Nipple Discharge: A Clinician's Guide

SOCIETY OF BREAST IMAGING
SINCE 1985

➢ Nipple Discharge Overview

- **Definition**: Nipple discharge is fluid expressed from the nipple, either spontaneously or with manipulation.
- **Prevalence**: Reported in ~5–10% of women; the third most common breast complaint after pain and palpable areas of concern.
- Classified as either **Physiologic** (requiring no imaging evaluation) or **Pathologic** (requiring imaging evaluation to exclude underlying malignancy)

Common Causes of Nipple Discharge (non-exhaustive)					
Intraductal Papilloma	Ductal Ectasia	Infection	Galactorrhea	Breast Malignancy	Trauma
Serous or Bloody	Sticky, green, black or brown discharge	Bloody or purulent, may be foul smelling	Milky, thin discharge	Serous or bloody	Bloody

➢ Differentiating Physiologic from Pathologic Discharge

Feature	Physiologic	Pathologic
Laterality	Usually bilateral	Usually unilateral
Duct Involvement	Multiple ducts	Single duct
Spontaneity	With stimulation or expression	Spontaneous
Color/Consistency	Milky, green, yellow, or cloudy 	Bloody, clear, or watery 
Associated Findings:	None; often due to hormonal changes, medications, or pregnancy	May be associated with a breast mass, skin changes, or nipple retraction

➢ Physical Exam

- Inspect for skin/nipple changes and asymmetry
- Palpate for masses or focal tenderness
- Attempt to elicit discharge and note duct(s) involved and discharge characteristics

Management Recommendations

Physiologic Discharge

- Reassure and counsel to avoid nipple manipulation
- Ensure up-to-date screening mammography
- Monitor for changes in discharge character
- Consider targeted labs (serum prolactin level and TSH) to rule out underlying endocrine disorder

Pathologic Discharge

- Refer for diagnostic imaging

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Diagnostic Imaging Recommendations

Patient Age	Female Patients	Male Patients
<30 years old	Start with Ultrasound Follow up Diagnostic Mammogram if US looks abnormal	<25 years old: Start with Ultrasound ≥ 25 years old: Start with diagnostic Mammogram
≥30 years old	Start with Diagnostic mammogram and ultrasound	Start with Diagnostic mammogram and ultrasound

Special Considerations:

- Mammography and/or ultrasound are conventional first line imaging in breast care, however a negative result does not always exclude malignancy in patients with pathologic nipple discharge.
- In these circumstances, further imaging may be indicated if clinical suspicion for pathology remains high. MRI is typically the next best step given its high sensitivity for breast lesions, however Contrast-Enhanced Mammography or, less commonly, Ductography, are other alternative imaging modalities for patients unable to undergo breast MRI or if MRI is unavailable.

Additional Imaging Summarized

	Breast MRI	Contrast-enhanced mammography	Ductography
What to order?	**Preferred**	Alternative if MRI is contraindicated	Reserved for select cases
What is it?	3D, contrast-enhanced evaluation of the entire ductal system and parenchyma.	Iodinated IV contrast with dual-energy mammography	Retrograde filling of the ductal system with iodinated contrast and radiographic imaging
Pros:	High Sensitivity for breast lesions and capable of detecting occult lesions	High sensitivity for malignancy, widely available, shorter exam time	Relatively inexpensive, precisely localizes the affected duct
Cons:	Expensive; longer exam times, contraindicated in patients with gadolinium allergy or metal implants	Uses ionizing radiation, less sensitive for non-mass enhancing lesions	Lower sensitivity and specificity than MRI. **High failure rate.**