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Benign Breast Diseases In Women: A Review

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ABSTRACT

Benign breast diseases can occur any time during the life span of a female^[1]. Breast is a dynamic organ which undergoes cyclical changes throughout a woman's reproductive life. Hormones and growth factors acting on the epithelial and stromal elements right from the onset of puberty till menopause cause significant morphological changes leading to Aberration in Normal Development and Involution (ANDI) inflicting majority of benign breast illnesses.^[2]

Keywords: Benign breast diseases, Fibroadenoma, Fibroadenosis, Breast abscess.

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INTRODUCTION

The breasts are specialized organs, that are located on the anterior chest wall. The female breast is greater developed than the male breast, as their primary feature is to produce milk for vitamins of the little one and child. Female hormones inclusive of oestrogen and progesterone are essential in promoting growth and changes that arise inside the breast, especially for the duration of pregnancy and the menstrual cycle^{[3][4]}

Physiological Changes In Breast

- 1) Changes during menstrual cycle
- 2) Changes during pregnancy
- 3) Changes during lactation
- 4) Changes at menopause

1) Changes during Menstrual cycle

Retention of fluid during luteal phase, breast engorgement and pain.^[5-7]

2) Breast Changes During Pregnancy

During pregnancy, many adjustments arise within the breast, to put together for the child and produce milk. Cells within the glands of breast tissue change shape and increase in size and number. Later in being pregnant, subsequent increases in breast size arise via cells which secrete milk products and those secretory products gathering within the ducts. A special thick white/yellow fluid known as colostrum is produced within the breast throughout the previous couple of weeks of being pregnant and first few episodes of nursing. This is rich in protein and agents which protect the infant from harmful substances together with microorganism.^[5-7]

3) Changes During Lactation

The alveoli are distended with milk, the cells become cuboidal, there is resultant diminution of intralobular space.^[5-7]

4) Changes At Menopause

Menopause is when a woman has no longer menstrual periods. At this stage, the ovaries have stopped releasing eggs and generating most in their estrogen. Menopause is diagnosed when a female has gone without a period for 12 consecutive months

BENIGN BREAST DISEASES

The term “Benign breast diseases” includes a heterogeneous group of lesions and may present with wide range of symptoms^[8]. Benign breast disease is a neglected entity despite the fact that it constitutes the majority of breast complaints.^[9] The vast majority of the lesions that occur in the

breast are benign. Breast is a dynamic organ which undergoes cyclical changes throughout a woman's reproductive life. Hormones and growth factors acting on the epithelial and stromal elements right from the onset of puberty till menopause cause significant morphological changes leading to Aberration in Normal Development and Involution (ANDI) causing majority of benign breast diseases. [2] Benign breast diseases can occur any time during the life span of a female. The aberrations of normal development and involution (ANDI) classification of benign breast diseases provides an overall framework for benign conditions of the breast that encompasses both pathogenesis and the degree of abnormality [1]. It is a bidirectional framework based on the fact that most benign breast diseases arise from normal physiologic processes. Most benign breast diseases can be regarded as minor aberrations of normality and hence do not demand specific treatment [1]

CLASSIFICATION OF BENIGN BREAST DISEASES

1) Non proliferative breast lesions

1a) simple breast cysts

1b) papillary apocrine change

2) Proliferative breast lesions without atypia

2a) Usual ductal hyperplasia

2b) Intraductal papilloma

2c) Sclerosing adenosis

2d) Simple fibroadenomas

3) Atypical hyperplasia (Atypical ductal and lobular hyperplasia)

4) Flat epithelial atypia

5) Miscellaneous lesions of the breast

5a) Lipoma

5b) Fat necrosis

5c) Giant fibroadenoma

5d) Juvenile fibroadenoma

5e) Complex fibroadenoma

5f) Diabetic mastopathy

5g) Galactocele

5h) Idiopathic granulomatous mastitis(IGM)

5i) Nipple discharge

5j) Breast pain

1)NON PROLIFERATIVE BREAST LESIONS

Non proliferative breast lesions are generally they are not associated with an increased risk of breast cancer ^[10]It should be noted the terms such as fibrocystic changes, chronic cystic mastitis and mammary dysplasia refer to non proliferative lesions and are not useful clinically.

1a) Simple Breast Cysts

Simple cysts are fluid filled, round, or ovoid masses derived from the terminal duct lobular unit. Breast cysts can present as breast masses or mammographic abnormalities. Cysts are common in women between 35 and 50 years old. ^[11]

1B) Papillary Apocrine Change

Papillary apocrine change is a proliferation of ductal epithelial cells showing apocrine features, characterized by eosinophilic cytoplasm. ^[11]

2) PROLIFERATIVE BREAST LESIONS WITHOUT ATYPIA

2a) Usual Ductal Hyperplasia

Ductal hyperplasia without atypia is a pathologic diagnosis, usually found as an incidental finding on biopsy of mammographic abnormalities or breast masses, characterized by an increased number of cells within the ductal space. Although the cells vary in size and shape, they retain the cytological features of benign cells. ^[11]

2b) Intraductal Papillomas

Intraductal papillomas consists of monotonous array of papillary cells that grow from the wall of acyst into its lumen. Although they are not concerning in and of themselves, they can harbor areas of atypia or ductal carcinoma in situ . papillomas can occur as solitary or multiple lesions·

2c) Sclerosing Adenosis

Sclerosing adenosis is alobular lesion with increased fibrous tissue.it can present as a mass or asuspicious finding on mammogram. No treatment is needed for sclerosing adenosis .the risk of subsequent breast cancer in this population is small, and chemoprevention is not indicated^[12]

2d) Simple Fibroadenomas

These are benign solid tumors containing glandular as well as fibrous tissue. The etiology of fibroadenomas is not known, but a hormonal relationship is likely since they persist during the reproductive years, can increase in size during pregnancy or with estrogen therapy, and usually regress after menopause. They are most commonly found in women between the ages of 15 and 35 years· ^[13]

3) ATYPICAL HYPERPLASIA

It includes both atypical duct hyperplasia and atypical lobular hyperplasia

3a) Atypical Ductal Hyperplasia

ADH is characterized by a proliferation of uniform epithelial cells with monomorphic round nuclei filling part, but not the entirety, of the involved duct.^[11]

3b) Atypical Lobular Hyperplasia

ALH is characterized by monomorphic, evenly spaced, dyshesive cells filling part, but not all, of the involved lobule. Atypical lobular hyperplasia can also involve ducts. ^[11]

4) Flat Epithelial Atypia

Flat epithelial atypia is a separate entity from Atypical ductal hyperplasia (ADH), Atypical lobular hyperplasia (ALH). Flat epithelial atypia is sometimes referred to as columnar cell change with atypia or columnar cell hyperplasia with atypia.

5) MISCELLANEOUS LESIONS OF BREAST:

5a) Lipoma

Breast lipoma are benign, usually solitary tumors composed of mature fat cells. They present as soft, on tender masses. ^[14]

5b) Fat Necrosis

Fat necrosis of the breast is a benign condition that most commonly occurs as the result of breast trauma or surgical intervention.^[14]

5c) Giant Fibroadenomas

Giant fibroadenomas refer to histologically typical fibroadenomas over 10cm in size. Excision is recommended. ^[11]

5d) Juvenile Fibroadenomas

It occurs in young women between the ages of 10 and 18 years.

5e) Complex Fibroadenomas

They present as a mass on physical examination or a nodule on mammogram or ultrasound. They are associated with a slightly increased risk of cancer when multi centric proliferative changes are present in the surrounding glandular tissue.^[15]

5f) Diabetic Mastopathy

Diabetic mastopathy also known as lymphocytic mastitis seen in postmenopausal women who have long standing type 1 diabetes mellitus. Core biopsy is recommended for diagnostic confirmation.^[16]

5g) Galactocele

Galactoceles are cystic collection of fluid, usually caused by an obstructed milk duct. Diagnosis can be made based on the clinical history and aspiration, which yields a milky substance. ^[17]

5h) Idiopathic Granulomatous Mastitis

IGM is an inflammatory mass in the breast. The symptoms are breast abscess, nonpuerperal mastitis. biopsy is necessary to make a diagnosis.

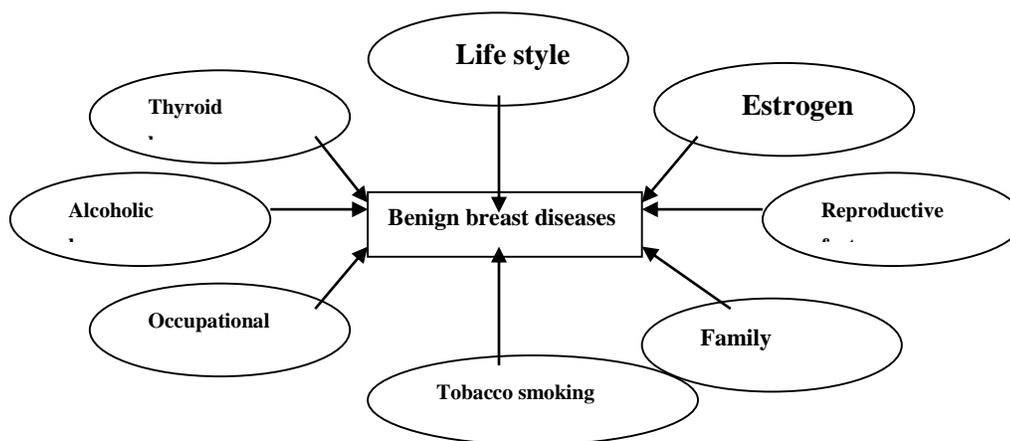
5i) Nipple discharge

Discharge is considered pathologic if it is spontaneous, persistent or arises from a single duct. it is also pathologic if the discharge contains gross blood.

5j) Breast Pain

Breast pain is classified as cyclical, noncyclical. breast cancer may present as breast pain.

RISK FACTORS FOR BENIGN BREAST DISEASES



Clinical Examination of a Patient with Benign Breast Disease.

1. Characterize symptoms
2. Identify risk factors for breast cancer
3. Age
4. At menarche
5. At first live birth
6. Number of relatives with breast cancer
7. Age at diagnosis
8. Number of previous breast biopsies
9. Presence of atypical hyperplasia or lobular carcinoma in situ on previous breast biopsy
10. If patient is postmenopausal
11. Age at menopause, Duration of use of estrogen or progestin therapy

Physical examination

- Palpate the four breast quadrants while patient is sitting and lying down

- Identify discrete lumps and examine for regional nodes, Determine whether consistency is doughy with vague nodularity findings consistent with fibrocystic changes
- Determine whether discharge is viscous, watery, serosanguineous, grossly bloody, clear, blue-black, or green and Determine whether occult blood is present
- Examine lateral chest wall while patient is lying on her side (at 90 degrees), to move breast away from chest wall

MANAGEMENT OF BENIGN BREAST DISEASES

A detailed history and physical examination are used to evaluate systematically the entire breast and the chest wall and should focus on areas related to the patient's symptoms. [18] The "triple test" of breast lumps. Mammography, often conjunction with ultrasonographic examination, [19] is required for evaluation of discrete palpable lesions in women more than 35 years of age; ultrasonography provides an optional substitute among younger women. Round dense lesions detected on mammography often are cysts that require ultrasonographic examination to distinguish them from solid lesions. For solid lesions, core needle biopsy (histologic analysis) directed with the use of radiographic provides highly discriminative information with regard to the presence or absence of malignant disease. Fine-needle aspiration suitable for cytologic evaluation.

The roles of magnetic resonance imaging (MRI) and digital mammography in the evaluation of breast lesions are currently being investigated. Galactography is useful in the detection of focal lesions within a single duct. [20]

In the treatment of all patients with benign breast disease, clinical judgment is required to provide the proper balance between the intense and frequent surveillance needed for some patients and the risk of over diagnosis and treatment for others.

Treatment:

Cyclic breast pain

The most important issue in the management of cyclic breast pain is to decide whether to treat. In the absence of a mass or discharge, moderate signs warrant reassuring the patient regarding the absence of serious or severe disease. [21] Precise fitting of a brassiere to provide support for pendulous breasts may provide pain relief. [22] Lowering the dose of estrogens in the treatment of postmenopausal women or the addition of an androgen to estrogen-replacement therapy appears to be beneficial in reducing breast pain. The use of oral contraceptives has not been systematically studied, No standard regimen for moderate-to-severe breast pain has been widely accepted. Initial recommendations may include the use of mild analgesic agents such as acetaminophen,

nonsteroidal anti-inflammatory drugs (NSAIDs), or aspirin^{[23],[24],[20]} Evening primrose oil has been used, at oral doses of 1 to 3 g daily, on the basis of two randomized studies,^[25] but recent trials question its efficacy.^[26]

Non cyclic breast pain

When pain is truly arising from the breast, the approach outlined for cyclic pain used. In two thirds of women with diffuse chest-wall pain, the condition responds to oral or topical non steroidal anti inflammatory drugs^[27]

Focal lesions

Careful examination distinguishes between solitary, discrete, dominant, persistent masses and vague nodularity and thickening. the examination should be repeated at mid cycle after one or two menstrual cycles. If the abnormality resolves, the patient should be reassured, and if it does not, the patient should be referred to a surgeon. Breast imaging may be appropriate. Women older than 35 years of age with a dominant mass should undergo diagnostic mammography^[19] and should then be referred to a surgeon. Postmenopausal women are referred for surgical consultation after undergoing mammography. For gross cysts, fine-needle aspiration with imaging studies repeated within six months. Non bloody fluid is discarded, but if the same cyst refills, surgical consultation is warranted. If bloody, the fluid should be sent for cytologic analysis and consultation with a surgeon should be requested.

Usual practice requires the triple test (palpation; mammography, often in conjunction with ultrasonography; and biopsy) for women more than 35 years of age with dominant masses.

Nipple discharge

It divides into two categories according to the presence or absence of galactorrhea. The presence of a discharge in association with a palpable mass and positive results on mammography warrants evaluation of the mass. Galactorrhea is considered pathologic if spontaneous. A workup for galactorrhea includes measurement of prolactin and thyrotropin levels and appropriate endocrinologic evaluation and treatment if the levels are elevated.^[28] If the levels of both are normal, treatment with dopaminergic agonists may be initiated if the patient desires to reduce the fluid leak. A discharge in the absence of galactorrhea is considered to be ductal in origin and is classified as either uniductal or multiductal.^[28] When the discharge is from one duct, and particularly if it is grossly bloody or the results of testing for occult blood are positive, a further workup is needed. Galactography with the use of cannulation and insertion of dye into the single duct emitting blood at the nipple allows visualization of a space-occupying lesion.

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