AMSER Case of the Month March 2025

50 y.o. female with bilateral breast pain and L, bloody expressed nipple discharge

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Patient Presentation

- KG is a 50-year-old female presenting with chronic left bloody, expressed nipple discharge and bilateral breast pain.
- PMHx: No pertinent medical history
- PSHx: No surgical hx
- FSHx: No family hx of breast cancer
- Labs: CBC and CMP wnl

What Imaging Should We Order?

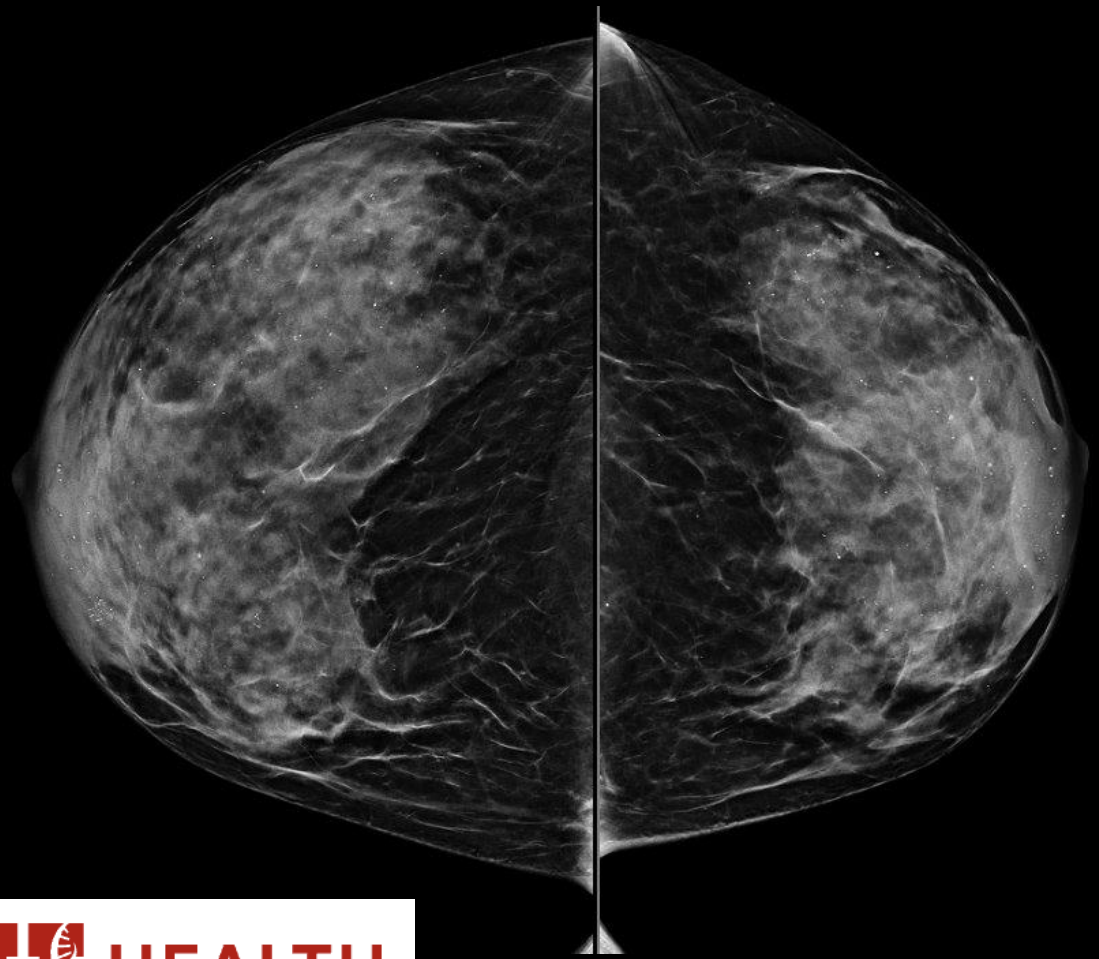
Select the applicable ACR Appropriateness Criteria

Variant 2: **Adult male or female 40 years of age or older. Pathologic nipple discharge. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
US breast	Usually Appropriate	O
Digital breast tomosynthesis diagnostic	Usually Appropriate	☢☢
Mammography diagnostic	Usually Appropriate	☢☢
Ductography	Usually Not Appropriate	☢☢
Image-guided core biopsy breast	Usually Not Appropriate	Varies
Image-guided fine needle aspiration breast	Usually Not Appropriate	Varies
MRI breast without and with IV contrast	Usually Not Appropriate	O
MRI breast without IV contrast	Usually Not Appropriate	O
Sestamibi MBI	Usually Not Appropriate	☢☢☢
FDG-PET breast dedicated	Usually Not Appropriate	☢☢☢

This imaging modality was ordered first.

2022



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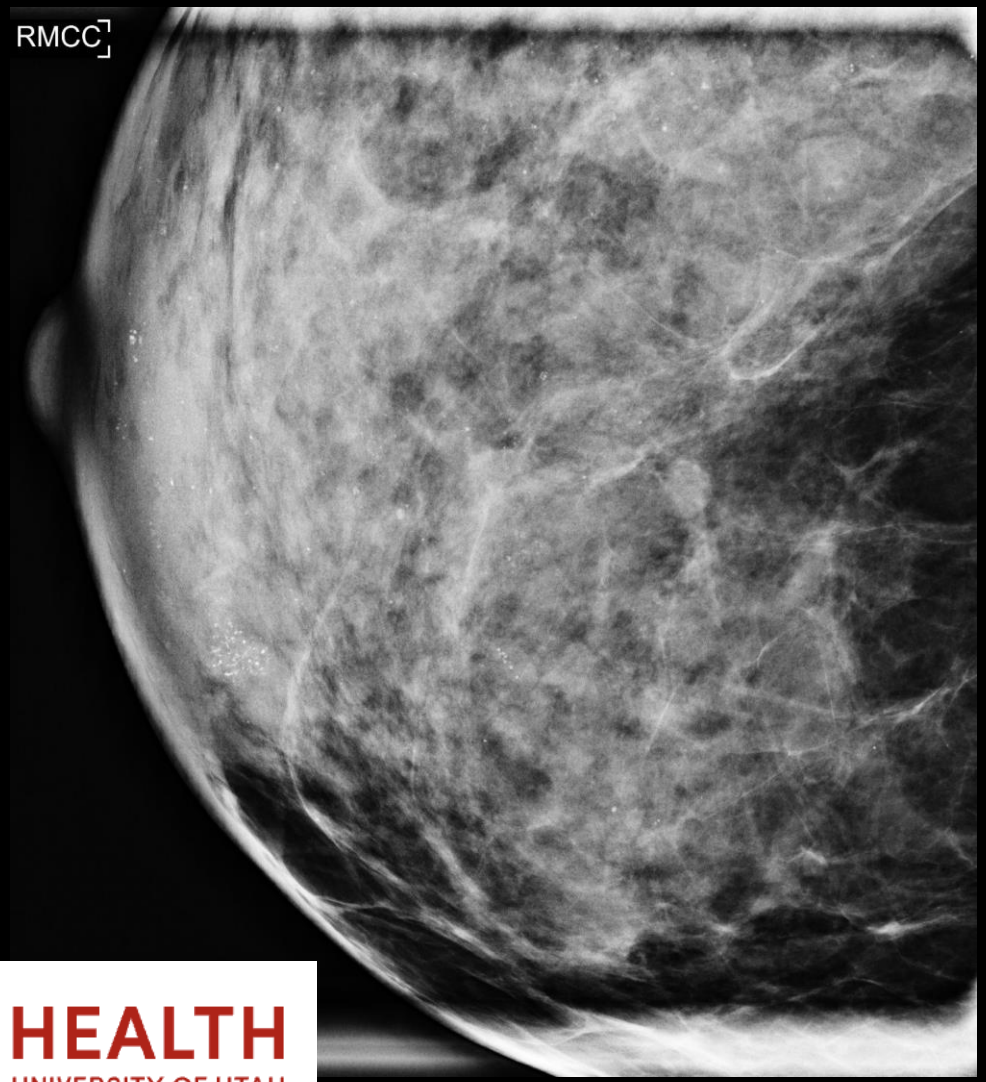

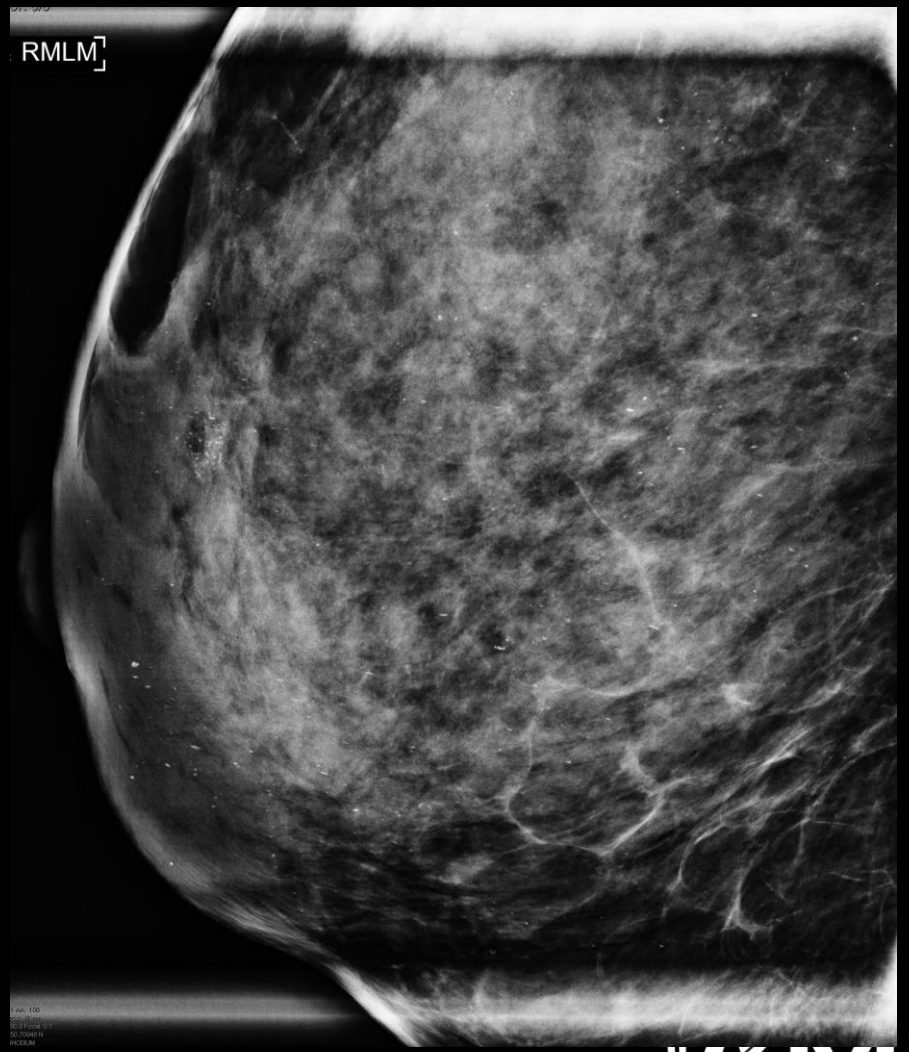

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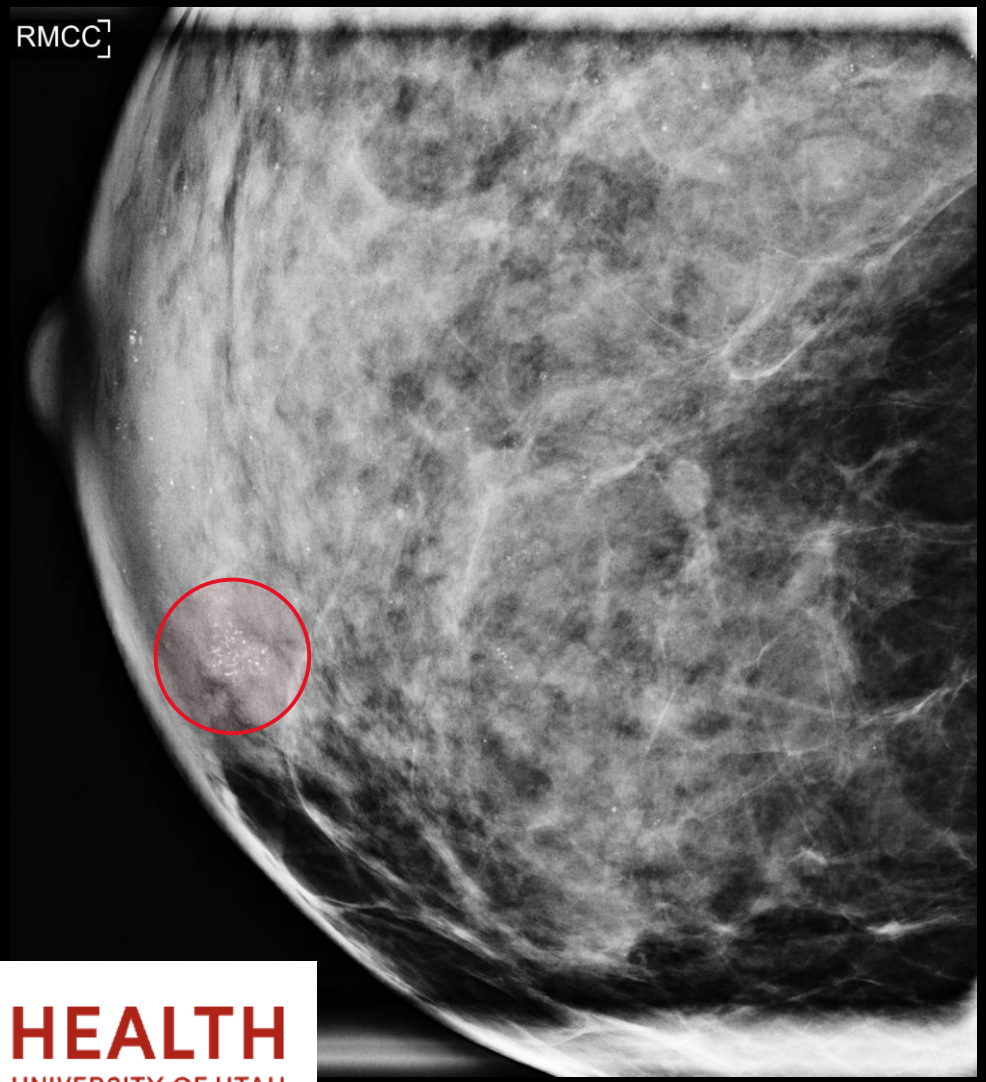

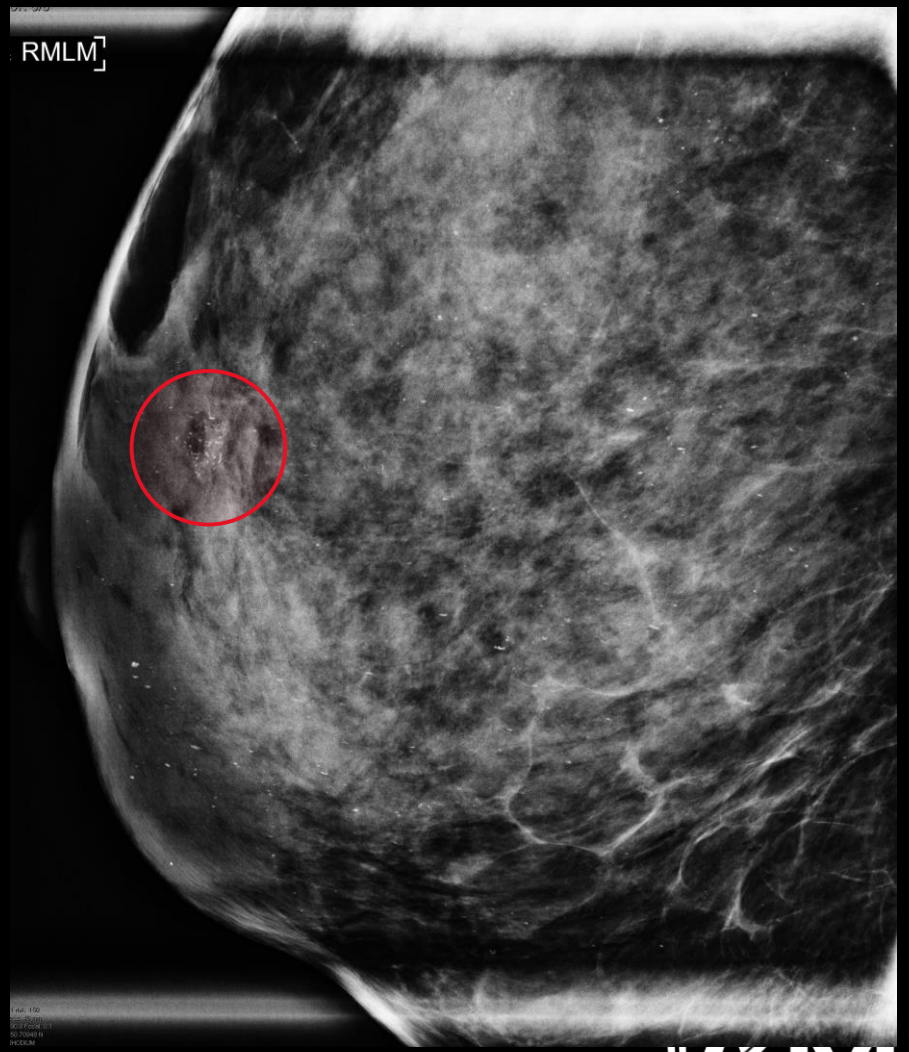

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This imaging modality was ordered after calcifications were found on mammography to further investigate the retroareolar space.

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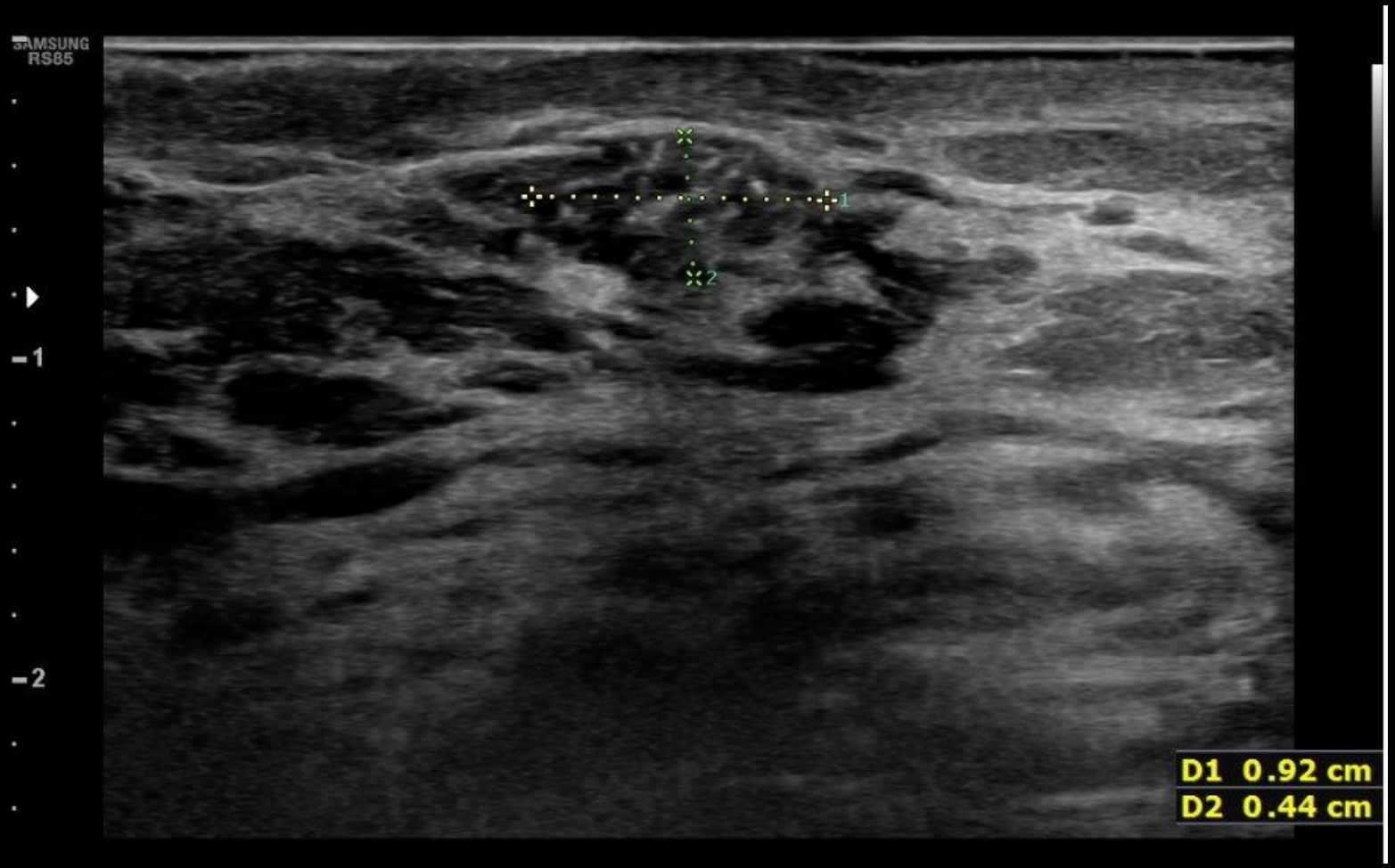
(.92cm x .44cm) Subdermal mass corresponding to calcifications seen on US.



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Final Dx:

Ductal Carcinoma in Situ upgraded to Invasive Ductal Carcinoma on US guided biopsy.

Case Discussion

- Intraductal carcinoma arises from ductal epithelial cells in the breast that undergo malignant transformation but remain contained within the ductal system.
- These malignant cells have not breached the basement membrane, meaning there is no invasion into the surrounding breast stroma or other organs.
- Most patients are asymptomatic. Clinical findings often arise through screening mammograms, where microcalcifications or other suspicious lesions are detected.
- In rare cases, patients may present with pathologic nipple discharge, skin changes, or a palpable mass.
- Pathologic discharge is defined as bloody or clear, unilateral, and spontaneous; whereas, benign nipple discharge generally is expressed and is yellow, green, or white in color.

Case Discussion

- Mammography: The primary diagnostic tool. DCIS typically presents as clusters of microcalcifications that are irregular in size and shape, often forming a linear or branching pattern.
- Ultrasound: Used in cases where a palpable mass is present, though DCIS is often invisible on ultrasound unless there is associated invasive disease.
- MRI: May be employed in high-risk patients or for further evaluation when mammogram results are unclear.
- Biopsy: Essential for definitive diagnosis, usually performed via core needle biopsy or vacuum-assisted biopsy. Histology shows malignant cells confined within the duct, without evidence of invasion into surrounding tissue.

References:

- 1. Harris A. Case 41: Ductal Carcinoma in Situ. Radiology. 2001;221(3):770-3. doi:10.1148/radiol.2213000890 [Pubmed]
- 2. Emily F. Conant, Cecilia M. Brennecke. Breast Imaging: Case Review Series (Case Review). (2006) ISBN: 0323017460
- 3. Yamada T, Mori N, Watanabe M et al. Radiologic-Pathologic Correlation of Ductal Carcinoma in Situ. Radiographics. 2010;30(5):1183-98. doi:10.1148/rg.305095073 [Pubmed]
- 4. Lee J, Kaplan J, Murray M et al. Underestimation of DCIS at MRI-Guided Vacuum-Assisted Breast Biopsy. AJR Am J Roentgenol. 2007;189(2):468-74. doi:10.2214/AJR.07.2172 [Pubmed]
- 5. Kim J, Ko E, Kim D, Han H, Sohn J, Choe D. Noncalcified Ductal Carcinoma in Situ: Imaging and Histologic Findings in 36 Tumors. J Ultrasound Med. 2009;28(7):903-10. doi:10.7863/jum.2009.28.7.903 [Pubmed]
- 6. Shin H, Kim H, Kim S, Kwon G, Gong G, Cho O. Screening-Detected and Symptomatic Ductal Carcinoma in Situ: Differences in the Sonographic and Pathologic Features. AJR Am J Roentgenol. 2008;190(2):516-25. doi:10.2214/AJR.07.2206 [Pubmed]
- 7. Cho K, Seo B, Kim C et al. Non-Calcified Ductal Carcinoma in Situ: Ultrasound and Mammographic Findings Correlated with Histological Findings. Yonsei Med J. 2008;49(1):103-10. doi:10.3349/ymj.2008.49.1.103 [Pubmed]

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