Breast pain

Synonyms: mastalgia, mastodynia

Breast pain is one of the most common breast symptoms experienced by women, and management requires careful assessment and diagnosis. There is often understandable anxiety associated with the symptom, particularly about breast cancer. This worry is often the reason women seek medical evaluation. The risk of cancer in a woman presenting with breast pain as an isolated symptom is extremely low as breast pain is one of the least associated symptoms of breast cancer, present only in 0.5% to 2% of patients later diagnosed with cancer [1] . Therefore suitable reassurance can usually be given.

Breast pain is uncommon in men. Breast pain and tenderness may occur in men who develop gynaecomastia secondary to medication, hormonal factors, cirrhosis and other conditions. Cyclical breast pain is confined to women but both non-cyclical breast pain and extramammary pain can occur in men. The assessment of these types of breast pain is similar for men and women.

Classification [2]

Breast pain is typically approached according to its classification as:

- Cyclical breast pain - breast pain that has a clear relationship to the menstrual cycle, and the most common type of breast pain.
- Non-cyclical breast pain - may be constant or intermittent but is not associated with the menstrual cycle.
- Extramammary (non-breast) pain - is interpreted as having a cause within the breast but arises from elsewhere (the chest wall or other sources).

The classification is important because the assessment, management and response to treatment are different for the different types of breast pain. This is particularly the case in true breast pain vs extramammary pain, as the management is very different.

Epidemiology[2]

- Up to 70% of women will experience breast pain in their lifetime.
- According to data from the Netherlands and the USA, around 3% of women's consultations with their GPs are about breast symptoms, usually in women aged 30-50 years[3] .
- In patients attending for breast problems in specialist clinics and general practice, breast pain is the most common symptom. It is the presenting symptom in about half of new patients in breast clinics.
- In two thirds of cases, the pain is cyclical and is worst a week premenstrually and peri-menstrually. Cyclical mastalgia manifests at around 30 years of age; the onset of noncyclical mastalgia is notably later, at a mean age of 41[3] .

History

The history should be directed toward identifying and characterising breast-related symptoms. Establish[4] :

- Nature and duration of pain.
- Severity of pain (ranges from mild discomfort to severe tenderness and pain).
- Site of pain.
- Any relationship to activity.
- Presence of other breast symptoms (lumps, discharge).
- Relationship to menstrual cycle and periodicity. Establish whether the pain is cyclical, or whether it has no relationship to menstrual cycle.
- If there is recent or current breastfeeding.
- Medication history, particularly hormonal medication.

- Reproductive, medical and family history.

Ask about any associated problems. Such problems are common and disruptive. Likely findings include[5] :

- Sleep problems.
- Symptoms affecting sex life.
- Work, school and social disruption.
- Quality of life adversely affected.

Cyclical breast pain

Features which suggest cyclical breast pain include[6] :

- Severity of pain is variable in different menstrual cycles.
- Pain is usually present in the same part of each menstrual cycle (most commonly starting 1-3 days before menses start).
- Pain has usually settled by the time menstruation ends.
- Pain tends to be in the upper outer quadrant(s) and may extend to the axillae.
- Pain is usually diffuse and bilateral (may be more severe in one breast).
- There may be generalised swelling and lumpiness but no specific lump found.

Non-cyclical breast pain[7]

Breast pain is not related to the menstrual cycle and is more likely to be unilateral or focal. In this scenario, inflammatory, neoplastic, and vascular breast disease needs to be ruled out[3] . Some causes are listed in the 'Differential diagnosis' section below. Medication history is particularly important in this type of breast pain; establish whether the person has been on medication which may cause mastalgia - for example:

- Hormonal medication, especially hormone replacement therapy (HRT). Also oral contraceptive pills.
- Antidepressants (including sertraline, venlafaxine and mirtazapine).

- Antipsychotics (including haloperidol).
- Cardiovascular drugs (including digoxin and spironolactone).
- Antibiotics (including metronidazole) and antifungals (including ketoconazole).

Extramammary pain

Extramammary pain due to various conditions may present as breast pain. There are many such conditions (listed below in 'Differential diagnosis' section) but most common are costochondritis and other chest wall syndromes. Features such as location and radiation of pain, history of recent trauma or aggravating activities may lead the clinician to suspect the cause of the pain to be extramammary.

Examination [2] [6]

- Clinical breast examination requires careful inspection and palpation of each breast. This should include all four quadrants of each breast from the under surface of each breast right up to the upper end of the breast tail, the nipple and areola, together with examination of the regional lymph nodes.
- Palpation may demonstrate an abnormality. Commonly it reveals coarse nodular areas resembling bundles of string in the breast but check carefully for any discrete lump. Look for skin changes and nipple distortion or discharge.
- Look for signs of infection (localised redness, swelling, warmth and tenderness).
- If there is tenderness on examination, establish whether this is within the breast or in the underlying chest wall. Try lifting the breast with one hand while palpating the chest wall underneath, or ask the woman to lie on each side in turn, allowing the breast to fall away from the chest wall. It may be very reassuring for the woman if this demonstrates the area of tenderness is not within the breast tissue.
- Large pendulous breasts may be a clue that the pain is musculoskeletal in nature, especially if a well-fitting, supportive bra is not worn [7] .

- It may be appropriate to examine other potential causes of the pain. Examination of the cervical and thoracic spine, chest wall, shoulders, upper extremities, heart, lungs and abdomen may help further diagnostic evaluation.

Investigations[3] [7]

Exclude pregnancy where indicated. Refer urgently if there is a discrete lump, any sinister feature, or a past history of breast cancer.

- Ultrasonography is the preferred imaging modality in women younger than 30 years with noncyclical, focal mastalgia and no palpable mass.
- Diagnostic mammography should be performed in all women aged 30 years and older who have noncyclical, *focal mastalgia* and no palpable mass, and in all women 40 years and older who have noncyclical, *nonfocal mastalgia* and no palpable mass.
- Diagnostic imaging is not needed in patients with cyclical mastalgia if routine screening mammography is up to date and physical examination findings are normal.

Differential diagnosis[1]

The most important conditions to exclude are breast cancer, pregnancy and infection. There are, however, numerous potential causes of breast pain, including:

- Breast-related:
    - Cyclical breast pain.
    - Non-cyclical breast pain.
    - Mastitis.
    - Breast trauma.
    - Thrombophlebitis/Mondor's syndrome.
    - Breast cysts.
    - Benign breast tumours.
    - Breast cancer.
    - Lactation-associated - may have an infectious aetiology[8] .
    - Postoperative breast pain.
- Musculoskeletal:
    - Costochondritis.
    - Tietze's syndrome.
    - Bornholm disease.
    - Chest wall trauma and/or rib fracture.
    - Fibromyalgia.
    - Cervical and thoracic spondylosis/radiculopathy.
    - Shoulder pain.
    - Thoracic outlet syndrome.
- Medication - as listed above.

- Miscellaneous causes:
    - Pregnancy.
    - Herpes zoster.
    - Coronary artery disease/angina.
    - Pericarditis.
    - Pulmonary embolism.
    - Pleurisy.
    - Gastroesophageal reflux.
    - Peptic ulcer disease
    - Cholelithiasis/cholecystitis.
    - Sickle cell anaemia.
    - Psychological.

Management

Management will depend on the cause but a variety of measures which have been routinely advised by some in the past should no longer be recommended. Measures **no longer routinely recommended** include [6] :

- Diets low in fat and high in carbohydrate, or low in caffeine.
- Stopping or changing other medication, including combined oral contraceptives.
- Evening primrose oil.
- Progestogen-only contraceptives.
- Antibiotics.
- Diuretics.
- Pyridoxine.
- Tibolone.

- Vitamin E

Cyclical breast pain [6]

First-line management

- Reassurance that the pain is not due to breast cancer and an explanation as to its hormonal nature may be all the management that some women require. Studies have shown that reassurance alone is effective management in 70% of women [2] .
- A better-fitting bra and simple analgesia is the first line of treatment. Simple non-opioid analgesia can be helpful for mild discomfort.
- Topical diclofenac may be helpful. There is some consensus that topical non-steroidal anti-inflammatory drugs (NSAIDs) are effective and well tolerated but the evidence is inconclusive [9] .
- Although there is little evidence to support its use, some women find a soft support sleep bra helpful at night.
- Continue first-line measures for six months before considering second-line treatment.
- Pain will resolve spontaneously in 20-30% but has a high recurrence rate (~60%) [9] .

Second-line management

Consider referring to a specialist for other treatment options if breast pain is severe or persistent. A diary of pain and symptoms for two months may help in assessment.

Further treatment may include [1] [10] :

- Danazol (an anti-gonadotrophin) is licensed for severe breast pain and tenderness in benign fibrocystic breast disease which has not responded to other treatment. Adverse effects (commonly nausea, dizziness, rash, backache, weight gain, menorrhagia) may be minimised by reducing the dose of danazol to 100 mg from the initial starting dose of 300 mg daily, and restricting treatment to two weeks preceding menstruation. Non-hormonal contraception is essential, as danazol has androgenic effects in the fetus.

- Tamoxifen (an oestrogen-receptor antagonist) has also been shown to be effective. However, it is not licensed for mastalgia in the UK, and side-effects include hot flushes, vaginal bleeding, vaginal discharge, increased risk of thromboembolism and increased risk of endometrial cancer. Non-hormonal contraception is required during use because of potential teratogenicity. There is a risk of thromboembolism but this may be less when given for this indication, usually at a lower dose than the dose used for breast cancer, and for only the luteal phase of the cycle. Tamoxifen gel applied topically may also be effective, but is not in common use or generally available [2] .
- Goserelin injections (a gonadorelin analogue which inhibits gonadotrophin release) are occasionally used for severe refractory mastalgia. The incidence of side-effects (mainly vaginal dryness, hot flushes, decreased libido, oily skin or hair, decreased breast size, irritability) can be reduced by using in conjunction with HRT.
- Bromocriptine is now rarely used because of frequent and intolerable adverse effects (mainly nausea, dizziness, postural hypotension, constipation).
- Gestrinone (inhibits pituitary gonadotrophin).
- Toremifene (a selective oestrogen-receptor modulator).

Non-cyclical and extramammary breast pain [2]

- Non-cyclical breast pain responds poorly to treatment but resolves spontaneously in 50% of women [9] .
- Chest wall pain often responds to NSAIDs. Referred breast pain should be appropriately treated.
- Trigger spots sometimes respond to infiltration with local anaesthetic and steroid injection.
- For true diffuse breast pain a support bra, soft sleep bra and oral or topical NSAIDs may be helpful.

- For chest wall pain, gentle exercise and stretching of the muscles (for example, by swimming) are often advised but there is no evidence base for this. Lifestyle changes such as increased exercise and activity and reducing long periods of time sitting in front of a computer are also usually advised and there is some early evidence to support this [11] .
- Gabapentin, pregabalin or amitriptyline is used for neuropathic pain such as scar pain or neuralgia. External neuromodulation for postoperative neuropathic pain has also been used.
- Acupuncture has been reported as beneficial in a pilot study [12] .

Prognosis [1]

This can be difficult to predict as it will depend on the many potential underlying pathological and psychological issues. In the absence of underlying pathology there are high rates of spontaneous remission within three months to three years, although it can be affected by the age of the person at onset and the diagnosis.

- In cyclical breast pain, 60% of patients will show a successful response to therapy, but recurrence is generally seen within two years, while 20% to 30% will show complete resolution.
- In non-cyclical pain, there is often a poor response to therapy until the underlying aetiology is known and adequately treated. However, 50% of women will still have spontaneous resolution.

Further reading

- Jaiswal G, Thakur GS; An alternative yogic approach for cyclical mastalgia-A narrative review. J Family Med Prim Care. 2021 Feb;10(2):601-608. doi: 10.4103/jfmpc.jfmpc_1688_20. Epub 2021 Feb 27.
- Sen M, Kilic MO, Cemeroglu O, et al; Can mastalgia be another somatic symptom in fibromyalgia syndrome? Clinics (Sao Paulo). 2015 Nov;70(11):733-7. doi: 10.6061/clinics/2015(11)03.

Authored by:	Peer Reviewed by: Dr Colin Tidy, MRCGP	
Originally Published: 20/11/2023	Next review date: 30/01/2022	Document ID: doc_456

View this article online at: patient.info/doctor/breast-pain-pro

Discuss Breast pain and find more trusted resources at Patient.