

MASTOPATHY: MODERN APPROACHES TO DIAGNOSIS, TREATMENT, AND PREVENTION

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Abstract

Mastopathy, commonly associated with benign breast changes, refers to a group of conditions characterized by alterations in the glandular and connective tissues of the breast. These changes may be accompanied by breast pain, swelling, increased sensitivity, and the development of nodular or cystic lesions. This article reviews current concepts regarding the etiology and pathogenesis of mastopathy, its main clinical manifestations, diagnostic methods, and treatment principles. Particular attention is paid to the differential diagnosis of benign breast changes and malignant neoplasms, as well as the importance of preventive examinations and women's awareness of breast health. The need for an individualized approach to examination and treatment based on age, symptoms, and imaging findings is emphasized.

Keywords: Mastopathy, breast, fibrocystic changes, mastalgia, hormonal factors, ultrasonography, mammography, diagnosis, treatment, prevention.

Introduction

Breast diseases and benign breast changes occupy an important place in modern mammology and gynecology. They occur frequently among women of reproductive age and may manifest as pain, swelling, increased sensitivity, and palpable areas of breast tissue thickening.

The term mastopathy has traditionally been used to describe various benign changes in the breast. In contemporary medical practice, the term fibrocystic changes is increasingly used because it more accurately describes specific structural alterations in breast tissue.

Fibrocystic changes may include cyst formation, connective tissue fibrosis, and various epithelial proliferative changes. Their clinical significance depends not only on symptom severity but also on the morphological characteristics of the identified lesions. Simple cysts and nonproliferative changes generally have a favorable course, whereas certain proliferative lesions with atypia may be associated with an increased risk of breast cancer.

The relevance of studying mastopathy is determined by the need for timely identification of pathological changes, prevention of unnecessary treatment, and appropriate diagnostic follow-up.

Aim of the Study

To examine current concepts of mastopathy, summarize information on its etiology, pathogenesis, and clinical manifestations, and review the principal methods of diagnosis, treatment, and prevention of benign breast changes.





Materials and Methods

This article is a narrative review based on scientific publications, review articles, and clinical guidelines concerning the diagnosis and management of benign breast diseases.

The review focuses on contemporary approaches to clinical symptom assessment, the use of breast ultrasonography and mammography, indications for biopsy, and the selection of appropriate management strategies.

The article does not present results from an original clinical study.

Results and Discussion

1. Etiology and Pathogenesis of Mastopathy

The development of benign breast changes is associated with a complex interaction of hormonal, age-related, genetic, and tissue-specific factors. Estrogens, progesterone, and other hormones influence breast development and cyclic changes in glandular tissue.

In many women, breast tenderness and swelling become more pronounced during the second half of the menstrual cycle and decrease after menstruation begins. These symptoms may be associated with physiological hormonal fluctuations and increased tissue sensitivity to hormonal changes.

Factors that should be considered during clinical assessment include:

- Age and menstrual cycle characteristics.
- Reproductive history.
- Use of hormonal medications.
- Previous history of benign breast disease.
- Family history of breast or ovarian cancer.
- Findings from previous breast examinations.
- Concomitant endocrine and gynecological conditions.

However, the presence of breast pain or fibrocystic changes does not, by itself, establish a hormonal disorder. Hormonal laboratory testing should be performed when clinically indicated rather than routinely in every case of mastopathy.

2. Classification of Benign Breast Changes

In clinical practice, benign breast changes are classified according to their structural and morphological characteristics.

Nonproliferative changes include simple cysts and certain forms of fibrosis. These conditions generally have a benign course and may not require specific treatment when suspicious features are absent.

Proliferative changes without atypia are characterized by an increased number of cells in certain breast structures. Their clinical significance depends on the specific histological diagnosis.

Proliferative changes with atypia involve cellular abnormalities that require more careful assessment because some of these conditions are associated with an increased risk of developing breast cancer.





Therefore, the term mastopathy alone is insufficient to determine an individual's breast cancer risk. The precise nature of the identified changes must be established to select an appropriate management strategy.

3. Clinical Manifestations

The clinical presentation of mastopathy varies considerably. In some women, breast changes are detected incidentally during routine examinations and are not accompanied by symptoms. Others may experience:

- Pain in one or both breasts.
- Breast swelling and a feeling of heaviness.
- Increased nipple sensitivity.
- Diffuse areas of breast tissue thickening.
- Palpable cystic or nodular lesions.
- Periodic worsening of symptoms before menstruation.

Breast pain is known as mastalgia. It may be cyclic, occurring in association with the menstrual cycle, or noncyclic, occurring independently of menstruation.

Although these symptoms are frequently associated with benign conditions, they cannot be used as the sole basis for diagnosis. A new breast lump, persistent localized pain, or other unusual changes require medical assessment.

4. Modern Diagnostic Methods

The main objectives of diagnosis are to determine the nature of breast changes, exclude malignancy, and establish whether observation or treatment is necessary.

Clinical examination. The physician evaluates the patient's symptoms, their relationship to the menstrual cycle, symptom duration, and family history. Examination of the breasts and regional lymph nodes may also be performed.

Breast ultrasonography. This method is widely used to assess breast tissue structure, particularly in younger women with predominantly dense glandular tissue. Ultrasound helps distinguish fluid-filled lesions from solid masses and evaluate their size and characteristics.

Mammography. This imaging technique is used for screening according to age and individual risk, as well as for the diagnostic evaluation of suspicious breast changes. The choice of examination depends on the patient's age, symptoms, and clinical circumstances.

Biopsy. When a suspicious lesion is identified, tissue sampling may be necessary for histopathological examination. The type and necessity of biopsy are determined according to the combined clinical and imaging findings.

The BI-RADS classification system is used to standardize breast imaging reports. It helps assess the level of suspicion associated with imaging findings and determine the appropriate next steps in evaluation.





The diagnostic method should be selected individually by a healthcare professional. Not every woman with benign breast changes requires all of these examinations.

5. Differential Diagnosis

Differential diagnosis is necessary to distinguish benign breast changes from other conditions that may require specific treatment.

Depending on the clinical presentation, the following conditions may need to be considered:

- Simple and complicated breast cysts.
- Fibroadenoma.
- Intraductal papilloma.
- Inflammatory breast diseases.
- Proliferative lesions with atypia.
- Malignant breast neoplasms.

Particular attention should be paid to a new or enlarging breast lump, changes in the skin or nipple, and abnormal nipple discharge.

Simple fibrocystic changes generally do not require surgical treatment. However, the identification of a solid mass, suspicious calcifications, or architectural distortion may necessitate further evaluation and biopsy.

6. Modern Approaches to Treatment

Treatment depends on the nature of the breast changes, symptom severity, and diagnostic findings.

Observation. Asymptomatic benign changes without suspicious features often do not require specific treatment. The physician determines whether follow-up is necessary according to the imaging classification and the patient's individual risk.

Pain management. For mastalgia, a properly fitted supportive bra, topical analgesic preparations, and other symptomatic treatments may be considered. Medication selection should take contraindications and concomitant conditions into account.

Pharmacological treatment. For persistent or severe breast pain, a physician may consider additional treatment options. Hormonal medications are not automatically indicated for every diagnosis of mastopathy, as their use requires careful assessment of expected benefits, risks, and potential adverse effects.

Surgical treatment. Surgery may be considered for selected breast lesions, suspicious or confirmed pathological changes, and certain symptomatic cysts. The decision depends on imaging findings, histopathological results, and the patient's clinical condition.

Dietary supplements and herbal products should not replace diagnostic evaluation or treatments supported by reliable scientific evidence.





7. Prevention and Lifestyle Recommendations

Preventive measures aim to support overall health, facilitate the timely detection of pathological changes, and address modifiable risk factors.

The main recommendations include:

1. Maintaining regular physical activity and a healthy body weight.
2. Following a balanced diet that includes adequate amounts of vegetables, fruits, and other sources of dietary fiber.
3. Limiting alcohol consumption, given its association with an increased risk of breast cancer.
4. Avoiding smoking and maintaining healthy sleep habits.
5. Participating in breast cancer screening according to age and individual risk.
6. Seeking medical evaluation if new lumps, skin or nipple changes, or unusual nipple discharge occur.
7. Discussing family history with a healthcare professional and considering additional assessment when hereditary predisposition is suspected.

There is no universal method for preventing every form of mastopathy. Lifestyle modifications can support general health but do not replace diagnostic evaluation and follow-up when symptoms are present.

8. The Importance of Women's Awareness

Women's awareness of breast health plays an important role in seeking timely medical care. Insufficient knowledge may lead either to the neglect of suspicious symptoms or to excessive anxiety about benign breast changes.

Health education should explain the nature of benign breast conditions, the role of imaging examinations, and the importance of individualized follow-up.

Particular attention should be paid to the fact that breast pain does not necessarily indicate cancer, while the absence of pain does not exclude serious pathology. Timely examination and assessment of clinical risk factors are therefore essential.

Conclusion

Mastopathy is a broad term used to describe various benign breast changes that differ in their clinical presentation, morphological characteristics, and prognostic significance.

Modern management involves identifying the specific nature of breast changes, evaluating symptoms and individual risk, and appropriately using ultrasonography, mammography, and biopsy when indicated.

In uncomplicated benign conditions, observation and symptomatic treatment are often sufficient. Suspicious lesions or atypical proliferative changes require further diagnostic evaluation and an individualized management plan.

Therefore, improving women's awareness, refining diagnostic approaches, and avoiding unnecessary treatment are important priorities in contemporary breast care. An integrated approach helps identify clinically significant changes in a timely manner, reduce patient anxiety, and ensure appropriate medical follow-up.





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