

# The ABC of benign breast disease

**Benign breast disease tends to take a back seat to breast cancer.**

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Benign breast disease is common, although the incidence is sparsely documented in the literature and is probably quite underestimated. The main reason is that it is regarded as unimportant, with far more attention being focused on breast cancer. However, benign breast disease is far more common than breast cancer. There is now increasing interest because patients demand investigation and treatment of their symptoms.

## *Symptoms of benign breast disease*

The clinical presentation of benign breast diseases includes one or more of the following symptoms:

- breast lump
- swelling or thickening
- erythema
- pain
- nipple discharge or nipple change.

Aberrations of normal development and involution (fibrocystic disease), breast pain and nipple discharges are common, and these will be reviewed.

**Benign breast disease is far more common than breast cancer.**

## *Aberrations of normal development and involution (ANDI)*

Many so-called diseases of the breast are now regarded more accurately as aberrations of normal development and involution. The vast majority of premenopausal women experience a degree of breast discomfort and nodularity prior to menstruation. In the majority of cases this amounts to little more than an inconvenience and as such is regarded as a normal physiological process. Some women, however, present with severe distressing symptoms. The predominant symptoms are breast pain, breast lumps and lumpiness and feeling of fullness in the breasts. Nipple discharge that is often greenish-brown in colour and breast cysts are also common. In the past this was described as fibrocystic disease. Unfortunately there is poor correlation between the breast symptoms and the histological features. In some cases there is no specific histological abnormality.

Fibrocystic disease, more accurately called fibrocystic changes (Fig. 1), is commonly seen in the breast. The term describes pathological changes seen under the microscope and should not be used to describe clinical findings. The histological changes include varying amounts of fibrosis and cysts. It is generally accepted that approximately 90% of women have fibrocystic changes, and that these are more pronounced in women of reproductive age. For many women such changes are normal, without an identifiable cause.

Fibrocystic breast disease does not increase the risk of developing breast cancer.

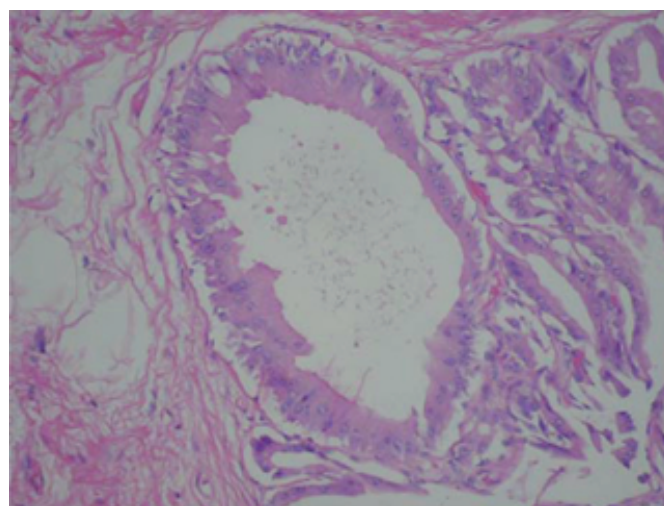


Fig. 1. Fibrocystic changes.

## *Breast pain (mastalgia)*

Breast pain is by far the most common reason for referral of patients to a breast clinic or specialist surgeons, and accounts for up to 50% of the patients seen. Nomenclature contributes to the problem, with various terms such as mastodynia, mastitis and fibrocystic disease being used. Mastalgia is the most commonly used and the most widely accepted term. Mild premenstrual breast pain is very common and affects most women at some time or another. Mastalgia is an amplification of usual breast pain, presenting with greater frequency and severity. It is important to stress that mastalgia is a symptom and does not imply any specific pathological process any more than pain in other sites of the body.

### **Aetiology of mastalgia**

Various aetiological factors have been implicated for mastalgia:

- hyperoestrogenism

## Benign breast disease

- abnormal fluid retention
- abnormal prolactin secretion
- excessive caffeine ingestion
- inadequate essential fatty acid intake
- psychoneurosis
- medication (Table I)
- age at first live birth
- nulliparity
- breast feeding.

A vast majority of clinical studies have failed to demonstrate significant differences in levels of serum progesterone, oestradiol or prolactin among women who have breast pain and those who do not. There is a weak causal relationship with some drugs.

Mastalgia may be related to infection, malignancy, or extramammary conditions such as muskuloskeletal chest wall pain (Tietze syndrome or costochondritis), cervical spine disease, cardiac disease, or others. Therefore a careful assessment is necessary to identify the underlying cause of the pain. A primary breast cancer should be ruled out because it is the leading cancer among women.

## Fibrocystic breast disease does not increase the risk of developing breast cancer.

There are two distinct types of mastalgia – cyclical and non-cyclical. Cyclical mastalgia is breast pain with a definite association with the menstrual cycle, while non-cyclical mastalgia is unrelated to the monthly cycle. Because of the cyclical relationship to the menstrual cycle, cyclical mastalgia is generally found in premenopausal women, with the commonest age of presentation being 15 - 40 years. This pain is frequently, but not always, bilateral. Non-cyclical mastalgia, on the other hand, occurs in both pre- and postmenopausal women. It has a more chronic presentation and tends to be unilateral. Sometimes the pain is well localised. Non-cyclical mastalgia has a higher relationship with extramammary causes.

### Treatment of mastalgia

When a woman presents with mastalgia, a thorough history and physical examination are necessary to rule out any underlying pathology. Mammography, breast ultrasound or breast biopsy may be warranted for diagnostic purposes.

The reason for many referrals by general practitioners is anxiety and fear of breast cancer on the part of the patient, the parent or her doctor. It is therefore important not only to treat the symptoms but also to allay any fears that may exist. It is imperative to emphasise that mastalgia does not imply any neoplastic process.

Mastalgia that seems to be related to menstrual cycle changes is usually mild, and reassurance of its benign nature may be all that is necessary, along with firm brassiere support and, possibly, the use of mild analgesics. Underlying precipitating factors, such as marijuana or other drug use, should be eliminated. Some patients benefit from avoidance of methylxanthines (i.e. caffeine

in cola, tea, and coffee), chocolate, and dairy products. Relief may not be immediate, but symptoms generally improve within 3 - 4 months.

Evening primrose oil (a mixture of linoleic and linolenic acid) has been shown to be effective in patients with cyclical mastalgia. It is regarded by most patients as a natural homeopathic substance whose only significant side-effect is nausea.

Danazol is an antigonadotropin agent that may be used as a second-line agent (after evening primrose oil) to manage adult women with severe refractory mastalgia at a dose of 200 - 400 mg daily. It has no proven benefit in adolescent girls. It has a number of potential adverse reactions, including weight

**Table I. Medication associated with mastalgia**

#### Common

- Oral contraceptives
- Hormone replacement therapy
- Antidepressants
- Digoxin
- Methyldopa
- Spirolactone
- Chlorpromazine

#### Other

- Amphetamines
- Anabolic steroids
- Busulfan (and other chemotherapeutic agents)
- Cimetidine
- Clomiphene
- Corticosteroids
- Insulin
- Isoniazid (and other antituberculosis drugs)
- Ketoconazole
- Marijuana
- Reserpine
- Spirolactone
- Testosterone
- Tricyclic antidepressants

**Table II. Medication used to treat mastalgia**

- Simple analgesia
- Non-steroidal anti-inflammatory drugs
- Evening primrose oil
- Vitamin E
- Flaxseed
- Magnesium
- Oral contraceptives
- Danazol
- Tamoxiphen
- Bromocriptine

gain, acne, amenorrhoea, masculinisation with hirsutism, voice change, reduction in breast size and teratogenicity. When treating mastalgia one should therefore always remember the classic dictum: 'first do no harm'.

Other treatment modalities include oral contraceptives which may improve (or worsen) breast pain; bromocriptine; vitamin E supplementation (600 IU/d) which has anecdotal, but no research-based, support for improvement; vitamin E cream application; flaxseed; and topical non-steroidal anti-inflammatory gel.

## Secretions (discharge) from the nipple are not unusual, or even necessarily a sign of disease.

Surgery has virtually no role in the treatment of mastalgia although there is some success in excision of focal areas of mastalgia when associated with a localised lump as part of ANDI. Occasionally patients with a long history of unresponsive mastalgia demand consideration of mastectomy to release them from their discomfort. This should be avoided.

### Nipple discharge

Nipple discharge is a common presenting symptom. Patients with nipple discharge often fear cancer, and the discharge may cause annoyance and social embarrassment. Since the breast is a gland, secretions (discharge) from the nipple are not unusual, nor even necessarily a sign of disease. Nipple discharge comes in a variety of colours and textures. Possible causes of nipple discharge are listed in Table III.

**Table III. Causes of nipple discharge**

Physiological
Galactorrhoea
Mammary duct ectasia
Intraduct papilloma
Carcinoma
Purulent discharge from breast abscess
Drugs (e.g. ranitidine, phenothiazines, oral contraceptives)

It is important to ascertain whether the nipple discharge is blood-stained, spontaneous, unilateral or bilateral, or from a single duct. If there is an associated lump, then the investigation thereof becomes paramount and the discharge secondary. The presence of blood and drainage from a single duct indicates a potentially serious cause.

Physiological nipple discharge and galactorrhoea (secretion of milk not related to pregnancy or lactation) are by far the most common. In older women, mammary duct ectasia is commoner. However, the most important causes are intraduct papilloma (benign) and very rarely breast cancer.

## In most patients reassurance with careful follow-up is all that is indicated.

### Management of nipple discharge

Investigation with cytology and radiology has poor yield and is disappointing.

Some centres perform ductoscopy. This is where a tiny fibre-optic scope (less

than a millimeter thick) is introduced into the duct itself and manipulated to look at the lining of the duct system. No incision is made. This enables detection of small tumours, intraduct papillomas and some other benign changes. A normal ductoscopy has high reassurance value.

When there is blood-stained discharge, microdochotomy (excision of the offending duct) should be performed. The commonest finding is an intraduct papilloma. Copious spontaneous discharge should also be managed in a similar manner. However, in most patients reassurance with careful follow-up is all that is indicated.

### Further reading

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### In a nutshell

- Breast pain and nipple discharge are common presenting symptoms.
- Aetiological factors for mastalgia are poorly understood.
- Allaying anxiety and fears about breast cancer is important.
- Surgery plays a very small role in the treatment of mastalgia.
- The vast majority of nipple discharges are physiological.
- Blood-stained, single-duct, spontaneous discharge is worrisome.
- Cytology and radiology have a poor yield in nipple discharge.