AMSER Case of the Month
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60 year old female with spontaneous unilateral nipple discharge

Jacob Latreille, Drexel University College of Medicine
Matthew Miller, MD, Allegheny Health Network
Matthew Hartman, MD, Allegheny Health Network
Patient Presentation

• **HPI:** Patient is a 60 year old female presenting for a diagnostic mammogram following development of non-bloody, unilateral, spontaneous left breast discharge with sensation of soreness and engorgement.

• **PMH:** Fibroids, Endometriosis

• **PSH:** Hysterectomy, C-section

• **FH:** Breast cancer in mother

• **OB/GYN:** G3P2211, No history of abnormal pap or prior abnormal (BI-RADS 3+) mammogram.

• **Medications:** Calcium, Vit D2, Glucosamine, multivitamin, omega-3, Estradiol for previous 11 years.
What Imaging Should We Order?
**ACR Appropriateness Criteria: Pathological nipple discharge**

<table>
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<th>Radiologic Procedure</th>
<th>Rating</th>
<th>Comments</th>
<th>RRL*</th>
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*Relative Radiation Level*
Initial diagnostic mammogram with tomosynthesis

Left: Left MLO
Right: Left CC

No discrete masses or concerning lesions were seen on initial imaging.
ACR Appropriateness Criteria: Pathological nipple discharge

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Rating Scale: 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate

*Relative Radiation Level
A. Circumscribed round mass on transverse and longitudinal views

B. Ductal ectasia posterior to mass showing widening of the breast duct (blue) and thickening of the walls (hyperechoic)
C. Mass measures 0.4 cm x 0.85 cm

D. Doppler US image demonstrating hypervascular mass
Left breast ultrasound guided biopsy

F. Biopsy vacuum assist device deployed in an attempt to completely remove the lesion.

E. US view of Pre-biopsy deployment of vacuum assist device, confirming placement of device adjacency to lesion.

G. US view of Post-biopsy site, confirming removal of lesion and resolution of ectasia.

H. US confirmation of post-biopsy clip placement.
Repeat diagnostic mammogram following clip placement

Left: Left MLO
Right: Left CC

1. Post biopsy CC and MLO views of left breast with confirmation of clip placement.
Final Dx:
Intraductal Papilloma with fibrocystic changes, usual ductal hyperplasia with apocrine metaplasia
Discussion: Presentation of Unilateral Nipple Discharge

- **Differential Diagnosis:** Divided into normal milk production (lactational), physiological (galactorrhea), or pathological causes (papillomas, ectasia, infectious, malignant).

- **Evaluation:**
  - History: Appearance and frequency, trauma, endocrine symptoms, medications.
  - Physical: Skin changes, elicitation of discharge, lymph nodes, breast masses or tenderness

- **Imaging:**
  - 40 years and older: Both diagnostic mammogram and focused US
  - 30 – 40: Diagnostic mammogram, followed by US if necessary
  - < 30: Breast ultrasound, followed by mammogram if necessary.

Spontaneous nipple discharge is more suspicious than non-spontaneous nipple discharge.
Discussion: Intraductal Papilloma

- **Pathology:**
  - A Papilloma is a benign papillary tumor that grows along the lining of the breast duct, possibly resulting in ductal obstruction.

- **Presentation:**
  - Intraductal papillomas are the most common cause of pathological nipple discharge, frequently unilateral bloody discharge, but may be asymptptomatically found incidentally on imaging.

- **Management:**
  - US-guided core biopsy as concern exists whether these lesions may harbor malignant pathology such as DCIS. Higher risks of malignancy may be associated with the presence of diffuse papillomatosis (> 5 papillomas in a localized segment). Surgical excision pending results showing atypia).
Discussion: Additional Imaging

- **Breast Ductography (galactography):**
  - Contrast-enhanced mammogram of the duct
  - Can present with a large filling defect or ductal ectasia
- **MRI:**
  - T1 isointensity / hypointensity vs T2 hyperintensity
  - Morphologically oval / round, smooth or irregular, and commonly solid
- **Histologically:**
  - Composed of a fibrovascular core with surrounding epithelium
References:

Case courtesy of Dr Bahman Rasuli, [Radiopaedia.org](https://radiopaedia.org/). From the case [rID: 66992](https://radiopaedia.org/cases/66992)

Case courtesy of Ed Uthman, [Radiopaedia.org](https://radiopaedia.org/). From the case [rID: 79284](https://radiopaedia.org/cases/79284)


Nipple Discharge, Edited by Anees B Chagpar, MD, Wenliang Chen, MD, PhD, published by UpToDate in Waltham, MA. Last updated Apr 08, 2020

Overview of Benign Breast Disease Anees B Chagpar, MD, Wenliang Chen, MD, PhD, published by UpToDate in Waltham, MA. Last updated Oct 16, 2018