

AMSER Case of the Month

August 2025

38-year-old female with right breast pain

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Patient Presentation

- 38 yo F w/ PMH asthma has had irritation of her right breast nipple since August 2024. The irritation is described as “soreness” and has associated scabbing of the nipple. She is now presenting with new focal breast pain in the right breast.

- PMH: Asthma
- PSH: None
- Medications: Albuterol
- Allergy: Gluten, Lactose, Latex
- FHx: None
- Gyn: G3P1011
- Social: no smoking history, no drug use, occasional alcohol use
- Vitals: BP 122/52; Pulse 79; BMI 22
- Physical Exam: Ulceration, erythema, and scaling of right nipple-areolar complex

What Imaging Should We Order?

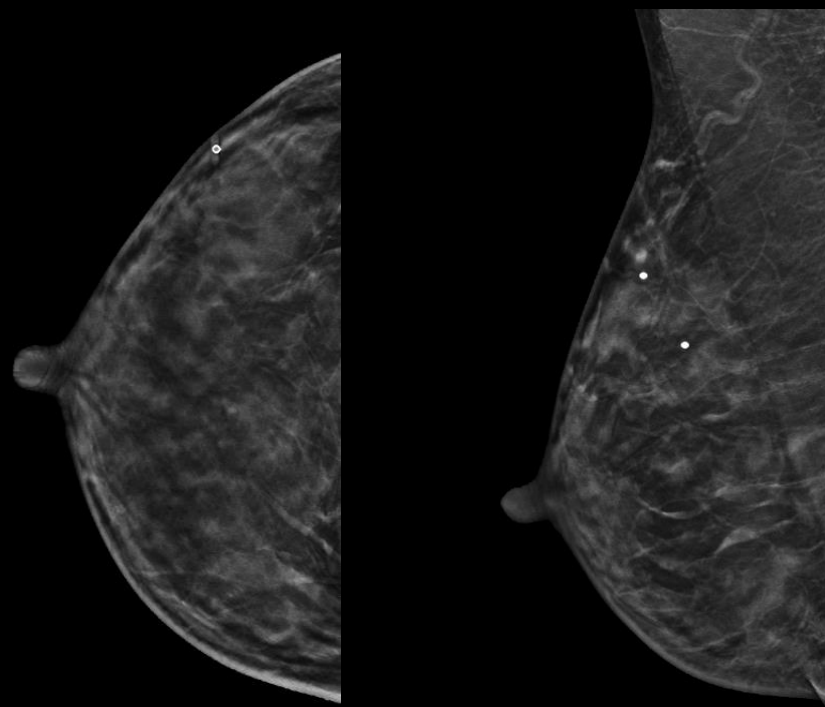
Select the applicable ACR Appropriateness Criteria

Scenario	Scenario ID	Procedure	Adult RRL	Peds RRL	Appropriateness Category
Breast pain, noncyclical, focal	3148149	● US breast	0 mSv O	0 mSv [ped] O	Usually appropriate
		● Digital breast tomosynthesis diagnostic	0.1-1mSv ☼☼		Usually appropriate
		● Mammography diagnostic	0.1-1mSv ☼☼		Usually appropriate
		● MRI breast without and with IV contrast	0 mSv O	0 mSv [ped] O	Usually not appropriate
		● MRI breast without IV contrast	0 mSv O	0 mSv [ped] O	Usually not appropriate
		● Sestamibi MBI	1-10 mSv ☼☼☼		Usually not appropriate

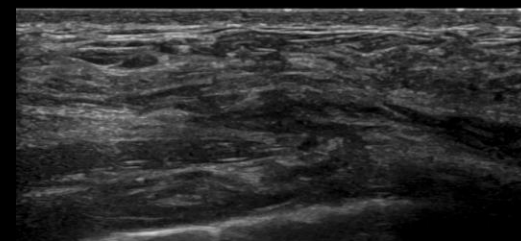
These imaging modalities were ordered by the OP physician

Findings (unlabeled)

Mammo/Tomo:

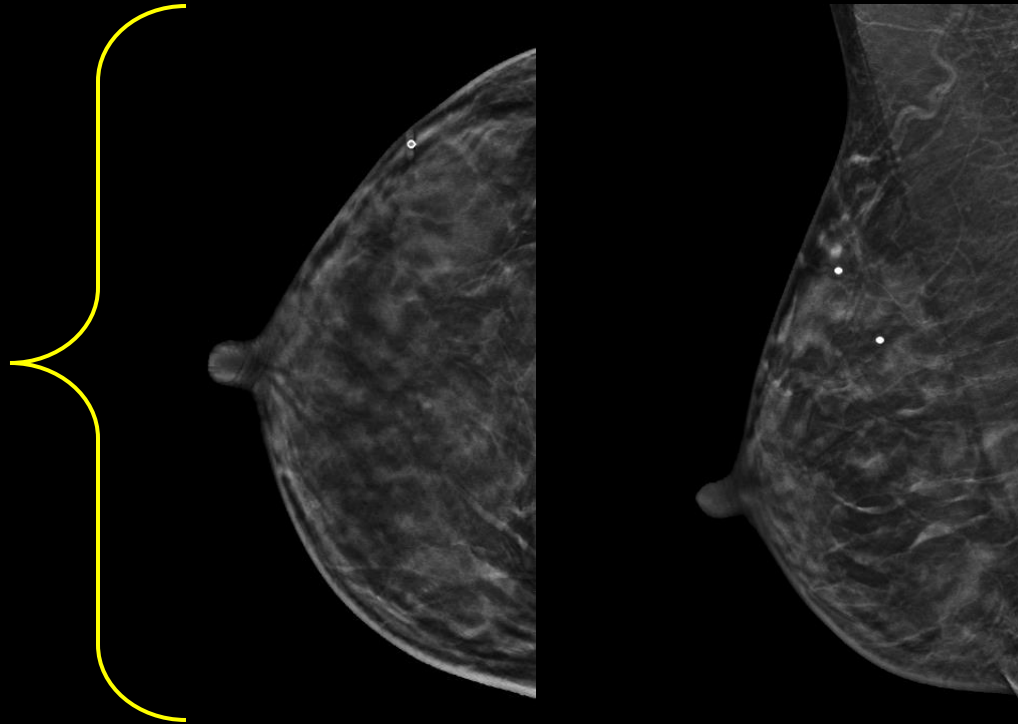


US:

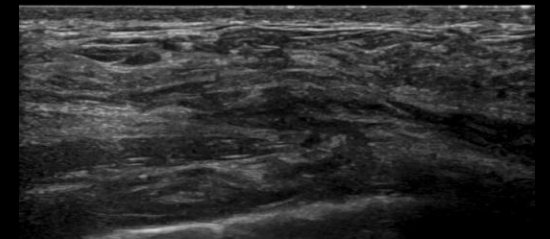


Findings (labeled)

Mammo/Tomo:
Dense breast tissue
[*areas of point
tenderness
indicated by BB's*]



US: normal glandular
tissue



Patient Progress:

The patient was referred to dermatology and was prescribed topical steroid cream, which yielded no improvement in symptoms.

In March of 2025, a punch biopsy of the nipple was performed. Pathology results found nests and groups of malignant Paget's cells predominantly involving the lower layers of the epidermis, with superficial ulceration suggestive of Paget's disease of the nipple.

Impression: **Intraepidermal carcinoma, consistent with Paget's disease of the nipple.**

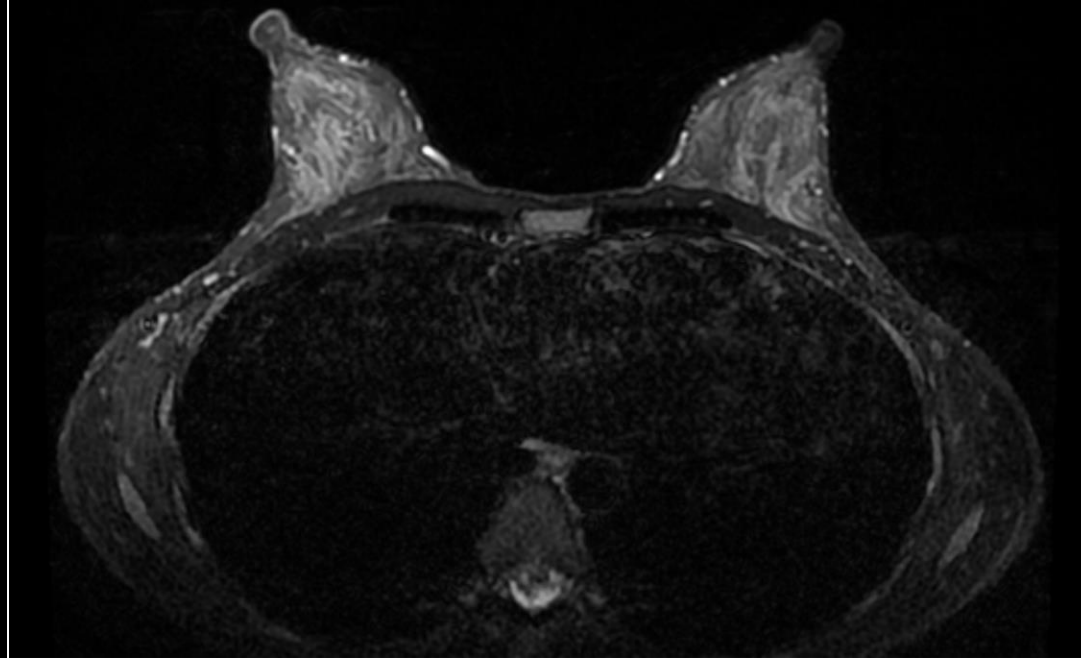
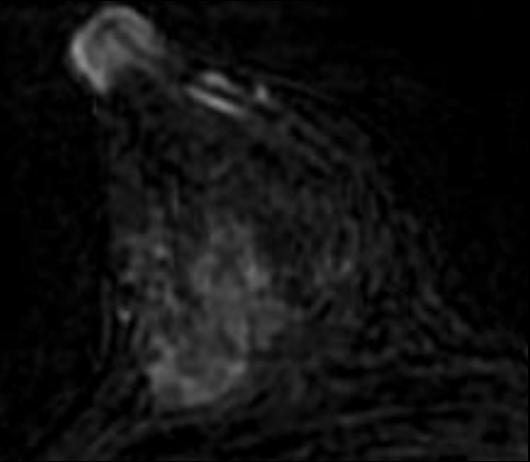
What is the next step in management?

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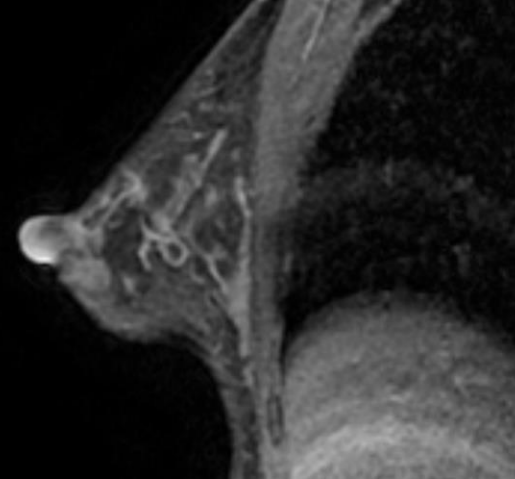
The National Comprehensive Cancer Network (NCCN) recommends breast MRI to define the extent of disease and identify additional malignancies, especially when the biopsy of the nipple-areolar complex is positive for Paget's disease.^{1,2}

Findings (unlabeled)

R Breast [Axial]
post-contrast

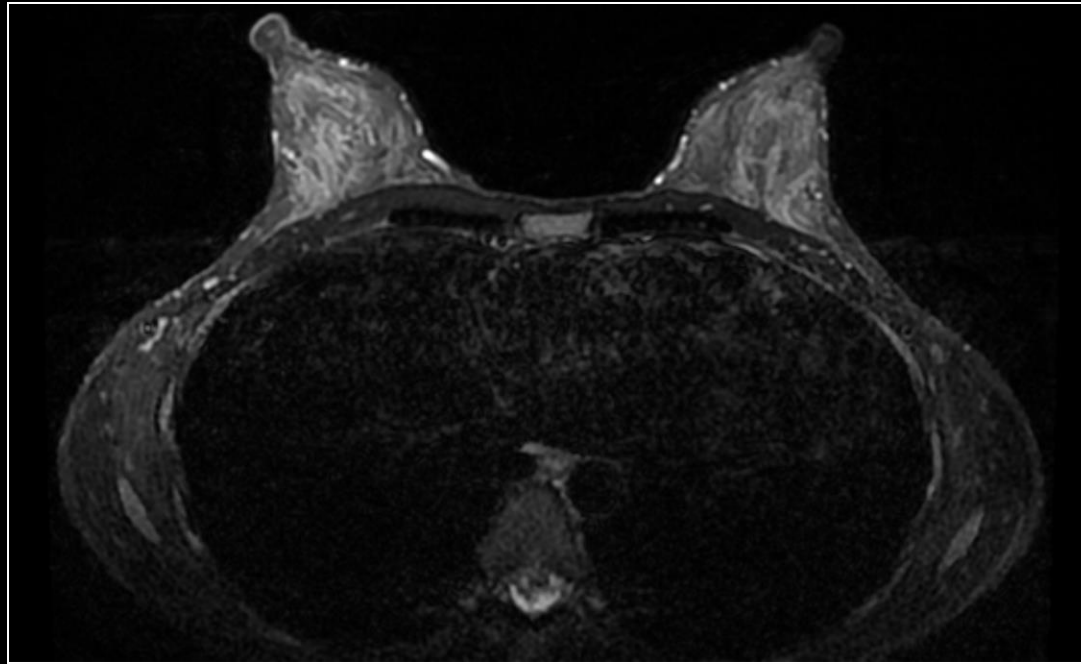
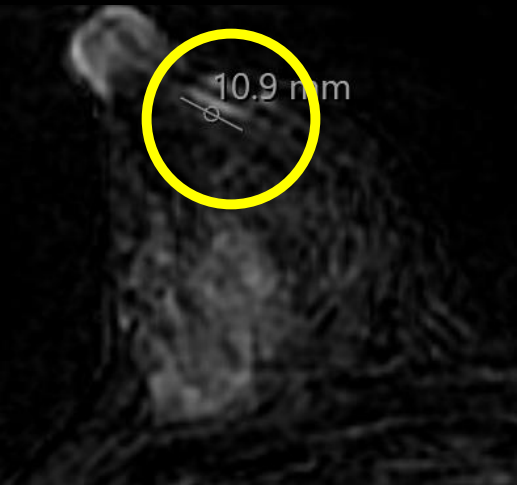


R Breast [Sagittal]
post-contrast



Findings (labeled)

R Breast [Axial]
post-contrast



R Breast [Sagittal]
post-contrast



MR Breast: Right nipple enhancement and swelling. Linear non-mass enhancement extending from the right nipple posteriorly in the medial aspect of the retro-areolar region.

A complete mastectomy was performed in May. Pathology results found Paget's disease of the nipple with associated ductal carcinoma in situ, correlating to linear enhancement

Final Dx:

Paget's Disease of the Breast

Case Discussion: Paget's Disease of the Breast

- Paget's disease of the breast is a rare breast carcinoma affecting the nipple-areola complex, accounting for ~1–4% of all breast cancers. It is often underrecognized, mimicking benign conditions such as dermatitis or eczema. It presents clinically as eczematous changes such as redness, scaling, crusting, and pruritus.¹
- It is commonly associated with DCIS or invasive ductal carcinoma. Its pathogenesis is not determined with both an epidermotropic theory, in which ductal carcinoma cells migrate to the nipple epidermis, and an in-situ transformation theory, in which keratinocytes undergo malignant transformation.^{2,3}

Case Discussion: Diagnostic Workup

- Diagnostic Workup of Paget's Disease:
 - Clinical Exam + Imaging + Histopathology
- Imaging:
 - Mammography: First-line; **may be normal in up to 50% of cases**
 - Ultrasound: For palpable abnormalities or equivocal findings⁴
 - MRI: NCCN-recommended to assess disease extent and detect additional malignancy
- Biopsy:
 - Surgical biopsy of nipple-areolar complex (full epidermal thickness)
 - Histology: Presence of Paget cells confirms diagnosis⁵

Case Discussion: Treatment and Prognosis

- Treatment is based on the extent of disease and the presence of underlying carcinoma.
- Treatment options include mastectomy, Breast-conserving surgery + radiation (*for selected cases*), and sentinel node biopsy if invasive cancer is present.
- Prognosis is greatly determined by whether there is underlying cancer, stage, and lymph node involvement, with no underlying cancer having the best prognosis.
- *In this case, our patient underwent right complete mastectomy*

References:

1. Gilmore R, Prasath V, Habibi M. Paget disease of the breast in pregnancy and lactation. *Adv Exp Med Biol.* 2020;1252:133-136. doi:10.1007/978-3-030-41596-9_18
2. Sandoval-Leon AC, Drews-Elger K, Gomez-Fernandez CR, Yepes MM, Lippman ME. Paget's disease of the nipple. *Breast Cancer Res Treat.* 2013;141(1):1-12. doi:10.1007/s10549-013-2661-4
3. Sakorafas GH, Blanchard K, Sarr MG, Farley DR. Paget's disease of the breast. *Cancer Treat Rev.* 2001;27(1):9-18. doi:10.1053/ctrv.2000.0203
4. Adams SJ, Kanthan R. Paget's disease of the male breast in the 21st century: a systematic review. *Breast.* 2016;29:14-23. doi:10.1016/j.breast.2016.06.015
5. Lim HS, Jeong SJ, Lee JS, et al. Paget disease of the breast: mammographic, US, and MR imaging findings with pathologic correlation. *Radiographics.* 2011;31(7):1973-1987. doi:10.1148/rg.317115070