IMPORTANCE OF PHYSICAL EXAMINATION IN EARLY DETECTION OF LUMP IN BREAST IN WOMEN OF DIFFERENT AGE GROUPS

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Background: The spectrum of breast lesions in adolescents varies markedly from that for adults, with the former lesions being overwhelmingly benign. Fine needle biopsy can be used to distinguish benign and malignant tumour. **Study Design:** This study examined the characteristics and outcome of women with different age groups in whom physical examination was their sole method of lump in breast detection. **Patients and Methods:** A total of 200 patients were included in the study. These were divided into 3 groups. Group A was consisting of 75 girls with age of pubescent. Group B included 69 suspected breast cancer women with age range 26–38 years. Fifty-six suspected breast cancer women with age range 41–60 year were included as group C. Study was carried out in patients admitted in the Department/Out-door of Surgery, Sir Ganga Ram Hospital, Lahore, Pakistan. Study period was 6 months. All women received a physical examination by a breast surgeon. Proforma including demographic and clinical characteristics were filled. The diagnosis for patients in this study was achieved by core needle biopsy using a 14-gauge cutting needle. **Results:** It was observed that early age at menarche (<15 year) plays an important role in developing both type of tumour, i.e., benign or malignant. Body Mass Index (BMI) with a range of 19–25 may be a risk factor in developing both type of tumours especially in pubescent and reproductive age, while BMI>25 may be a risk factor in peri/post menopausal women. Active life style is more important with increasing age as it decreases the risk of developing tumour state. Family history was more common in women with peri/post menopausal status as compared to other age groups. Clinical characteristics showed that lump size <2.5 cm was more common in both pubescent and reproductive age. While lump size with a range of 2.5–5.0 cm, was observed in all groups of patients. Fibroadenoma is observed in almost all women with pubesenct age while both benign and malignant tumour observed in women with reproductive age. Malignant tumour was observed mostly in women with peri/post menopausal status. **Conclusion:** Study concluded that early detection or clinical examination with FNA cut out the patients from harassment of malignancy and complications especially in the pubescent age. It is also found that Physical examination remain the useful indicators of prognosis in diagnosing cancer. Further research is needed to fully understand the reasons for variations in breast disease outcomes i.e. malignant or benign.

Keywords: Breast cancer, Fibroadenoma, Physical examination

INTRODUCTION

Breast cancer is the leading women's cancer worldwide. Several causes of mortality among women with breast cancer included the body mass index, family history, breast density and physical activity etc.[1,2]

Fibroadenoma of the breast is the most common benign breast tumour in adolescent girls and young women, usually present as a single breast mass.[3] Fibroadenomas may occur at any age, but peak incidence falls during the second and third decades of life. They are stimulated by oestrogen and progesterone, pregnancy, and lactation, and they undergo atrophic changes in menopause. Most often they are present as palpable breast masses measuring up to 3 Cm.[4,5]

In women between adolescence and the mid-20s, the lobules and stroma in the breast may respond to hormonal stimuli in an inflated fashion with the development of single and multiple palpable fibroadenomas.[6] Prevalence of simple fibroadenomas in this age group in the general population is reported to be 2.2% and is said to decrease with increasing age.[7] Complex fibroadenomas occurred in older patients (median age 47 years). These were smaller than simple fibroadenomas, 1.3 Cm compared with 2.5 Cm, respectively. These are reported to regress and lose their cellularity with age, usually degenerating and becoming smaller over time.[4,5]

Menopausal status is a common covariate in epidemiologic studies. Overall, 36% and 29% of women with breast cancer were consistently classified as postmenopausal and premenopausal respectively. Rates were unchanged when information regarding natural menopause, hormone therapy, and timing of last menstrual period were sequentially added to definitions of postmenopausal status.[2] Early age at menarche and late age at menopause, nulliparity, and late age at first pregnancy have been associated with an increased

risk of breast cancer. In contrast, parity and the increase in time of breastfeeding, particularly during the first child have been associated with a decreased risk.[8]

The risk that malignant transformation will occur in any fibroadenoma is low and has been reported to be 0.0125–0.3% the risk of transformation specifically in complex fibroadenomas has not been reported.[9] However, there are numerous reports that the general risk of developing cancer in the breast parenchyma is elevated among women with both simple and complex fibroadenomas.[10–12] Patients with fibroadenoma are 1.3–2.1 times more likely than women in the general population to develop breast cancer. Risk is further elevated for women with complex fibroadenomas, who are 3.1–3.72 times more likely to develop breast cancer than women in the general population.[13,14]

Fibroadenomas are much less common in postmenopausal women, unless the women are on oestrogen therapy. About 10% of all fibroadenomas will disappear over time, and twenty percent of them will recur. If they do not disappear, they usually stop growing when they reach two or three Cm.[15]

Knowing risk factors of breast cancer could significantly contribute to an improved prevention of this cancer. This study examined the characteristics and outcome of women with different age groups in whom physical examination was their sole method of breast cancer detection.

PATIENTS AND METHODS

A total of 200 Patients were included in the study. These were divided into 3 groups. Group A consisted of 75 girls with age of pubescent. Group B included 69 suspected breast cancer women with age range 26–38 years. Fifty-six suspected breast cancer women with age range 41–60 years were considered as group C. Study was carried out in patients admitted the Department/Outdoor of Surgery, Sir Ganga Ram Hospital, Lahore, Pakistan. Study Period was 6 months. All women received a physical examination by a breast surgeon. Proforma including demographic characteristics like age at menarche, age at menopause, parity, physical activity, family history and duration of lactation for each childbirth etc. and results of clinical examination were filled.

The diagnosis for patients in this study was achieved by core needle biopsy using a 14-gauge cutting needle. At pathology, fibroadenoma was diagnosed according to the accepted definition of a benign tumour arising from the epithelium and stroma of the terminal duct-lobule unit. The histologic hall-mark of fibroadenoma is concurrent proliferation of glandular or stromal elements.[10] The size range of complex fibroadenomas was 0.5–2.6 Cm and of simple fibroadenomas was 0.5–7.5 Cm.

The final diagnosis of the lump was obtained on the basis of fine needle biopsy, and excision biopsy.

RESULTS

Demographic characteristics in female with pubescent age (group A), reproductive age (group B) and peri- postmenopausal age group (group C) were tabulated (Table-1). It was observed that early age at menarche (<15 years) was more common in both women with reproductive age (group A) and women with peri- and postmenopausal status (group C). BMI range 19–25 year was more common in pubescent age, than in women with reproductive age and less common in women with peri- and postmenopausal status. Sedentary life style was more common in pubescent age and in women with peri- and postmenopausal status than women with reproductive status. Moderately active life style was more common in women with peri- and postmenopausal status and less common in pubescent and reproductive age. On the other hand, active life style is more common in pubescent age and less common in reproductive and women with peri- and postmenopausal status. Family history was more common in women with peri- and postmenopausal status. While marital status and lactation, were more common in both women with reproductive and women with peri- and postmenopausal status.

Diagnostic characteristics in female with pubescent age (group A), reproductive age (group B) and peri/postmenopausal age group (group C) was tabulated (Table-2). It was observed that size of lump >2.5 Cm was mostly in pubescent age. Size of lump, i.e., 2.5–5.0 Cm was more common in women with peri- and postmenopausal status. This group of women having 42% axillary node positive. On the other hand lump size >5.0 Cm was observed mostly in women with reproductive age. In this group only 10% have axillary lymph nodes. Shape of lump was also noted. It was observed that the shape of lump was regular in pubescent age while irregular shape was mostly observed in women with peri- and postmenopausal status. Both regular and irregular shapes were observed in women with reproductive age. It was observed that there is a small difference in impression and diagnosis of benign and malignant tumour by fine needle biopsy (FNA). Impression of benign tumour and malignant tumour is rough diagnosis. While diagnosis based on FNA showed that almost all tumours were benign in pubescent age. In women with reproductive age most tumours were benign and less number of tumours was malignant. In women with peri- and postmenopausal status most of the tumours were malignant and less number were benign.

Table-1: Demographic characteristics of the patients

Demographic characteristics	Pubescent age group-A n (%)	Reproductive age group-B n (%)	Peri/post menopausal age group-C n (%)
Age at menarche			
<15 years	74 (98.67)	66 (95.65)	56 (100)
>15 years	1 (1.33)	3 (4.35)	00
BMI			
<19	4 (5.34)	16 (23)	3 (5.35)
19–25	52 (69.33)	38 (55)	23 (41.07)
> 25	19 (25.33)	12 (17)	30 (53.57)
Life style			
Sedentary	17 (22.67)	10 (14.49)	16 (28.57)
Moderate	30 (40.00)	39 (56.52)	55 (62.50)
Active	28 (37.33)	20 (28.99)	5 (8.93)
Family history			
Yes	1 (1.33)	8 (11.59)	11 (19.64)
No	74 (98.67)	61 (88.41)	45 (80.36)
Dietary pattern			
Normal diet	30 (40)	48 (69.56)	56 (100)
Junk food	45 (60)	21 (30.34)	00
Marital status			
Yes	20 (26.67)	66 (95.65)	52 (92.86)
No	55 (73.33)	3 (4.35)	4 (7.14)
Breast feeding			
Yes	2 (16.00)	57 (82.61)	47 (83.93)
No	63 (84.00)	12 (17.39)	9 (16.07)

Table-2: Diagnostic characteristics in patients

Diagnostic characteristics	Pubescent age group-A n (%)	Reproductive age group-B n (%)	Peri/post menopausal age group-C n (%)
Size of lump (Cm)			
< 2.5	37 (49.33)	26 (37.68)	19 (33.93)
2.5–5.0	29 (38.67)	25 (36.23)	27 (48.21)
>5.0	9 (12.00)	18 (26.09)	10 (17.86)
Shape of lump			
Regular	51 (68.00)	36 (52.17)	13 (23.21)
Irregular	24 (32.00)	33 (47.83)	43 (76.79)
Impression			
Benign (fibroadenoma)	74 (98.67)	44 (63.77)	21 (37.50)
Malignant	1 (01.33)	25 (36.33)	35 (62.50)
Diagnosis			
Benign (fibroadenoma)	75.00 (100)	46 (66.67)	23 (41.07)
Malignant	00	23 (33.33)	33 (58.92)

DISCUSSION

Physical examination remains an important method of detection of breast cancer, particularly for younger women for whom mammography is less sensitive and not performed as frequently.[16] It is reported that 15–23% of women in young age were found to have fibroadenomas.[17]

Demographic characteristics showed an early menarche (<15 year) and increased BMI with moderately active life was observed in group A. It is reported that physical activity associated with younger age, larger tumour size, and positive axillary nodes was important in breast cancer.[16] However a study observed that a moderate physical activity of 2–4 h/week and a high physical activity of more than 4 h/week showed no association with survival after breast cancer diagnosis.[1]

Demographic characteristics of group B showed an early menarche (<15 years) and increased BMI with moderately active to sedentary life style. Positive family history was observed in few. A group of workers found that a part from the histologic features, the age at biopsy and the degree of family history of breast cancer may be the major determinants of breast cancer risk after the diagnosis of benign breast disease.[18] The results of a study indicated that the strongest risk factors for breast cancer overall, i.e., family history and breast density are not histologic subtype specific.[19]

Present study observed breastfeeding is frequent in both women with reproductive age and peri/post menopausal group and this cannot be related to the risk of disease. However a Study found that increase in breastfeeding is a good strategy to reduce the risk of this disease.[8] It is instituted that galactorrhoea is considered pathologic if spontaneous.[20]

It was observed that in most of the cases of group A, the size of lump was 2–5 Cm with regular shape. According to a study the lump size 2–5 Cm was considered as noncomplex or simple fibroadenomas.[21] It is reported that simple fibroadenomas are not associated with any increased risk for subsequent breast cancer.[9]

Almost all of the lumps of group A were benign (fibroadenoma) confirmed by FNA. Our study is confirmed by a group of workers that the spectrum of breast lesions in children and adolescents being overwhelmingly benign. Study reported that breast mass in a young girl may arise from normal and abnormal breast development. Other causes of masses include infection, trauma, and cyst formation.[22]

Both regular and irregular shapes of lump were observed in women with reproductive age (group B). While diagnosis based on FNA showed in women with reproductive age most tumours were benign and less number of tumours were malignant. A study reported that reproductive characteristics such as age at menarche, menstrual irregularity, lifetime oestrogen exposure may be a critical factor in breast carcinogenesis.[23]

Size of lump was 2.5–5.0 Cm was more common in women with peri- and postmenopausal status (group C). A study noted that the size of the primary tumour also is associated with survival; patients with larger cancers have poorer survival rates. Study found that in 5-year survival rates were 65%, 36%, and 16% for breast tumours measuring <5 Cm, 5–10 Cm, and >10 Cm, respectively.[24]

Group C of women having 42% axillary node positive. Shape of lump was irregular in women with peri and post menopausal status. Some studies found that axillary node positive play a role in cancer metastasis. It is reported by a group of workers that there is a significant incidence of lymph nodes (56%) and axillary node metastases (10%) in the tissue lying between the long thoracic and thoracodorsal nerves.[25]

Another study found that lymphatic invasion is necessary for regional lymph node metastasis in breast cancer, while systemic metastasis requires blood vessel invasion.[26]

It was observed that there is a small difference in impression and diagnosis of benign and malignant tumour. However, diagnosis based on FNA of benign tumour and malignant tumour is more accurate than impression. In women with peri- and postmenopausal status most of the tumours were malignant and less number were benign. On the other hand a group of workers reported that early menarche and late menopause are associated with increased lifetime exposure to estrogens. In addition, a long period from Tanner stage breast-2 to onset of ovulatory cycles and a long period of luteal inadequacy and anovulatory cycles characteristic of the perimenopausal years creates long estrogen windows favourable for tumour induction.[23]

Present study observed a few cases of benign breast disease or fibroadenoma and most cases of breast cancer. A study reported that there is a relationship between benign breast lesions begins which begin to rise during the second decade of life and peaks in the 4th and 5th decades, as opposed to malignant diseases, for which the incidence continues to increase after menopause, although at a less rapid pace.[27]

CONCLUSION

Early detection or clinical examination with FNA cuts out the patients from harassment of malignancy and complications especially in the pubescent age. It is also found that traditional physical factors and clinical examination factors such as lymph node status, lump size, histologic type, etc remain the useful indicators of prognosis in diagnosing the cancer. Further research is needed to fully understand the reasons for variations in breast disease outcomes, i.e., malignant or benign. This study may aid the development of tailored strategies to reduce the burden of breast cancer in Pakistani.

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