

REVIEW ARTICLE

BREAST LUMPS AND METHODS OF SELF EXAMINATION – A REVIEW.

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Abstract

Breast lump is a common issue and disease as females are concerned. It may present as painful lump or painless lump depending on its pathology. It is a very common finding around the world. The common breast lumps (Aberration normal development and involution of breast (ANDI), breast abscess, galactoceles, fat necrosis of breast, breast cysts phyllodes tumour, fibroadenoma and cancer breast) occurring in women are reviewed in this paper about their clinical presentation and management. The understanding of benign breast disease and malignant breast disease is more important for the general practitioners who are having more exposures to common breast lesions. The knowledge about the malignant breast lesions especially in early stages when these require radical and curative treatment, is more important on patient point of view as well. This chapter discusses about Breast Self-Examination (BSE) which would help family physician to educate the women for regular monthly examinations in different positions. Early detection of breast cancer is more important for curative treatment before this reaches advance stage when it will require palliative treatment. Patients presenting lumps in the breast are roughly from 40% to 70%. We are getting patients with breast lump in different route when they look for treatment. Some women notice their lump by breast self-examination. Few are identified through screening programs and some are diagnosed by surgeons. Sometime, most of breast lumps cases are diagnosed to be non-malignant and these cases are to be in active follow up for further evaluation to rule out malignancy. Small lumps are sometime not detected by patients and doctors in heavy breasts of fatty females. In Malaysia, Carcinoma of breast is the most common malignancy in women.

Keywords: *Breast lump, benign tumours, cancer breast, breast infection, Breast self-examination*

Introduction

More outpatients in general surgical clinic present with complaints of breast disorders. Lot of psychological disturbances could be noted when there are palpable lumps in the breast noticed by Malaysian young and old women. Sometime, most of breast lumps cases are diagnosed to be non-malignant and these cases are to be in active follow up for further evaluation to rule out malignancy future¹. Most of women in USA present lump in the breast as their main complain of the breast². Small lumps are sometime not detected by patients and doctors in heavy breast of fatty females. Now in Malaysia, carcinoma of breast is 18% which is the most common among the population³. According to the statistics about 3738 women were diagnosed with breast cancer in Malaysia in 2003. Carcinoma of breast is the most common and second most common cause of admission in public hospitals in Malaysia. The mortality rate for carcinoma breast is about 6-8% of all deaths caused by cancers⁴. Following the awareness made through various sources of media by government and other organizations about the breast carcinoma, many women are coming to surgical or breast clinic whenever they feel something abnormal in their breast.⁵ Malaysian Cancer Registry says that chances of cancer breast for a woman is one in 19 of Malaysian ladies during their life time. Each year, Malaysian public hospital is able to diagnose about 4000 new cases reporting to health systems. Breast cancer is currently the most common female cancer in Malaysia, accounting for 30.4% of all cancers diagnosed among women⁶. Another statistics states that cancer breast is now most common type and increasing death rate of women around the world⁷. There are chances of increasing incidences of breast cancer from other types of premalignant conditions like atypical ductal and lobular hyperplasia though many types breast lumps are benign and non-proliferative diseases^{8,9,10}.

Lumps:

ANDI of Breast (Aberration normal development and involution of breast) - ANDI can be defined as a breast disorders and some small aberrations during normal process of development of breast which are caused by cyclical hormonal response and involution. This includes fibrosis, adenositis, cystic diseases of breast and fibroadenositis. Clinically teen-age girls present in breast clinic with following complaints.

- Vague lump (not sure about lump) in the breast.
- History of periodic cyclical pain over breast.
- Lumps keep on changing site of breast and rarely side of the breast.
- On examination
 - Not tender and not warm
 - freely mobile lump in the breast
 - firm in consistency, irregular surface and poorly defined margin.

When middle aged and elderly women present as fibro-adenosis with features of irregular surface and poorly defined margin which are the classical finding for carcinoma of breast, breast surgeon should investigate (Mammogram and Biopsy) thoroughly to rule out carcinoma.

Common symptoms for ANDI are pain in the breast, palpable swelling in the breast and feeling of lumpiness in the breast. Green and brown colour discharge through nipple are usual. Those days it was named as fibrocystic disease of breast. The histological findings did not support clinical findings of breast conditions and there were no abnormal findings noted in histology¹¹.

Benign lumps:

Love et al stated a classification of benign breast disorders based on symptoms and physical findings. Based on clinical condition, this is the classification of benign breast condition^{12, 13}.

- I. Physiological swelling and tenderness
- II. Nodularity
- III. Mastalgia (breast pain)
- IV. Dominant lumps
 - A. Gross cysts (macro cysts)
 - B. Galactocoeles
 - C. Fibroadenoma
 - V. Nipple discharge
 - A. Galactorea
 - B. Abnormal nipple discharge
 - VI. Breast infections
 - A. Intrinsic mastitis
 - 1. Postpartum engorgement
 - 2. Lactational mastitis
 - 3. Lactational breast abscess
 - B. Chronic recurrent sub-areolar abscess
 - C. Acute mastitis associated with macrocystic breasts
 - D. Extrinsic infections

Benign diseases of breast lump are classified into

- A. Cystic
- B. Solid.

Cystic:

- 1. Inflammatory:
 - Abscess/Antibioma
- 2. Non inflammatory
 - a. Neoplastic:
 - Cystosarcoma
 - b. Non neoplastic:
 - Galactocele
 - Fibro adenosis

Solid:

- Fat necrosis
- Fibro adenoma

Breast abscess: Lactating mothers are commonly affected and present with pain and tender lump. *Staph.aureus* is the common causative organism. Ultrasound would be the best investigation to confirm and the Incision & drainage is the treatment of choice.

Galactocele:

This can be described as a variety of retention cyst which is loaded with milk in enlargement of mammary gland of lactating breast. On palpation there would be no tenderness and it would be firm

in consistency which simulates differential diagnosis of solid tumour of the breast. On histological examination, there is cyst which contains milk and the cyst measures about 2 to 6 cm of diameter. There will be flattened cuboid epithelium in the cyst lining. The presence of milk is confirmed chemically by positive mucic acid test. There will be adjacent pressure necrosis and chronic inflammatory findings with active apocrine glands¹⁴. Ultrasound would help to diagnose and simple excision is the treatment.

Benign Cyst/s: This is common in middle age with presentation of painless lump. Simple big cyst has smooth surface and well defined margin. Ultrasound would help to diagnose. FNAC/Aspiration cytology is necessary to rule out malignancy. Recurrent cyst after complete aspiration cannot exclude malignancy. Simple excision is the treatment and need to send the tissue for HPE.

Fat Necrosis: It is nonviable adipose tissue from traumatised or ischemic breast tissue and replaced with fibrous tissue and is common in old woman with history of trauma or recent surgery. It presents as painless lump with skin retraction some time. X-ray, ultrasound and biopsy are necessary when there is strong suspicion of malignancy. Excision may be needed on cosmetic ground.

Breast fibroadenoma: A fibroadenoma is a painless, unilateral (rarely bilateral) benign condition of breast tumor. This occurs commonly in females from the age of 16 to 35. Fibroadenomas are freely mobile with smooth surface and well defined margin. It usually grows during pregnancy and tends to shrink during menopause which supports the hormonal etiologic theory.

A. Pericanalicular- the proliferation of stromal cells around epithelial structures

B. Intracanalicular- the proliferation of stromal cells compressing epithelial cells into clefts

Ultrasound features of fibroadenoma include a range of different presentations that most frequently are consistent with presentations seen in a benign mass. The most frequent features include a round hypo echoic mass with a circumscribed borders; however, complex presentations that overlap with complex or

malignant masses such as calcification and heterogeneity are also detectable. When classified by the BIRADS system, in a fraction of the cases, moderate suspicion to malignancy was reported¹⁵. Investigation may be needed when there is suspicion of malignancy, otherwise excision and biopsy can be performed. Sometime fibroadenoma is treated without surgery and can be monitored with proper clinical review. It usually does not turn to malignancy.

Phyllodes tumour: It is type of giant fibroadenoma and rapidly growing breast tumor. It is an uncommon breast tumour when compares with other subtypes of histological varieties and the statistical report says that it occurs in less than 1% of cancers of breast^{16,17}. On examination, there would be dilated veins over the breast. There may be ulceration and fungation over breast mass and axillary nodes are not palpable. This type of breast tumour contains rare fibroepithelial cells type which ranges from 0.3% to 0.5% when compared to all type of breast pathologies^{18, 19}. Phyllodes tumours are more common in middle aged females and the average size of tumour is about 4 cm. Giant phyllodes tumour type have more than 10 cm in size (20%). Family physicians usually face these situations of lesions in the breast though they are very busy in their regular clinical activities. The common lesions are fibroadenoma, non agiosarcoma, myofibroblastoma, hamartoma, phyllodes tumour, agiosarcoma and metastatic carcinoma²⁰. Treatment for phyllodes type of tumour is excision of lump if the lump is small and simple mastectomy when it is big phyllodes tumour breast. If it is a malignant variety or big in size with malignant potential, treatment can be either wide local excision with 2cm clear margin of breast tissue or radiotherapy²¹. Sometime it may need a revision of surgery, if inadequate margin of breast tissue is noted. The radiotherapy following surgery would reduce the incidences of local recurrences in the cases of malignant and borderline varieties^{22, 23}. The proper and correct histopathological diagnosis before surgery make the correct treatment plan which would avoid revision surgery. The core needle biopsy for phyllodes tumour breast is more reliable and high sensitivity value than FNAC which reveals only

cell's information and not tissue's information of vascular and capsular invasion²⁴.



Fig. 1 shows huge Right breast lump with dilated veins in a case of phyllodes tumour

Carcinoma breast:

Most common malignant tumour in women (7 to 8%)

Etiology:

Women have some situations where there is high level of estrogen in blood namely nulliparity, young age at first birth and delayed menopause which are risk factors for the benign and malignant breast lesions^{25,26}.

- Age and sex
- Diet and environment factors and fat intake increases risk²⁷.
- Higher social class
- Attained menarche in young age and delayed menopause
- Nulliparity has high risk
- Lactating mother with breast feeding protects
- Positive family history
- Smoking (active and passive)

Pathological type:

- Ductal Carcinoma 90%
- Lobular Carcinoma 10%

Clinical features:

The common conditions for women to have consultation with clinicians are nipple discharge, palpable masses and breast pain. Women worry lot when they have pathological or physiological nipple discharge and 10 to 15% of them with benign breast conditions uses to complain abnormal discharge through nipple²⁸.



Fig -2 shows asymmetry of breast, Left nipple retraction and higher level than Right breast.

- Upper outer quadrant
- Hard, irregular lump
- Nipple retraction
- Dimpling, puckering of skin
- Peau d' orange
- Skin nodules/ulceration
- Nipple discharge
- Fixation to pectoralis

Spread:

- Direct ... to muscles of chest wall.
- Lymphatics ...to axillary lymph nodes.
- Blood stream ...to organs like liver, lung and brain.

Diagnosis: Triple assessment is the best for the diagnosis of breast lesions which includes clinical examination (history taking and physical examination), imaging (and mammogram) and biopsy (fine needle aspiration cytology -FNAC and tissue core biopsy).

Treatment: After staging (clinical and radiological – CT scan) of cancer breast and Multi-Disciplinary Meeting (MDM), treatment can be planned as Surgery, Chemo and Radio therapy accordingly. Especially in postmenopausal women, aromatase is the main oestrogen source. In oestrogen-receptor positive breast cancer, aromatase inhibitors (anastrozole and letrozole) are commonly used as alternate medication in postmenopausal women²⁹. All the above mentioned non-steroidal which reversibly stop these enzymes where there are transformation of androstenedione and

testosterone into estrogen. The medicines showed increased positive effects^{30, 31} for postmenopausal women. These drugs are in better body tolerance when compared with preceding hormonal therapy³². A study shows that majority of breast lumps in their locality were benign. The importance of histopathological analysis of lumps cannot be overemphasized, especially by the uncommon findings of breast cancer in two females in their early 20s, and tuberculosis in another⁵.

Breast Self -Examination (BSE):

For the awareness and identification of cancer breast in the beginning level, BSE is very useful to the society. Women are supposed to this examination routinely as shown in the pictures (Fig-3). The incidences of cancer breast can be reduced if the women are aware and doing this BSE regularly²⁹.

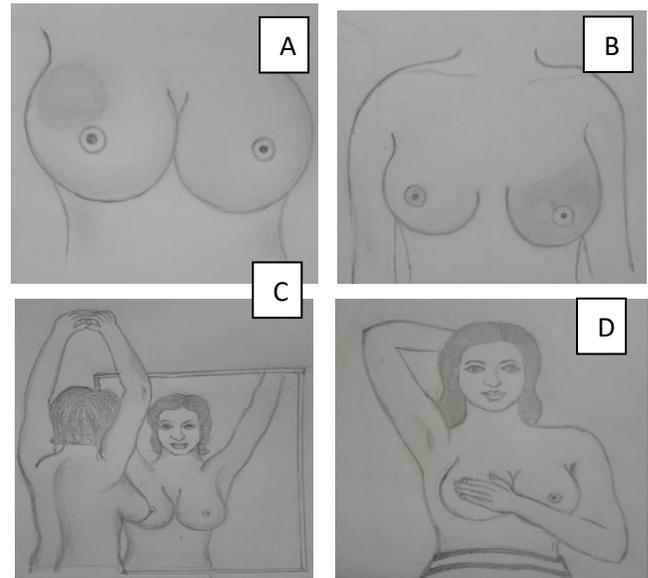


Fig-3

A-Asymmetry of the breast

B-Nipple level

C-Method viewing breasts in front of mirror by keeping both hands up position

D-Method of palpating

Methods of examination:

The time for monthly BSE examination can be 2 to 3 days after monthly period and the women who attained the menopause can do this examination on the 1st date of each month. Examination is by lying position of a woman and this position makes all tissues of breast rest over chest wall. Then she has to place her right hand behind her head. With the middle fingers of her left hand, gently yet firmly press down using small motions to examine the entire both breasts. Next, examination of armpit, nipple have to be carried out. Then let her stand in front of a mirror with her arms by her side. She has to look at her breasts directly and in the mirror for changes in skin texture, such as dimpling, puckering, indentations, dilated veins, nipple positions and deviations. These examinations should be done with her arms raised above as well.

It is not very important to remember and follow all 34 steps of breast self-examination since they may forget to follow the procedures in scheduled time. The women have to notice any changes in their breast and inform immediately to the family physicians at the time of their consultation³⁴. There would be minimized delay of report of any

signs and symptoms which are noticed by women during breast self examination³⁵.

Conclusion

The family physicians and the women have to have adequate knowledge about breast lumps. The early diagnosis and treatment for breast cancers is more important if they have good knowledge. SBE is more useful for the women for early detection of any lumps in the breast. Our main goal is to cure cancer patients or prolong their life considerably, ensuring a better quality of life. Women need to have adequate knowledge of breast diseases since breast cancer is common and dangerous disease and they need to go for regular checkup and mammogram if they are above 40 years.

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