MASTALGIA – Clinical Approach and Management for a Family Physician

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Summary

- Mastalgia or breast pain is a very common problem that is usually mild but may be severe enough to disrupt daily life.
- It may be cyclical (associated with hormonal changes during the menstrual cycle) or non-cyclical.
- Mastalgia must be evaluated just like any other breast symptom. Imaging modality to be used will depend on the age of the individual.
- The fear of breast cancer in an individual with breast pain must be addressed and reassurance must be provided after adequate investigation.
- Most cases can be addressed with reassurance, general supportive measures and analgesics. Persistent pain may require hormonal replacements.

Introduction

Among the various complaints related to the breast, mastalgia or breast pain is the most common reason for a visit to a general physician or a surgeon.[1] Although mild in most cases, it is often significantly severe in intensity as to disturb the sexual, social, sleep and physical well-being of the patient. Mastalgia may be diffuse (involving one or both breasts) or localized and is often associated with nodularity of the breast tissue. Since pain in the breast is usually related to physiological hormonal imbalance, it is important to differentiate this from pain due to breast cancer.

There are two important concerns that a patient with mastalgia may harbor- the fear of breast cancer and the fear that severe pain will affect the quality of life.[3] The treatment of mastalgia must therefore, include interventions that provide symptomatic relief along with counseling and reassurance to the patient. Mastalgia must be evaluated just like any other breast symptom (lump, nodularity, nipple discharge etc.).This short article briefly discusses the clinical approach to mastalgia and the treatment options in the setting of a general practice.

Epidemiology

Mastalgia accounts for 50 – 66% of the common breast problems that presents to general physicians and 14% of referrals to higher centers.[4,5] The typical age for the presentation is 30 – 50 years. Mastalgia is not a risk factor for breast cancer but it can be one of its presenting symptoms.[4,5] Only 1 in 200 women with mastalgia are found to have breast cancer.[4]

Classification of Mastalgia

Mastalgia may be cyclical or non-cyclical.

Cyclical mastalgia:

Cyclical pain is related to the menstrual cycle (Fig.1) and is regulated by the hormones involved in this cycle. The characteristic features are:

- It is commonly seen 1-2 weeks prior to menstrual bleeding in women and subsides with onset of menstrual bleeding. This pain arises due to proliferation of normal breast glandular tissue which is regulated by ovulatory hormones during late luteal phase.[6]
- It is seen in women between 30-40 years of age.
- Pain is usually bilateral and diffuse. It may be more severe in one breast, usually in upper outer quadrant. The pain may radiate to the upper limbs.
- Usually, there are no masses palpable. Nodularity or 'lumpiness' of breast tissue is often present and does not necessarily indicate an underlying pathology. This may be a normal variant and is often seen prior to periods as a physiological response to estrogen and progesterone levels.

Non-cyclical mastalgia:

Non- cyclical breast pain is not regulated by menstrual hormones. It is usually unilateral and focal, localized to a quadrant of the breast. The pain may be continuous or intermittent and may be present throughout the menstrual cycle. There are usually no findings on physical examination. The presence of a mass may warrant further investigation. Non-cyclical mastalgia may result from various causes, some of which are listed in Table 1.

Table 1. Causes of non-cyclical mastalgia[2]

- Cysts
- Periductal mastitis
- Stretching of Cooper's ligaments
- Traumatic fat necrosis
- Mondor's disease
- Diabetic mastopathy
- Neoplasia

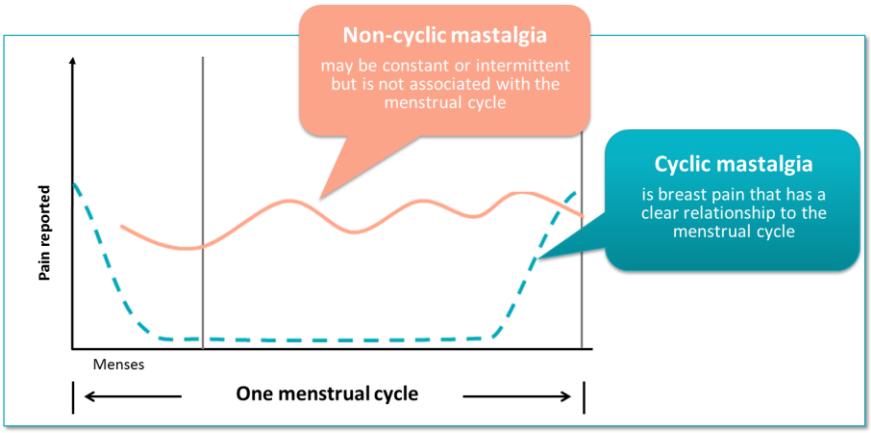


Figure 1 – Cyclical and non-cyclical mastalgia in relation to a menstrual cycle
Image source: Murtagh's General Practice, Sixth Edition[4]

Other causes of mastalgia:

Breast pain may be associated with pregnancy, oral contraceptive drugs, hormone replacement therapy, drugs (psychotropic, spironolactone, digoxin), large pendulous breasts with ligamentous strain, mastitis, smoking (nicotine increases epinephrine levels and its stimulatory effect on cyclic AMP), hidradenitis suppurativa, thrombophlebitis, trauma and prior breast surgery.

Extra mammary pain: Sometimes breast pain may not be related to the breast. This may be due to chest wall related pain (costochondritis), pectoralis major spasm, or referred pain from the heart (myocardial ischemia), peptic ulcer, esophagus, lungs and gall bladder. The general physician should be aware of these and rule out pain from other systems to avoid pitfalls in diagnosis.

Approach to mastalgia

A detailed history and physical examination is needed to identify cyclical mastalgia which needs reassurance and also helps to prevent over-investigating these normal cyclical variants.

History

The physician should note down the characteristics of pain like duration, site (unilateral/bilateral), onset (especially in relation to menstrual cycles), progression, severity, quality, radiation, aggravating and relieving factors and associated factors like fever and erythema. History to rule out involvement of other organ systems is important.

The physician should also enquire whether this pain affects her social life, sexual life and mother-child bonding. As good family physicians, it is important to inquire into the individual and clinical aspects of the patient. This would involve inquiring what their idea of the illness is, what is their concern and expectation from the physician. Any loss of function and effect on routine daily activities should also be noted. Many women who present with breast pain harbor the fear of malignancy and this fear if not addressed will result in misuse of the health systems, doctor-shopping and psychological morbidity.

Physical examination

- Make the patient comfortable and obtain her consent for examination
- Inspect the breast and look for skin changes
- Palpate for breast mass
- Palpate for supraclavicular, infra-clavicular, sub-areolar and axillary lymphnode enlargement
- Check for nipple discharge

Rule out referred pain from elsewhere – abdominal, respiratory and cardiac examination.

Imaging

In women below the age of 35 years, targeted ultrasound of the breast is recommended to rule out an underlying mass. In women above the age of 35 years, targeted ultrasonography and mammography is recommended, especially in those with high risk of breast cancer.[7] If a mass is palpable on examination, it is advisable to order imaging irrespective of age and refer to a general surgeon. Most cysts and masses are benign and do not require further investigation. However, a mass that raises the suspicion of malignancy on imaging will need an FNAC or biopsy for pathological examination. A woman who is anxious about the possibility of breast cancer may not be satisfied without imaging even if the clinical scenario is suggestive of cyclical mastalgia. In such cases, order ultrasound if age is less than 30 years or

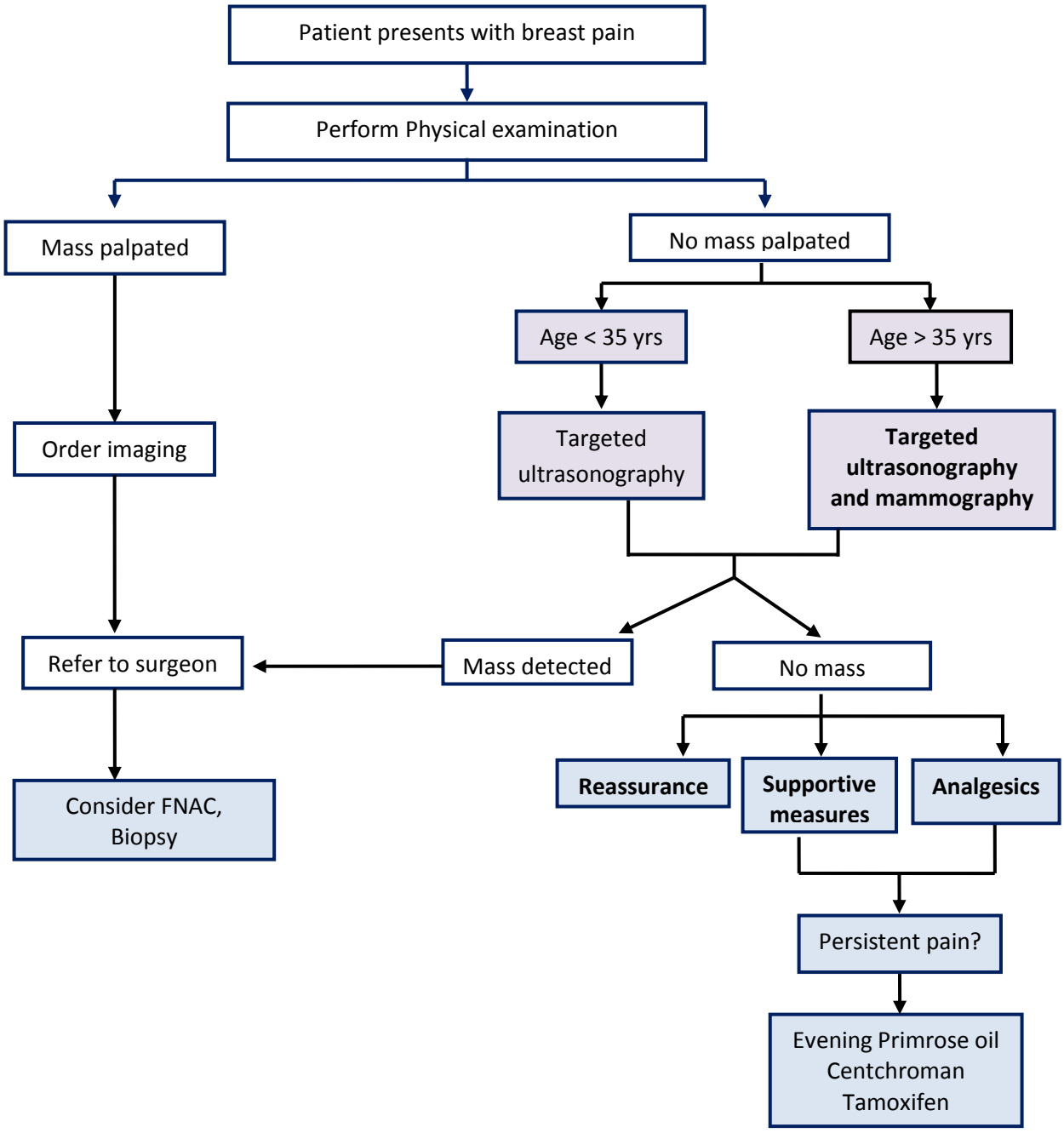
order mammography and targeted ultrasound if age is equal or more than 30 years.[5]

A suggested algorithm for the approach to a patient with mastalgia is given in Figure 2.

Reassurance:

The importance of reassurance cannot be overemphasized as the most common fear in women with breast pain is that of breast cancer. If clinical examination and investigations rule out malignancy, the patients must be counseled that the possibility of having a cancer that is undetected is very low.[9]

Figure 2: Algorithm for approach to a patient with mastalgia



Reassurance helps in improving the response to simple treatment measures and prevents unnecessary investigations and interventions.

Medications

Analgesics: Oral or topical non-steroidal anti-inflammatory drugs (NSAIDs) and paracetamol are the mainstay of symptomatic treatment. In most cases, they are the only medications required, in conjunction with supportive measures. Topical diclofenac is effective in both cyclical and non-cyclical mastalgia.

Evening primrose oil: Evening primrose oil helps in reducing pain but evidence for this treatment is inconclusive.[10,11] It contains essential fatty acid which is apparently lacking in the diet and causes production of prostaglandin E which counters the effect of estrogen and prolactin on breast.[4] The recommended dose is 1000mg three times daily for 3-4 months.

Vitamin B and E: have no role in the treatment of mastalgia.

Hormone replacement therapy: Patients with severe breast pain who do not respond to the above measures may need hormonal therapy.

Centchroman (Ormiloxefen – Novex) is a non-steroidal antioestrogen agent (used as a contraceptive pill) is effective in treatment of mastalgia and has a better side-effect profile than tamoxifen.[3] It is given at a dose of 30mg twice a week for six months. Side effects include menorrhagia in some women (if this occurs, treatment needs to be discontinued) and amenorrhea in others (patient can continue taking the tablet in this situation, periods will resume 2-3 months after completing the course). Hence, patients need to be well counseled regarding the side effects prior to starting this drug. This modality of treatment cannot be used in patients who are planning pregnancy.

Tamoxifen can be used in treatment of severe breast pain, but the disadvantage is an unfavourable side effect profile which can lead to early discontinuation in some. Tamoxifen is useful at a dose of 10 mg a day for 3 months.[4] It relieves pain in most cases of cyclical mastalgia and up to 56% of cases with non-cyclical mastalgia. Side-effects include irregular periods, hot flushes and rarely thromboembolic complications and endometrial carcinoma.

Danazol is an anti-gonadotrophin agent with mild androgenic effects which has shown some effect in treating persistent mastalgia. However, we do not recommend danazol in the management of mastalgia.

Conclusion

Mastalgia is a common problem with a simple treatment strategy. The vast majority of cases have a benign etiology and reassurance is an important aspect of management. Ultrasound and mammography may be used in selected patients to rule out the possibility of malignancy. Treatment consists of supportive measures, reassurance and analgesics, which will provide relief in most cases. Evening primrose oil, oral contraceptive pills and hormone replacement therapy may be used in cases of persistent pain.

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