

# Evaluation and Management Strategies in a Patient Presented with Nipple Discharge

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## ABSTRACT

**Introduction** Nipple discharge (ND) is the third most common problem, a woman presents in the breast out patient clinic. There are many causes of nipple discharge and we need to have a detailed evaluation for deciding the proper management.

**Methods:** This is a review article on discussing the etio-pathogenesis and management of ND.

**Results** ND happens due to breast related to non-breast related causes. Detailed history related to medicines, hypothyroidism, prolactinomas and other co-morbidities need to be taken. Breast related cause range from duct ectasia, papillomas to malignant causes like ductal carcinoma *in situ*, papillary carcinomas or infiltrating ductal carcinomas.

**Conclusion** Patients presenting with ND need detailed evaluation and treatment is tailor made for each patient based on the specific cause of ND.

**Keywords** Nipple discharge, Duct ectasia, Galactorrhoea, Hypothyroidism

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## INTRODUCTION

Nipple discharge (ND) is the third most common complaint a woman presents with, in the Breast outpatient clinic.<sup>1</sup> Breast lump and mastalgia are the first two most common complaints.<sup>2</sup> There is a lot of anxiety component involved when a woman notices any nipple discharge. The causes of nipple discharge range from a wide spectrum of breast-related problems to non-breast-related problems and from normal nipple discharge to physiological or pathological.<sup>3</sup> We need to evaluate such patients systematically to find out the cause and treat them accordingly.

### Etiological Classification of ND

- Normal ND happens during lactation.
- Physiological ND occurs due to medications or endocrine problems and may have elevated serum prolactin levels.
- Pathological ND occurs due to causes that include duct ectasia, papillomas or carcinomas.

### History and Examination

Taking a detailed history is very important to reach a correct diagnosis. History of any lactation, duration of lactation, and parity status need to be documented. History of any chronic drug intake like thyroxine for hypothyroidism, anti-

coagulants, neuroleptics, anti-psychotic medicines, and anti-emetic medicines is vital to find out any secondary causes for ND. History of headache, visual disturbance, and menstrual irregularities may point toward Prolactinomas. History of any chronic abscess near the areola region or any slit or inverted nipple must be taken.

History about ND also includes colour of the discharge, single or multiple ducts, unilateral or bilateral, any associated breast lump or nipple excoriation, spontaneous or on expression, scanty or copious staining undergarments. Bilateral ND is usually normal or physiological. Unilateral nipple excoriation may point towards Paget's disease; if bilateral then may be eczema, which is also associated with itching. In patients presenting with ND associated with a breast lump, we need to rule out malignancy which may include ductal carcinoma *in situ*, papillary carcinoma or infiltrating ductal carcinoma. Unilateral single duct blood stained copious ND is mostly due to papilloma, and 5–33% of patients may have associated malignancy. The predictors for breast cancer include the age of more than fifty years, ipsilateral breast lump, BRCA mutation-positive, and previous breast biopsy of atypia or diffuse microcalcifications in branching, linear or segmental pattern on the mammogram.<sup>4</sup>

**Table 1:** Differentiating features in all three subtypes of ND

Characteristic features	Normal ND	Physiological	Pathological
Presentation mode	Bilateral milky white colour	Yellow, green, brown multi-coloured ND	Blood stained or serous
Pertinent history	history of lactation	Any medicines intake, history of hypothyroidism Headache, visual disturbances in Prolactinomas	Any associated breast lump, nipple excoriation or axillary lymphadenopathy
Ducts involved	Bilateral multiple ducts	Bilateral multiple ducts	Usually unilateral single duct
Amount of ND	copious	Scanty or copious	Copious



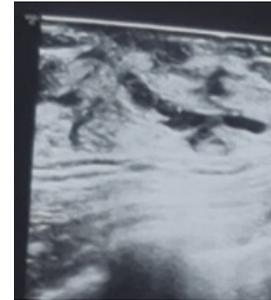
**Figure 1:** Single duct blood stained ND, multiple ducts milky white color ND, ND due to periareolar mastitis and slit nipple, multiple ducts serous and milky mixed ND, and multiple ducts serous, muddy brown ND.

The clinical examination begins with carefully examining the nipple for discharge while pressing the areola clockwise in all quadrants. Then breast and axilla are also examined for any lump or lymphadenopathy.

### Work up

Evaluation of a patient with ND includes imaging modalities with or without pathological tests. Imaging includes an ultrasound of both breasts, vital to study the breast ductal system and any intraductal mass or abnormalities (Figure 2). The predictors of malignancy on ultrasound include irregular duct wall thickening, hypoechoic intraductal nodule with increased vascularity or acoustic shadowing.<sup>5</sup> A bilateral Mammogram is essential in women over 30 years to rule out microcalcifications and malignancy and is done in addition to an ultrasound examination. Mammogram usually has low sensitivity due to small retroareolar region masses or dilated ducts. Doppler examination helps in detecting any intraductal nodule by showing the vascularity sign.<sup>6</sup> The role of Elastography in such patients is still in the experimental stage.

Contrast enhanced MRI with or without galactography of the breasts is done in selected patients. If there is bloody stained ND then cytology may be done or if there is any nipple excoriation or any breast lump then cytology or histology needs to be done. In routine cases, cytology may not be very helpful as fluid discharge may not yield any useful information.



**Figure 2:** Dilated ducts on ultrasound of the breast leading to ND.

Ductoscopy under local anaesthesia using endoscopes is done in some centres and helps us view the ducts, endoscope-directed surgery and ductal lavage.<sup>7</sup> Serum Prolactin levels and serum TSH levels are measured in patients who complain of bilateral multiple ducts copious ND.

### Treatment and Discussion

Treatment depends on the underlying cause of ND. If post-lactational, then reassurance and six monthly follow up are recommended. Women are told not to keep pressing the nipple to check for any discharge. If ND is scanty and ultrasound shows duct ectasia features, observation and six monthly follow up are also done. Duct ectasia is a duct calibre of more than 3 mm with anechoic fluid or debris.<sup>8</sup>

If ND is due to hypothyroidism, then thyroid functions are corrected by medicines. If ND is due to any chronic medications, then either stopping those medicines or switching the patient to other alternate medicines may help minimize the ND.

If there is any suspicion of intraductal lesion, then microdocectomy for a single dilated duct or macrodocectomy / cone excision for multiple dilated ducts is needed.<sup>9</sup> This surgery is done by giving a periareolar incision, cannulating the dilated duct and raising flaps to localize and excising it till mostly 5 cm in length. Another surgical approach is giving a radial incision over the nipple-areola region, cannulating the dilated duct, raising flaps laterally and excising the dilated duct by palpating the cannula. If there is malignancy, then we treat it as per the staging and need of the patient.<sup>10</sup> In patients suspected of malignancy, we prefer to do wide local excision.<sup>11</sup>

### CONCLUSION

Women presenting with nipple discharge need detailed history, examination and evaluation to plan appropriate treatment for the underlying causes.

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