RECENT TRENDS IN THE MANAGEMENT OF BENIGN BREAST LESIONS

Essay

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List of Abbreviations

HRT	Hormone replacement therapy
FNAB	Fine-needle aspirate biopsy
MRI	Magnetic resonance imaging
TB	Tuberculosis
FCCs	Fibrocystic changes
PASH	Pseudoangiomatous Stromal Hyperplasia of the Breast
MLO	Mediolateral oblique view
CC	Craniocaudal view
BIRADS	Breast Imaging Reporting and Data System
MRI	Magnetic resonance imaging
PET	Positron emission tomography
FDG	Fluorine deoxyglucose
PEM	Positron emission mammography
FNA	Fine-needle aspiration
VAB	Vacuum-assisted CNB
MRI	Magnetic resonance imaging
IGM	Idiopathic granulomatous mastitis
FNA	Fine needle aspiration
PASH	Pseudoangiomatous Stromal Hyperplasia of the Breast
NCCN	Comprehensive Cancer Network
RT	Radiotherapy
cAMP	Cyclic adenosine monophosphate
NSAID	Nonsteroidal antiinflammatory drug

List of Abbreviations (Cont…)

AH	Atypical Hyperplasia
DCIS	Ductal carcinoma in situ
ADH	Atypical ductal hyperplasia
ALH	Atypical lobular hyperplasia
LCIS	Lobular carcinoma in situ
ADH	Atypical ductal hyperplasia
ALH	Atypical lobular hyperplasia
CAD	Computer-aided detection
BSE	Breast self-examination
HT	Hormone therapy

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INTRODUCTION

Benign breast lesions are very common, for many women a great deal of anxiety is associated with experiencing a breast change. The term "benign breast diseases" encompasses a heterogeneous group of lesions that may present a wide range of symptoms or may be detected as incidental microscopic findings. The incidence of benign breast lesions begins to rise during the second decade of life and peaks in the fourth and fifth decades, as opposed to malignant diseases, for which the incidence continues to increase after menopause. With the advent of hormone replacement therapy (HRT), an increasing number of postmenopausal women now present with a similar spectrum of disorders ***(Fisher et al., ٢٠٠٥).***

Much concern is given to malignant lesions of the breast because breast cancer is the most common malignancy in women in Western countries; however, benign lesions of the breast are far more frequent than malignant ones (!-٩) ***(Caleffi et al., ٢٠٠٤).***

With the use of mammography, ultrasound, and magnetic resonance imaging of the breast and the extensive use of needle biopsies, the diagnosis of a benign breast disease can be accomplished without surgery in the majority of patients. Because the majority of benign lesions are not associated with an increased risk for subsequent breast cancer, unnecessary

surgical procedures should be avoided. It is important for pathologists, radiologists, and oncologists to recognize benign lesions, both to distinguish them from in situ and invasive breast cancer and to assess a patient's risk of developing breast cancer, so that the most appropriate treatment modality for each case can be established ***(Guray and Sahin, ٢٠٠٦).***

Women with a discrete lump will undergo ultrasound examination of the questionable area and then either fine-needle aspirate biopsy (FNAB) or core biopsy. Symptomatic discrete cystic lesions will be aspirated. In some rare cases, magnetic resonance imaging (MRI) is performed in addition to mammography and ultrasound in order to establish the diagnosis. Once a firm diagnosis is established and a management plan instituted, the patient is reassured and discharged ***(Borgen and Hill, ٢٠٠٠).***

Benign breast lesions are divided into: developmental abnormalities, inflammatory lesions, fibrocystic changes, stromal lesions, and neoplasm ***(Diesing et al., ٢٠٠٤).***

Pre malignant lesions:

- Not all agree that these lesions are "pre malignant ", may be just risk markers.
- Atypical ductal hyperplasia
- Atypical lobular hyperplasia
- Lobular carcinoma in situ

(Kuusk, ٢٠٠٩).

Follow-up of Probably Benign Breast Lesions: Among the lesions detected at mammography, some are interpreted as having a very low probability of malignancy. For these almost certainly benign lesions, periodic mammographic surveillance may be recommended as the preferred alternative to open surgical biopsy or to percutaneous imaging-guided tissue sampling (by means of fine-needle aspiration or core biopsy), principally to avert morbidity. In the American College of Radiology's Breast Imaging Report and Data System Six-month mammographic follow-up is recommended more frequently than in Europe, particularly in Sweden. European radiologists' preference to recommend prompt tissue diagnosis instead of ٦-month follow-up for lesions that are assessed as probably benign ***(Sickles, ٢٠٠٠).***

AIM OF THE WORK

The aim of this essay is to review the classification of benign breast lesion, their presentations, the most recent approach to diagnosis and treatment. The risk of malignant transformation will be scrutinized with emphasis on the follow up plan and early detection of pre malignant lesions.

PATHOLOGICAL CLASSIFICATION OF BENIGN BREAST LESIONS

١. Developmental abnormalities:

a. Ectopic breast (mammary heterotopia), which has been described as both supernumerary and aberrant breast tissue, is the most common congenital abnormality of the breast. Supernumerary breast tissue is seen mostly along the milk line; the most frequent sites are the chest wall, vulva, and axilla ***(Zhang et al., ٢٠٠٢).***

It may vary in its components of nipple (polythelia), areola, and glandular tissue (polymastia) Aberrant breast tissue is usually located near the breast, most commonly in the axilla. They usually have a nipple and areola and a separate duct system from that of the normal breast. The accessory breast tissue responds in the same way as normal breast tissue to physiological influences. The absence of a duct system may cause symptoms of obstruction during lactation and may be mistaken clinically for a carcinoma. Accessory breast tissue and polymastia are more common among Asians, especially Japanese, than whites ***(Guray & Sahin, ٢٠٠٦).***

b. Excessive breast growth (macromastia) can be seen in pregnancy as well as during adolescence ***(Martins et al., ٢٠٠١).***

c. Underdevelopment of the breast (hypoplasia), when congenital, is usually associated with genetic disorders, such as ulnar-mammary syndrome, Poland's syndrome, Turner's syndrome, and congenital adrenal hyperplasia ***(Tamiolakis et al., ٢٠٠٤).***

Acquired hypoplasia, on the other hand, is usually iatrogenic, most commonly subsequent to trauma or radio-therapy. The complete absence of both breast and nipple (amastia) or presence of only nipple without breast tissue (amazia) is rare ***(Imagwa et al., ٢٠٠٢).***

d. Gynecomastia: Gynecomastia is a common condition and represents a benign proliferation of glandular tissue of the male breast. Gynecomastia occurs in three different age groups (neonatal, pubertal and elderly) ***(Lee, ٢٠٠١).***

Due to transplacental passage of estrogen, transient stimulation of breast tissue occurs in infancy. Pubertal gynecomastia has a peak incidence in males age ١٣-١٤ years and is probably due to an imbalance of estrogen and androgens. Involution generally occurs by ١٦-١٧ years. In adult males, gynecomastia increases with advancing age. The degree of

gynecomastia is dependent on the hormonal environment, the intensity and duration of stimulation and the sensitivity of breast tissue to hormonal stimulation ***(Borgen & Hill, ٢٠٠٠).***

Table (١): Certain pathological conditions are associated with Gynecomastia.

Pathological conditions associated with Gynecomastia:
Idiopathic.
Drugs (e. g., cimetidine, digoxin, spironolactone, androgens, estrogen agonists).
Alcohol.
Cirrhosis.
Malnutrition.
Primary and secondary hypogonadism.
Hyperthyroidism.
Renal disease.
Testicular tumors & Adrenal tumors.

(Braunstien, ٢٠٠٧).

٢. Inflammatory Conditions:

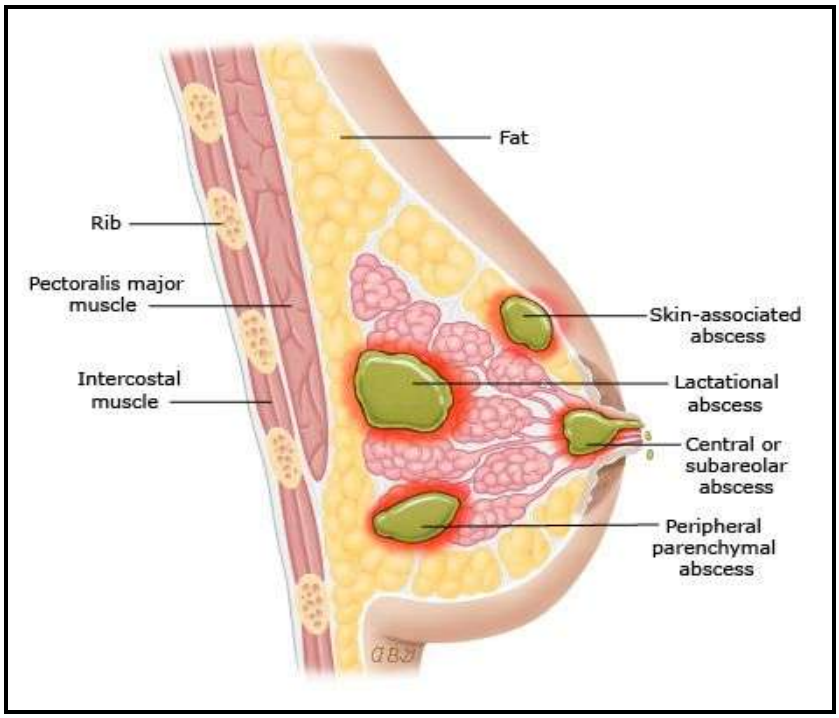

Fig. (١): Common sites and types of breast infection ***(Kamal et al., ٢٠٠٩).***

a. Infectious:

Mastitis:

A variety of inflammatory and reactive changes can be seen in the breast as a result of infectious agents or represent local reaction to a systemic disease, or localized antigen-antibody reaction and some not have a well-understood etiology classified as idiopathic (***Lockie et al., ٢٠٠٣).***

Acute mastitis usually occurs during the first ٣ months postpartum as a result of breast feeding. Also known as puerperal or lactation mastitis, this disorder is a cellulitis of the interlobular connective tissue within the mammary gland,