Original article

Clinicopathological evaluation of breast lump- a prospective study in tertiary level hospital.

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Abstract

Objective : To find out the magnitude of breast diseases, its frequency and distribution in different age group among the female patients attending surgical out patients department and admit different units of surgery departments in Dhaka Medical College Hospital and to study the correlation between clinical and histopathological feature in palpable breast lumps .

Methods : This cross sectional descriptive study comprising of 102 cases was done between 01-01-2009 to 31-03-2010 in Dhaka Medical College Hospital. The study was conducted among female patients. Every patient underwent 'a FNAC done on OPD basis, following a thorough clinical check-up. Every patient subjected to FNAC underwent a definitive surgical procedure. All specimens that were obtained sent for histopathology. The results thus obtained from histopathology were matched with clinical feature and a correlation was sought based on statistical tests.

Results : Results of all patients were collected and tabulated. Statistical analysis was performed on the tabulated data. Of all 102 patients selected, 50 cases were duct cell carcinoma (49%),38 cases were firoadenoma (37.3%),9 cases were fibrocystic disease (8.8%) and other benign lesions were 5 cases (4.9%). In this study, carcinoma was common in 3rd, 4th and 5th decade (42.16%), fibroadenoma was common in 2nd and 3rd decade and fibrocystic disease was common in perimenopausal age group. Out of 102 cases, 8 cases were benign on FNAC, but on histopathology these were malignant.

Conclusion : The purpose of this study was to analyze breast lesions causing breast lump and evaluate these cases by histopathology. In this study, most of the cases correlate presenting feature with histopathological reports. In some cases false positive occurs. So all the palpable breast lump must be histopathologically evaluated.

Key words : Breast lump, clinico pathological evaluation

Introduction

A breast lump whether benign or malignant is a cause of anxiety to the patient & her family members. Due to limitation of implementation of early diagnosis of breast cancer by mass screening programme, more than 2/3 of the cancers are already in advanced incurable stage at the time of histopathological diagnosis. This emphasize the requirement of early detection of suspicion of cancer before it is evident clinically by inspection / palpation or by other means[1]. About 5-55%[2] of all women suffer from breast disorders in their life time. Benign disorders of breast is usually seen in the reproductive period of life, is thought to be largely hormone induced and there is a dramatic fall in the incidence, after menopause due to cessation of clinical ovarian stimulation. Benign breast disease is 4-5 times more common than breast cancer[2].

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The concept of ANDI-Aberrations of normal development and Involution is gaining acceptance. Benign proliferations of the breast are often considered as aberrations of normal development and involution. The cyclical changes due to variations in estrogens and progesterone result in increased mitosis around days 22-24 of the menstrual cycle but apoptosis restores the balance across the cycle[3].

ANDI, first proposed by Huges[4] is now universally accepted. So most benign breast diseases are relatively minor aberrations of normal process of development, cyclical hormonal response and involution that interact throughout a woman's life.

In women, the breast Cancer is one of the most common cancer. In developing country, Cancer of cervix is the most common Cancer but the breast Cancer is almost as common & both account for 60% of all Cancer & make the second most common cause of Cancer death of women[1]. It is found that the breast Cancer is on rise in major & metropolitan cities of the world. This appears to be related to late marriage, birth of child in the later age, fewer children and shorter period of breast feeding, which are common practice in Urban Women[1].

Every year in Bangladesh approximately 35,000[5] women develop breast cancer, many of whom never seek treatment. Although the majority of breast lumps ("chakas") are not cancerous and require minimal treatment, some breast lumps require immediate attention.[5]

In this study, we have presented the common types of breast disease, presenting as breast lump in our country. The distribution of different types of breast diseases in different age groups was also studied. Attempts have also been made to correlate the clinical diagnosis with the result of histopathology to evaluate diagnostic accuracy among these cases.

Materials and methods

This cross sectional descriptive study was carried out in different units of the Department of Surgery, and Out patients department of surgery in Dhaka Medical College Hospital.

The study period spanned from January 2009 to March 2010. A total 102 cases who presented with clinically benign or suspicious discrete breast lump in which malignancy couldn't be ruled out and had to undergo FNAC & excision biopsy.

The database form of the study was filled up by interview method and clinical findings and pathological reports were recorded in database form.

Inclusion criteria:

All female patient presenting with palpable breast lump admitted into Dhaka Medical College Hospital and visit SOPD Dhaka Medical College Hospital.

Exclusion criteria: Patients with following criteria were excluded from the study:

1) Patients of pediatric age group (less than 14 years)

2) Patients with breast abscess.

3) Ill-defined or doubtful lump

Detailed history of each patient under study was recorded, with special attention to their age, parity, age of menarche, age of menopause, lactational history, history of breast cancer, history of ovarian cancer. Important and relevant findings on through physical examination of lump which included consistency, temperature, tenderness, fixity of the lump to the skin and underlying structure, draining lymph nodes etc. also be recorded.

In all cases every attempt were made to reach a definitive clinical impression and relevant investigations had been done. Other routine investigations were done and necessary advice were given for follow-up in cases where it was actually needed.

Results

The study includes all female patient presenting with palpable breast lump admitted into different units in Dhaka Medical College Hospital and visited SOPD of Dhaka Medical College Hospital. Every patient underwent a FNAC done on OPD basis following a thorough clinical check-up. Every patient subjected to FNAC underwent a definitive surgical procedure. All specimens that were obtained sent for histopathology.

Common types of breast diseases among presenting breast lumps are duct cell carcinoma 49%, fibroadenoma 37.3%, fibrocystic disease 8.8%, duct ectasia 1.96%, tubercular lesion .98%,phyllodes tumor.98% and medullary carcinoma .98%.surgical procedure (Fig: 1.1). All specimens that were obtained sent for histopathology.

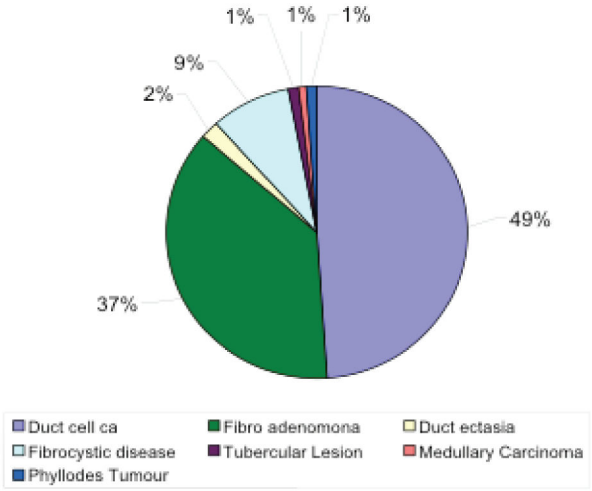

Fig:1.1 : Common types of breast diseases among presenting breast lumps

Age range varied from 15 years to 80 years. In this study, carcinoma was common in 3rd, 4th and 5th decade (43%), fibroadenoma was common in 2nd and 3rd decade, and fibrocystic disease was common in perimenopausal age group. In this study, breast carcinoma was the most common of all lesions (Table 1.1).

Table 1.1 : Age incidence of breast lumps

Breast lumps		Age Group			Total
		15-30 years	31-45 years	>45 years	
Duct cell ca	Count	7 7	24	19	50
	% within Histopathology	14.0%	48.0%	38.0%	100.0%
Fibro adenomona	Count	35	3	0	38
	% within Histopathology	92.1%	7.9%	.0%	100.0%
Duct ectasia	Count	0	2	0	2
	% within Histopathology	.0%	100.0%	.0%	100.0%
Fibrocystic disease	Count	0	5	4	9
	% within Histopathology	0	55.56%	44.44%	100.0%
Tubercular Lesion	Count	0	0	1	1
	% within Histopathology	.0%	.0%	100.0%	100.0%
Medullary Carcinoma	Count	0	0	1	1
	% within Histopathology	.0%	.0%	100.0%	100.0%
Phyllodes Tumour	Count	0	0	1	1
	% within Histopathology	.0%	.0%	100.0%	100.0%
Total					
	Count	48	31	23	102
	% within Histopathology	47.1%	30.4%	22.5%	100.0%

Besides breast lumps, 14.71% patients present with pain, 8.82% patients present with nipple discharge, 2.94% patients present with ulceration of the skin, 1.96% patients present with fever, 24.51% patients present with lymph node involvement.

Out of 102 cases, the onset of menarche of 84 cases (82.4%) were between 12-14 years of age. The onset of menarche of 17 cases(16.7%) were in between 9-11years of age and 1 case (1%) started menstruation after 15 years. 62.7% belongs to average, 27.5% belongs to poor and 9.8% belongs to standard socio-economic group. In this series, 24 cases (23.5%) were obese and rest of them (76.5%) were not obese. 55.88% took different methods of contraceptives. 75.5% patients adequately breastfeed her baby. 6.9% cases had positive family history. 11.8% patients gave history of previous breast disease. considering all lesions of right breast was involved in 58.82% cases and left breast was involved in 35.29%cases. Only 5.8% cases were involved in both breasts. All types of lesions were common in right breast (table 1.2) .

Table 1.2 : Distribution of breast lumps according to the side (right or left) of the breast

Types of lesions	All lesions (n=102)		Right breast (n=60)		Left breast (n=36)		Both breast (n=6)	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Fibroadenoma	38	37.25	20	52.62	14	36.84	4	10.52
Fibrodenosis	9	8.8	5	56.55	4	44.44	0	0.00
Other benign breast lump	5	4.7	3	60.00	0	0.00	2	40.00
Breast carcinoma	50	49.00	32	64.00	18	36.00	0	0.00

Only 8.8% patients in this series presented with nipple discharge.

The predominance of duct cell carcinoma (49%). Next common lesion was fibroadenoma (37.3%). Fibrocystic diseasae was in 9 cases (8.8%). Duct ectasia were present in 2 cases (1.96%). There were one case of tubercular lesion, one case of phyllodes tumor and one case of medullary carcinoma (table 1.3).

Table 1.3 : Histologic distribution of breast lumps (n=102)

Histological type	Frequency	Percent
Duct cell ca	50	49.0
Fibro adenomona	38	37.3
Duct ectasia	2	1.96
Fibrocystic disease	9	8.8
Tubercular Lesion	1	.98
Medullary Carcinoma	1	.98
Phyllodes Tumour	1	.98
Total	102	100.0

Table 1.4 shows that 45.1% of cases were clinically diagnosed as fibroadenoma and 41.2% of cases were clinically diagnosed as duct cell carcinoma but according to histopathological findings, most common lesions were duct cell carcinoma (49.01%) and 2nd most common findings were fibroadenoma (37.25%). 8.82%cases were fibrocystic disease, according to histopathlogical study. One case clinically was galactocele, but according to histopath it was duct cell carcinoma. Clinically fibrocystic changes found in eight cases, among them histopathologically, four cases were duct cell carcinoma, duct ectasia found in one case, two cases showed fibrocystic disease and one was tubercular lesion. Five cases (4.9%) were clinically undiagnosed, but according to histopathological report, two cases were duct cell carcinoma, One was fibroadenoma, one was duct ectasia and the rests are fibrocystic disease.

Table 1.4 : Correlation of clinical and histopathological diagnosis of breast lump

Clinical diagnosis		Histopathology							
		Duct cell Ca	Fibro adenoma	Duct ectasia	Fibrocystic disease	Tubercular lesion	Medullary carcinoma	Phyllodes tumour	Total
Duct cell carcinoma	Count	41	0	0	0	0	1	0	42
	% within histopathology	82	0	0	0	0	100	0	41.2
Fibro adenoma	Count	2	37	0	6	0	0	1	46
	% within histopathology	4	97.4	0	66.7	0	0	100	45.1
Galactocele	Count	1	0	0	0	0	0	0	1
	% within histopathology	2	0	0	0	0	0	0	1
Fibrocystic disease	Count	4	0	1	2	1	0	0	8
	% within histopathology	8	0	50	22.2	100	0	0	7.8
Undiagnosed	Count	2	1	1	1	0	0	0	5
	% within histopathology	4	2.6	50	11.1	0	0	0	4.9
Total	Count	50	38	2	9	1	1	1	102
	% within histopathology	100	100	100	100	100	100	100	100

Discussion

A lump in the breast is a common complaint presenting in the surgical out-patient department of all major hospitals, with anxiety regarding a possible malignancy being extremely common. Hence a quick diagnosis of a lump in the breast is essential. Criteria such as cost effectiveness, use of anaesthesia, time between the diagnostic procedure and report, patients hospital stay and most importantly, reliability in deciding subsequent treatment, are all factors to be taken into account in this regard[6]. Although benign breast lumps are about six times more than malignant tumors and the presence of any persistent lump in the breast raises the question of carcinoma, which is the most common malignant tumor of the breast leading cause of death in women[7].

In the present study of 102 patients, 52 (50.98%) lesions were benign. Rest 50 (49.03%) lesions were malignant. Duct cell carcinoma was the most common lesion accounting for 49% (50 lesions) of all and fibroadenoma was the second most common lesion accounting for 37.3% (38 lesions). The third most common lesion was fibrocystic disease comprising 8.8% (9 lesions) and other benign lesions were found in 5 cases (4.9%). The findings in this study correlate with the series of Ahmed Asif (2005, Dissertation, BCPS)[8] where 50% lesions were breast carcinoma, fibroadenoma was 46.55%, fibroadenosis was 3% and other benign lesions were found in 1% cases. A prospective case series of 205 women presenting with breast disease and undergoing treatment at Surgical Unit IV, Jinnah Hospital, Lahore[9], was conducted from January, 1999 to December, 2003 and showed that 30.73% of the patients had benign breast disease whereas 69.26% were diagnosed as having breast cancer. The commonest benign disease was fibroadenoma 60.3%). This result also correlates with this series.

Three most common lumps producing lesions in the breast are fibroadenoma, fibrocystic disease (fibroadenosis) and carcinoma. The relative incidence of these three lesions varies in different studies. Oluwole and Freeman[7] analyzed 282 patients with breast lesions and found fibroadenoma was the most common (34.75%) lesion and second and third most common lesions were carcinoma and fibrocystic disease comprising 28% and 17% respectively. Khan et al.[10] found that among 264 cases of breast diseases, benign breast diseases (BBD) were the commonest lesions of the breast found in this study (93.2%) whereas malignant lesion was infrequent (6.8%). Among benign breast diseases, the commonest lesion was fibroadenoma (32.57%). Thus, findings of this study does not correlate well with those studies as because the hospital admitted patients were also taken in this study as well as surgery outdoor patients. The number of cases taken in this study, was also very small. The percentage of fibrocystic disease in this series was low (8.8%). It is difficult to draw a conclusion because most of the patients with fibrocystic disease do not come to the hospital before appearing a definitive lump in the breast.

Multiple lumps in one or both breasts were found in 6 (5.88%) patients. In 4 (10.52%) cases, fibroadenoma was associated with other types of benign breast lesions. Oluwole and Freeman[7] in their study reported that incidence of multiple lesions was 15% of all benign lesions and fibroadenoma was the most common lesion, occurring with other types breast lesions in the same patient. Nigro and Organ[11] also in their study found that in 10% of cases multiple fibroadenomas were present in one of both breast. All these data unanimous with present study result.

Fibroadenoma was found common in between 15-30 years of age (92.1%). In between 30-45 years frequency was 7.9%. The peak age incidence this series was between 15-30 years of age. Oluwole and Freeman[7] have observed same type of age distribution. They found that peak age incidence was between 16 to 25 years for fibroadenoma. In the study of Khan and Kapoor[10], fibroadenoma was common in second and third decade. All studies showsthat fibroadenoma occurs at earlier age. Present study findings correlates with above studies.

In this study fibrocystic disease was common in 31-45 years age group(55.56%). This observation correlates with the series of Oluwole and Freeman[7]. Peak age incidence for fibrocystic disease was 40-50 years Surgical literature also shows that fibrocystic diseases is the most common between the age of 30 and 50 years. This mild disparity may be due to the small number of patients in this series. In this study breast carcinoma was common in 31-45 years age group (48%), that was not correlate with the series of Khan and Kapoor[10], where it was common in 50-59 years of age(55.5%). In the study of Mushahida et al[9], mean age of the cancer patients was 34.56 years ± 11.5 years, that is more or less similar to this study.

Association of increased risk of breast diseases with early menarche has been reported in many studies. In the present series, out of 102 cases the onset of menarche of 84 cases were between 12-14 years of age which is 82.4% of total cases. The onset of 17 cases (16.7%) were between[9-11] years of age and 1 case started menstruation after 15 years. Age at menarche has been inversely associated with the risk of breast cancer; menarche at a relatively early age is associated with increased risk. Because there is, prolonged exposure to estrogen in early menarche and at higher levels than for those with later menarche[10]. In the study, of Parazinni et al[12], early age at menarche was associated with an increased risk of benign

breast disease, but no definite conclusion can be made on the relationship between the risk of benign breast diseases and the age of menarche. In this study of breast lumps, 55.9% cases used contraceptives. Oluwole and Freeman7 found that high incidence of breast lesions among the users. Present study findings correlates with this findings. Mushahida et al[9] found that risk of carcinoma among oral contraceptive users is 14.08%, that is unanimous to present study.

In this series, 6.9% cases had positive family history of breast disease. 3(6%) patients gave positive family history of breast carcinoma. Oluwole and Freeman[7] also reported similar observation. The risk factor profile for positive family history of breast cancer in first degree relatives in 11.97% of the patients with breast cancer, in Mushahida et al[9] series. Penelop et al[13] found that women with a family history of breast cancer appear to be at increased risk of being diagnosed with BBD, in particular the high-risk types of BBD associated with a greatly increased risk of breast cancer

In this study, 11.8% cases gave previous history of breast disease. 4 cases (8%) of breast carcinoma previously operated as fibrocystic disease. Penelop et al[13] found that women with a history of benign breast disease (BBD) are at increased risk of developing breast cancer.

Lump was the presenting feature of all the cases in this series. Lumps were mild to moderately painful in 14.7% cases. Most of the painful lumps were fibrocystic disease and related with cycle. Nipple discharge was present only in 8.8% (9 cases) of patients, where most of the patient present with blood stained discharge. Occasional fever was complained by 1.96% cases. Which may be due to inflammatory condition of the breast. 2.5% of patients presented with ulceration of skin, all are diagnosed as breast carcinoma according to the histopathological report. 24.5% patients presented with lymph node involvement. Oluwole and Freeman[7] who analyzed breast lesions found that 95% of their patients presented with breast lump, 5% with nipple discharge and 5% with pain. These findings were more or less similar to this study.

Oluwole and Freeman[7] reported that, of all lesions of their series, right breast was involved in 45% of the patients, left breast in 41% and both breast in 14% and multiple lesions were in 15% of cases. Whereas, of the fibroadenoma cases, right breast was involved in 45% of patients, left breast in 42% and both breast in 13% and multiple lesions were present in 10% cases. Findings of this study was not correlate with Oluwole and Freeman[7]. It is found that intramammmary distribution of benign breast lesions are similar to the malignant lesions.

Out of 102 cases, 45.1% of cases were clinically diagnosed as fibroadenoma but according to the histopathological findings, most common lesions were duct cell carcinoma (49%) and second most common findings were fibroadenoma (37.3%). Eight cases (7.8%) were clinically diagnosed as fibrocystic disease but according to the histopathological report, duct cell carcinoma was (8%). 5 cases (4.9%) had no confirm clinical diagnosis, according to the histopathological report, two cases(4%) were duct cell carcinoma, one case(2.6%) was fibroadenoma, one was firocystic changes (11.11%) and the rest was duct ectasia. Clinically one case was galactocele (1.00%), but histopathologically it was duct cell carcinoma (2.00%).

Same picture was noted in series of Ahmed Asif (2005, Dissertation, BCPS)8 where out of 100 cases, 58% of cases were clinically diagnosed as fibroadenoma but according to the histopathological findings, most common lesions were duct cell carcinoma (50%) and the second most common findings were fibroadenoma (46.55%).

From the study, it is concluded that benign lesions of the breast are more common and occur usually during second and third decade of women's life. Malignant lesions of the breast are the second common pattern and occurring during 4th and 5th decade of women' life. Though FNAC is also routinely carried out to diagnose various lesions of breast, histopathological method is finally diagnostic.

In this study, most breast lumps are benign, as in fibroadenoma, a condition that affects mostly women under age 30. Fibrocystic breast disease is present in over 8.8% of all women. The cysts in FBD change in size with the menstrual cycle, whereas a lump from fibroadenoma does not. Fibroadenoma occurs mostly in nulliparous adolescents, whereas fibrocystic disease is found mostly in middle-aged multiparous women.

Breast carcinoma occurs commonly in older age group patients. It is the common malignant breast tumor, leading cause of death in women and its incidence was high in this series. This high incidence reflects the illiteracy, poverty, lack of awareness, lack of medical facilities and screening procedure of our people. Most of the cases of breast lump present with advanced stage when a surgeon is of little help for them. Tubercular lesion, traumatic fat necrosis, phyllodes tumor, duct ectasia are uncommon in this study. From this study and available data from different publications, it is evident that, bilateral involvement, multiple lesions and recurrence in the same patients are not uncommon. It is important that intramammary distribution of benign lesions is similar to that of malignant lesions of the breast.

FNAC of breast is highly accurate and has low false positive and false negative diagnosis. With the result of FNAC, patient can be advised for further treatment. Histological evaluation of the suspicious cases in FNA was

done and was based on excisional biopsy or mastectomy specimen. As the histopathology is 100% sensitive and specific tool available in all the major towns in our country.and as at present early detection and early removal of tumour is only method of curing breast cancer, mass education regarding mass screening by self breast examination, and by other tools i.e., mammography, are the mandatory measures to reduce the morbidity and mortality associated with breast cancer.

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