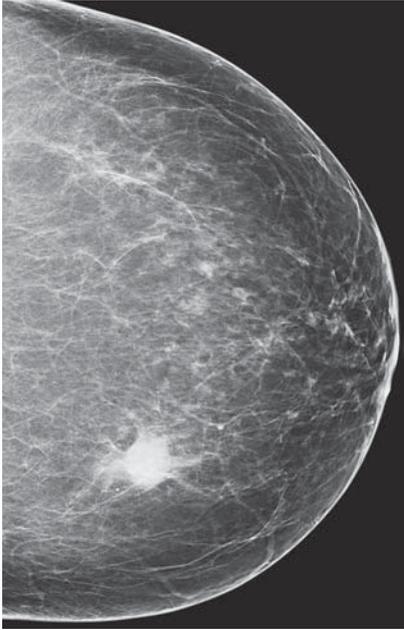
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History

- ▶ 50-year-old woman with a palpable mass in the left breast, 10 o'clock position



Case 2 Invasive Ductal Carcinoma with Metastatic Axillary Lymph Node

Findings

- ▶ There is a dense, lobular mass with indistinct margins and associated amorphous microcalcifications in the left breast, 10 o'clock position (correlating to the palpable area of concern)
- ▶ There is an enlarged axillary lymph node with thickened cortex

Differential Diagnosis

- ▶ Papillary carcinoma
- ▶ Given the presence of microcalcifications, invasive lobular carcinoma is less likely (microcalcifications are not a typical feature of lobular carcinoma)

Teaching Points

- ▶ Magnification views are helpful to delineate extent of disease (particularly when there are microcalcifications associated with a suspicious mass)
- ▶ Ultrasound of the mass (not shown in this case) should be performed to allow planning for percutaneous core needle biopsy
- ▶ Ultrasound of the ipsilateral axilla should be performed for all highly suspicious breast masses
 - Can detect non-palpable abnormal lymph nodes
- ▶ Once the diagnosis is confirmed, contrast-enhanced MR should be considered to further evaluate extent of disease in the affected breast, and for ancillary screening of the contralateral breast

Management

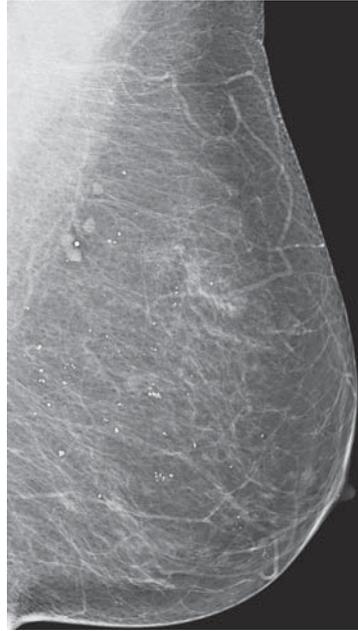
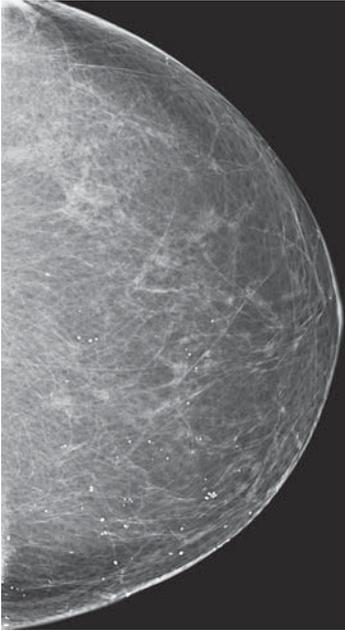
- ▶ BI-RADS® Category 5: Highly suspicious for malignancy
- ▶ Ultrasound-guided core needle biopsy of the mass and fine-needle aspiration (FNA) of the suspicious axillary lymph node
 - If the lymph node FNA yields metastatic disease, then sentinel lymph node sampling is not performed; the patient would undergo axillary lymph node dissection

Selected References/Further Reading

- Bassett LW, et al. *Diagnosis of Diseases of the Breast*, 2nd ed. Philadelphia: WB Saunders Co., 2005:485-490.
- Ikeda DM. *Breast Imaging: The Requisites*. Philadelphia: Elsevier Mosby, 2004:116-117.
- Stavros AT. *Breast Ultrasound*. Philadelphia: Lippincott Williams & Wilkins, 2004:838-847.

History

- ▶ Screening mammogram



Case 3 Dermal Calcifications

Findings

- ▶ Diffusely scattered, benign, skin calcifications

Differential Diagnosis

- ▶ None—classic appearance demonstrated

Teaching Points

- ▶ Dermal calcifications are typically lucent-centered or “eggshell” in appearance, polygonal in shape, 1 to 2 mm in size
- ▶ Arise from dermal sweat glands
- ▶ Most commonly found in the axilla, medial breast, or inframammary fold
- ▶ Classic findings need not be described in screening exam reports
 - If you are uncertain that clustered microcalcifications are dermal in location, magnification tangential views should be performed
 - If calcifications are confirmed to be within the skin, no further workup is required

Management

- ▶ Annual screening mammography

Selected References/Further Reading

Bassett LW, et al. *Diagnosis of Diseases of the Breast*, 2nd ed. Philadelphia: WB Saunders Co., 2005:402-405.

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History

- ▶ Screening mammogram (right breast images shown)

