

Benign Breast Disorders – An Overview

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Abstract: Breast disorders are one of the most common disorders that affect women. It is classified as benign and malignant breast disorders. The vast majority of the lesions that occur in the breast are benign. Benign breast disorders include mastalgia, mastitis, lactational breast abscess, breast cyst, fibrocystic breast changes, fibroadenoma, intraductal papilloma, ductal ectasia, gynecomastia, fat necrosis and nipple discharge. Though benign breast disorders are very common among women, it is not widely spoken and causes undue discomfort. This article gives an overview about these benign breast disorders and the management.

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I. Introduction

Benign breast disorders are also referred to as benign breast diseases or conditions. These are noncancerous disorders of the breast¹. The breast contains ductal, glandular, fibrous and fatty tissue². Breast tissue changes during a woman's entire life. Breast tissue is particularly sensitive to estrogen and progesterone hormone levels that often fluctuate during the menstrual cycle³. This may lead to breast disorders which are benign or malignant. Nearly eighty percent of all breast lumps are benign³. Benign breast disorders are 10 times more common than breast cancer⁴.

The common breast imaging tests are mammography, ultrasound and MRI which have separate guidance chapter in the BI-RADS (Breast Imaging-Reporting and Data System) atlas which is a standardized system for performing breast imaging examinations, interpreting the findings, reporting the results, communicating recommendations to patients and providers, and auditing statistical performance⁵. The BI-RADS scores range from 0 to 6 which are as follows: 0- incomplete, 1-negative, 2-benign findings, 3-probably benign, 4-suspicious abnormality, 5-highly suspicious of malignancy and 6-known biopsy with proven malignancy^{6,7}.

Benign breast diseases constitute a heterogeneous group of lesions including developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations, and neoplasms⁸. The common benign breast disorders which are discussed below include mastalgia, mastitis, lactational breast abscess, breast cyst, fibrocystic breast changes, fibroadenoma, intraductal papilloma, ductal ectasia, gynecomastia, fat necrosis and nipple discharge.

Mastalgia

Mastalgia refers to breast pain which may be cyclical or noncyclical. It is the most common breast-related complaint in women. Cyclical mastalgia coincides with the menstrual cycle and it affects two-thirds of patients with true mastalgia⁹. The breast pain may last 2 or 3 days or most of the month with diffused breast tenderness or heaviness. The pain is related to hormonal sensitivity and the symptoms often decrease with menopause. Noncyclical mastalgia has no relationship to the menstrual cycle and can continue into menopause. It may be constant or intermittent throughout the month and lasts for several years. Symptoms include burning, aching, or soreness in the breast. The pain may be from trauma, fat necrosis, ductal ectasia, costochondritis, or arthritic pain in the chest or neck radiating to the breast¹⁰.

It has been suggested in a study that mastalgia symptom does not per se result in suspicion of malignancy, but physical examination and radiological imaging is also needed for confirmation^{9,11}. Mammogram (x-ray of breast) and ultrasound can be done to aid the diagnosis. Vitamin E supplements and Tab Primrose obtained from the primrose plant (as shown in Fig 1) can be helpful in reducing pain. GLA (gamma-linolenic acid) present in evening primrose oil helps inhibit prostaglandins that cause cyclical breast pain.



Fig 1. Primrose (Source: https://en.wikipedia.org/wiki/Primula_vulgaris)¹²

Patient can be encouraged to decrease the salt and caffeine intake^{10,13}. A combination of quality reassurance, regular clinical assessments during follow-up, breast support garment and diclofenac gel are usually effective¹⁴.

Mastitis

Mastitis refers to inflammation of the breast. Occurs most frequently in lactating women and is called as lactational mastitis. It is mostly caused by *Staphylococcus aureus*. Clinical manifestations include localised erythematous area which is warm to touch, indurated, painful and tender on palpation. Occurs most often unilaterally. Diagnostic tests include culture of breast milk, mammogram and ultrasound⁸. Mastitis is treated with antibiotics, analgesics and antipyretics. Adequate breast support, personal hygiene, rest and hydration should be encouraged¹⁰.

Lactational Breast Abscess

Breast abscess is a localized collection of pus within the breast during the period of lactation. It is often a complication of lactational mastitis and is caused by *Staphylococcus aureus* and *Streptococcal* species. The skin may become red and edematous over the involved breast, palpable mass and fever may be present¹⁵. Antibiotics like Cloxacillin and linezolid can be given for treatment. Ultrasound-guided drainage of the abscess or surgical incision and drainage may be done¹⁰. Breastfeeding can continue in most cases with ongoing treatment of the abscess.

Breast Cyst

Cysts are fluid-filled sacs that are almost always benign. These are more common in premenopausal women aged 35-50 years¹⁰. After menopause, cysts occur less often and doesn't increase the risk of breast cancer¹⁶. It may develop as a result of hormonal changes from monthly menstruation where excess estrogen in the body stimulates the breast tissue leading to formation of breast cysts¹⁷. The clinical manifestations include palpable fluid-filled mass, movable round or oval lumps, soft texture like a grape or a water-filled balloon but sometimes firm and nipple discharge that may be clear, yellow, straw coloured or dark brown¹⁷. Breast cysts may be defined by their size as (i) Microcysts – these are too small to feel, but may be seen during imaging tests (mammography or ultrasound) and (ii) Macrocysts – these are large enough to be felt and can grow to about 2.5 to 5 cms in diameter¹⁷.

Cysts are diagnosed with breast ultrasound and/or a fine needle aspiration¹⁶. No treatment is required usually¹⁰. Fine needle aspiration can be done to remove the fluid¹⁸. To avoid cysts naturally, women can be encouraged to (a) avoid chocolate, tea, coffee^{3,19} (b) eat a healthy natural diet including calcium supplements (c) massage breasts regularly and avoid wearing tight bra as a tight bra causes tightening of the muscles and hinders the lymphatic glands from draining of fluids which leads to formation of cysts in the breasts²⁰ (d) take primrose as it reduces the inflammation and relieves pain¹⁷.

Fibrocystic Breast Changes

Fibrocystic breast change is also called as fibrocystic breasts or fibrocystic breast disease¹⁰. These include the development of excess fibrous tissue (fibrosis), hyperplasia (overgrowth of cells) of the epithelial lining of the mammary ducts, proliferation of mammary ducts and cyst formation⁸. Fibrocystic breast change (FBC) is extremely common and occurs in 90% of women during their lives²¹. It may be caused due to a heightened responsiveness of breast tissue to circulating estrogen and progesterone⁸.

The clinical manifestations include lumpy or doughy breasts accompanied by cyclic pain and tenderness. Nodularity is present and the mass is movable and soft. Clinical breast exam, mammography, ultrasound, fine needle aspiration or breast biopsy are done to diagnose. Treatment is not usually required. Symptomatic treatment for mastalgia and breast cyst may be followed and the other treatment options are fine needle aspiration and surgical excision²².

Fibroadenoma

Fibroadenoma is a solid, noncancerous breast lump which occurs most often in women between the ages of 15 and 35 years²³. The cause is unknown but can be related to increased estrogen sensitivity in a localized area of the breast²⁴. Fibroadenoma feels firm, smooth, rubbery or hard and has a well-defined shape. It is usually small (but can be about 2 to 3 cms), painless, round and well delineated^{8,10}. Fibroadenoma is also called as breast mouse as it is very mobile and the lump moves away from the fingers when pushed²⁴. Fibroadenoma can be easily detected on clinical breast examination. Mammogram, ultrasound, FNA (Fine Needle Aspiration) are the diagnostic tests. Core or surgical biopsy is done for confirmation¹⁰. Treatment is not usually required and observation with regular monitoring after a malignancy has been ruled out is essential. Lumpectomy or excisional biopsy and cryoablation which refers to freezing and destroying the tissue are the treatment options⁸.

Intraductal Papilloma

Intraductal papilloma is a benign, soft, wartlike growth found in the mammary ducts and usually found in women 40 to 60 years of age. A single duct or several ducts may be involved with intermittent or spontaneous bloody nipple discharge from one breast. Papillomas are found beneath the areola and difficult to palpate. Ductograms (x-rays of the breast ducts), ultrasound, mammogram and biopsy can be done for diagnosing intraductal papilloma. Treatment involves excision of the papilloma and the involved duct or duct system²⁵.

Ductal Ectasia (duct dilation)

Ductal Ectasia is also termed as periductal mastitis⁸. It is a benign breast disease of perimenopausal and postmenopausal women involving the ducts in the subareolar area. Clinical manifestations include unilateral or bilateral non-bloody nipple discharge, skin or nipple retraction and mass¹⁴. It is initially painless but may progress to burning, itching, and pain around the nipple and swelling in the areolar region. Mammogram and biopsy may be required to exclude malignancy⁸. Duct ectasia sometimes may not require treatment. Warm compresses and antibiotics can be used. Surgical excision of the abnormal duct may be done²⁶.

Gynecomastia

Gynecomastia is a transient, noninflammatory enlargement of one or both breasts and is the most common breast problem in men. Breast gland enlargement in males may affect newborns, boys during puberty, and older men. It is caused due to the disturbance of the normal ratio of active androgen to estrogen in plasma or within the breast itself. By adulthood, 90% of the cases are resolved. Excision of excess glandular tissue and liposuction (removal of excess fatty tissue) are the available treatment options²⁷.

Fat Necrosis

Fat necrosis is a breast lump made of damaged or dead fatty tissue. It is caused by accidental trauma, radiation therapy and surgery to the breast (including breast reconstruction)²⁸. Clinical manifestations include painless lump, red, bruised or thicker skin around the lump and nipple or skin retraction¹⁵. Ultrasound, MRI, mammogram and biopsy can be done to help with the diagnosis. Normally, more than one test may be needed to make a definitive diagnosis of fat necrosis. Treatment is mostly not needed if not bothersome. Treatment options include needle aspiration to drain the oily contents and surgical removal of the lump²⁸.

Nipple Discharge

Nipple discharge in women who are not lactating may be due to carcinoma, papilloma, pituitary adenoma or cystic breasts. Figure 2 shows about the colour of the nipple discharge and the possible disorder associated with it. One in three women has clear discharge on expression. Nipple discharge is classified as pathologic if it is spontaneous, bloody, unilateral, or associated with a breast mass. Patients with pathologic discharge should undergo diagnostic imaging. Galactorrhea is the commonest cause of physiologic discharge which is not associated with pregnancy or lactation²⁹. The treatment for the pathologic nipple discharge will be according to the cause.

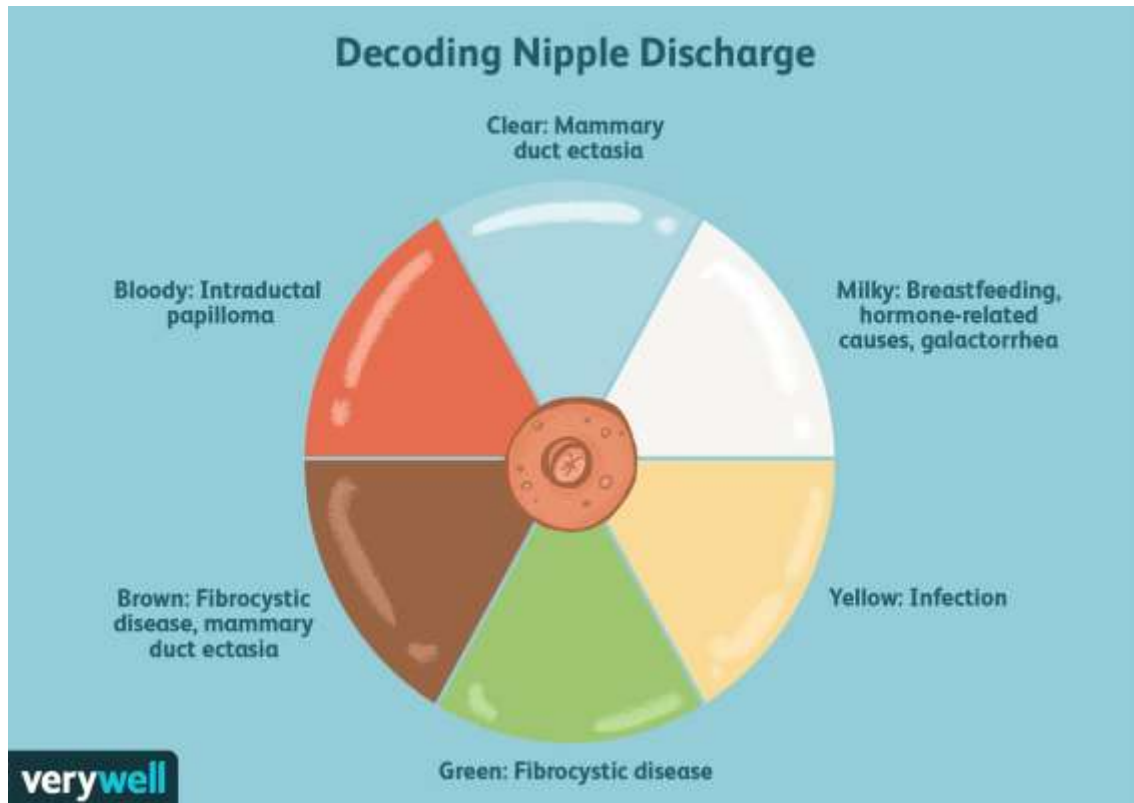


Fig 2. (Source: <https://www.verywellhealth.com/benign-nipple-discharge-430412>)³⁰

Mrs. X, 30 yrs old female came to the outpatient department with the complaints of having bilateral, diffuse breast pain radiating to the upper limbs for the past 6 months. The pain was present a week before menstruation and subsided with the onset of menstruation. No masses were felt on palpation. Ultrasound revealed no abnormalities. She was diagnosed to have cyclical mastalgia. Mrs. X, as discussed earlier with cyclical mastalgia, was counselled and reassurance was provided. She was encouraged to come for regular followup and diclofenac gel was prescribed. She was advised to wear breast support garments.

II. Conclusion

Benign breast disorders represents a spectrum of disorders that come to clinical attention as imaging abnormalities or as palpable lesions found on physical examination. Treatment of benign breast disorder in general is aimed at symptomatic relief and patient education⁹. Hence it is essential for the nurse as a health team member, to review and update her knowledge periodically about benign breast disorders and provide appropriate health education in order to create awareness among the patients.

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