



Management of benign breast conditions



Part 3 – other breast problems

Meagan Brennan, BMed, FRACGP, DFM, FASBP, is a breast physician, NSW Breast Cancer Institute, Westmead Hospital, New South Wales. meaganb@bci.org.au

Nehmat Houssami, MBBS, FAFPHM, FASBP, PhD, is Associate Clinical Director, NSW Breast Cancer Institute, Westmead Hospital, and Honorary Senior Lecturer, Screening and Test Evaluation Program, School of Public Health, the University of Sydney, New South Wales.

James French, MBBS, FRACS, is a breast and endocrine surgeon, NSW Breast Cancer Institute, Westmead Hospital, New South Wales.

This is the third article in a series of breast disorders with an emphasis on diagnosis and management in the general practice setting. This article discusses conditions that, although less frequently seen in general practice, pose challenges in diagnosis and management.

Nipple discharge

Nipple discharge may be:

- spontaneous (fluid is secreted from the nipple without squeezing of the nipple or pressure on the breast)
- on expression (fluid is secreted from the nipple only when it is squeezed or there is pressure on the breast).

Other important information to characterise nipple discharge includes whether it is unilateral or bilateral, the fluid colour (clear, yellow, milky, green, brown, bloodstained) and the number of ducts involved (single or multiple).

Physiological nipple discharge

Fluid can be obtained from the nipples of 50–70% of asymptomatic women when massage or breast pumps are used.¹ This discharge of fluid from a normal breast is referred to as 'physiological discharge'. It is usually yellow, milky, or green in appearance; does not occur spontaneously; and can be seen originating from multiple ducts. Physiological nipple discharge is no cause for concern. Such discharge can sometimes be noted after breast compression for mammography.

Milky nipple discharge (either spontaneous or on expression) is also physiological during pregnancy and lactation, and may be prolonged following lactation.

Abnormal nipple discharge

Nipple discharge that is spontaneous and unrelated to pregnancy or lactation is considered abnormal. In the majority of cases it has a benign cause. Spontaneous discharge caused by significant pathology is more likely to be unilateral, localised to a single duct, and crystal clear or blood stained in appearance (*Table 1*).

Investigation

A detailed history will provide information about whether the discharge is spontaneous or on expression, and the colour, frequency, and duration of the discharge. Physical examination is essential to exclude any associated nipple ulceration, skin change, or breast mass. An attempt to reproduce the discharge by expressing the nipple is important to assess the appearance of the fluid and the number of ducts fluid is originating from. Often the patient is able to produce the discharge herself, which may be less uncomfortable than attempted

expression by the examining doctor.

Physiological discharge (ie. discharge on expression only) is from multiple ducts, is milky, green, or yellow in appearance, and requires no specific investigation. Checking for hyperprolactinaemia is warranted in women presenting with persistent galactorrhoea.

Abnormal discharge (ie. discharge that is spontaneous, single duct, and clear or bloodstained) needs investigation. This will usually include mammography that may include magnification views behind the nipple, and breast ultrasound. Other investigations include:

- cytological assessment of nipple fluid or nipple scrapings (has limited accuracy and should only be performed selectively in women with spontaneous bloodstained single duct discharge. In this group, the finding of malignant cells is highly specific for underlying malignancy)
- ductography/galactography (may be helpful, but is not widely available and may be painful for the patient).

Associated breast lumps, skin or nipple changes, or imaging abnormalities found during the workup for nipple discharge need to be investigated on their individual merits.

Table 1. Causes of abnormal nipple discharge

- Duct ectasia – a benign condition with dilatation and inflammation of the ducts under the nipple, usually causes a bilateral yellow, green, or brown discharge from multiple ducts
- Duct papilloma – typically causes a clear or bloodstained discharge. Papillomas are usually benign but may rarely be associated with breast cancer and therefore are always surgically removed
- Nipple eczema – eczema or dermatitis affecting the skin of the nipple, particularly if infected, can cause a weeping, crusty, nipple discharge
- Breast cancer – breast cancer is an uncommon cause of nipple discharge. Only about 3% of women with breast cancer have nipple discharge, and most of these have other symptoms such as a lump or newly inverted nipple in addition to the discharge.³ Cancer that causes nipple discharge is more likely to be in situ than invasive cancer
- Paget disease – a particular clinical presentation of breast cancer causing a blood stained nipple discharge with ulceration and erosion of the nipple
- Hyperprolactinaemia – high prolactin levels may cause galactorrhoea. Aetiology includes endocrine causes, eg. pituitary and thyroid disease; and drug causes, eg. oral contraceptives, hormone therapy, antiemetics, antipsychotics, cocaine, and stimulants

Management

Physiological nipple discharge requires no specific treatment. The patient can be reassured that it is not cancer. She should be advised to stop expressing as this causes more secretions to be produced, and she should return for further assessment should the discharge become spontaneous or bloodstained.

A spontaneous, bloodstained, single duct discharge that can be reproduced on clinical examination must be managed surgically with duct exploration/microdochectomy (even in the presence of normal imaging). While the likelihood of breast cancer remains small in this group, with benign pathology such as a papilloma far more likely, surgical duct exploration is essential as investigation with imaging and cytology is unable to fully exclude malignancy.

Surgery (major duct excision) is also an option for managing the persistent discharge from duct ectasia if the discharge is troublesome for the patient. This should only be offered to women who are not contemplating breastfeeding in the future.

Where the history suggests spontaneous discharge, but clinical and imaging evaluation is normal and there is no evidence of discharge when pressure is applied to the nipple/areola region, then clinical follow up in 2–3 months is recommended. Asking the patient to

document episodes of discharge in a diary may also be helpful.

Inflammatory breast conditions

Breast infection and inflammation may result from several benign conditions.

Mastitis

The most common condition is lactational mastitis. This usually presents in the first few weeks of breastfeeding, with breast pain, swelling, lump or lumps, and redness of the skin overlying the breast infection/abscess. Lactational mastitis is a bacterial infection usually caused by *Staphylococcus aureus*. Poor positioning and poor attachment of the infant during feeding, along with milk stasis, contribute to the infection. Lactational mastitis requires prompt treatment with antibiotics. First line antibiotics include:

- oral flucloxacillin or dicloxacillin 500 mg four times per day for 10 days, or
- cephalexin 500 mg four times per day for 10 days.²

Where there are systemic symptoms or significant cellulitis, intravenous antibiotics may be needed. Continued frequent feeding from the affected breast, with advice on infant positioning and attachment form an important part of management.

Breast abscess should be considered if

there is not a rapid clinical response to antibiotics or if there is a firm, discrete lump palpable in the breast. If a breast abscess is suspected, an ultrasound examination should be performed. Any localised collection of pus or infected milk should be aspirated to dryness. This is usually performed under ultrasound guidance, and aspiration may need to be repeated every few days. The aspirate should be sent for microbiological assessment. In cases that do not resolve with repeated aspiration, admission to hospital for intravenous antibiotics and surgical drainage may be required.

Nonlactational mastitis may be associated with underlying cysts. The clinical presentation is similar to that of lactational mastitis and treatment is with antibiotics.

Periductal mastitis is an inflammatory condition that presents with nipple redness and discharge. It occurs in young women, and is associated with smoking in 90% of cases.⁴ Recurrent episodes of periductal mastitis are common and may necessitate surgical excision of the nipple ducts. Surgery is often complicated by poor wound healing.

Investigation

Lactational mastitis may be treated with antibiotics without investigation provided there is close clinical surveillance with investigation (usually breast ultrasound) if symptoms do not resolve in 24–48 hours.

Nonlactational inflammatory breast symptoms should be investigated as any other breast symptom. Lesions found to be benign on initial assessment should be followed to complete clinical and imaging resolution.

Inflammatory breast cancer

This is a specific clinical presentation of breast cancer that should be considered in the differential diagnoses of every inflammatory breast condition. Inflammatory carcinoma represents 1–4% of breast cancers, and has a particularly poor prognosis.⁵ The classic presentation is one of rapid onset of breast mass, pain, breast enlargement, and skin changes (red or purple, and 'orange peel' in appearance). Axillary lymph node involvement

is almost universal. Breast imaging may reveal subtle changes of increase in skin thickness and increase in tissue density rather than the classic features of breast cancer such as a spiculated lesion with microcalcification.⁵

Infective conditions should be followed to complete clinical and imaging resolution, and where an infective lesion does not resolve, or does not behave as expected, the diagnosis of inflammatory breast cancer should be considered. Inflammatory symptoms should be investigated as with other breast symptoms with imaging followed by fine needle biopsy or core biopsy of any abnormalities. Where there are significant skin changes such as erythema or an 'orange peel' appearance, skin biopsy may confirm the diagnosis of inflammatory breast cancer.

Gynaecomastia

Gynaecomastia is the benign proliferation of glandular tissue of the male breast. Most patients with gynaecomastia are asymptomatic. Symptomatic patients may present with breast or nipple pain or tenderness, breast enlargement, or a breast lump. Causes of gynaecomastia are outlined in *Table 2*.

Investigation

Investigation aims to distinguish gynaecomastia from male breast cancer. On clinical examination, gynaecomastia is usually subareolar, often bilateral, and rubbery in texture. Breast cancer in men is more likely to be eccentric in location, unilateral, and firm or hard. Nipple retraction, discharge, or skin dimpling may be present.

In general, gynaecomastia may be investigated with triple testing (clinical and imaging assessment, and fine needle biopsy) as with any female breast symptom. However, biopsy may not be warranted where there are typical clinical and imaging findings, or where there is an obvious cause. Further investigation is directed by symptoms, and may include:

- a thorough drug history
- clinical examination for goitre, liver disease, abdominal masses, testicular masses
- blood tests for human chorionic gonadotropin (hCG), oestradiol, testosterone, and

Table 2. Causes of gynaecomastia

Physiological causes

- **Infancy** – 60–90% of infants have transient gynaecomastia due to oestrogenic stimulation from the mother and placenta (resolves neonatally)
- **Puberty** – 30–60% of boys develop transient gynaecomastia (usually develops after the age of 10 years and resolves by age 17 years)
- **Aging** – gynaecomastia is seen in an increasing number of normal adult men with increasing age (65% at age 80 years)⁶

Pathological causes

- **Drug induced (therapeutic drugs)** – androgens, anabolic steroids, oestrogens and oestrogen agonists, cyproterone, cimetidine, digoxin, spironolactone
- **Drug induced (drugs of abuse)** – alcohol, amphetamines, heroin, marijuana
- **Liver cirrhosis**
- **Malnutrition**
- **Primary or secondary hypogonadism**
- **Testicular tumours**
- **Hyperthyroidism**
- **Renal disease**
- **Idiopathic** – in 25% of cases of gynaecomastia, no specific cause is identified

luteinising hormone

- testicular ultrasound, and
- abdominal computerised tomography (CT).

Management

Treatment is not required in asymptomatic patients. In those complaining of significant breast pain, tenderness, or embarrassment, treatment may be indicated including:

- stopping any drugs that may be causing gynaecomastia
- subcutaneous mastectomy (surgery to remove all of the glandular breast tissue)
- medical therapy (eg. tamoxifen, clomiphene citrate).⁶

Conclusion

Nonlactation inflammatory breast conditions, nipple discharge, and gynaecomastia are less common breast symptoms in the general practice setting than breast lumps or breast pain, but nonetheless cause considerable anxiety in patients and can pose challenges in diagnosis and management. Infective conditions should be followed to complete resolution, and where an infective or inflammatory condition does not resolve, the diagnosis of inflammatory breast

cancer should be considered. As with all breast symptoms, the GP's role involves excluding cancer and providing an explanation of the patient's condition and appropriate reassurance.

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AFP

Correspondence

Email: afp@racgp.org.au