ORIGINAL ARTICLE

Cytomorphological Pattern of Breast Lesions Diagnosed on Fine Needle Aspiration Cytology in a Teritary Care Hospital

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Abstract

Breast lump is the most common presentation of the breast disease .FNAC is a simple, rapid and safe ,method to diagnose the breast lesions. This study was conducted on 700 patients presenting with various breast lesions to study their pattern in GMC Jammu over a period of 2 years .The age range of these patients was from 12 -85 years. Female patients were more than male patients. Left breast involvement was more common than the right breast. Most common presenting symptom was the breast lump . Out of 700 cytology cases reported,10 cases were unsatisfactory. The cytological diagnosis included Inflammatory lesion(11.4%), benign breast disease(34.2%), Fibroepithelial lesion(38.5%), Atypical/ Probably benign (2.2%), Suspicious for malignancy (2%), Malignant(10%), and Unsatisfactory(1.4%). Fibroadenoma and invasive ductal carcinoma were most common among benign and malignant lesions respectively.

Keywords

Breast, Cytology, Pattern

Introduction

Breast lump is the most common presentation in most of the breast diseases. Breast lump causes anxiety to the patient and it can be reduced by giving assurance that most of the breast lumps are benign and can be early diagnosed by Fine needle aspiration cytology. The FNA was first introduced by Martin and Ellis 1930 (1) .It has been used to evaluate palpable breast masses and cysts as well as nonpalpable mammographic abnormalities. It is highly accurate for palpable lesions (2),although the accuracy gets limited with lesions smaller than 1cm. For non palpable lesions, FNA is also a useful technique for sampling cystic lesions with ultrasound guidance. The accuracy of FNA of the breast ,as with most organs , is operator dependent: sensitivity for malignancy has been found to range from 65 to 98% and specificity from 34 to 100% (3).The primary goal of aspiration cytology is to separate malignant lesions that require more radical therapy from benign ones that may be conservatively managed. In addition it is important for local chest wall recurrences and permits a number of ancillary studies such as hormone receptor analysis, flow cytometry, and molecular studies. Thus the FNAC can reduce the number of open breast biopsies. Aim – To find out pattern of various breast lesions encountered in our hospital.

Material & Methods

The present study was carried out in the department of pathology, cytology section, over a period of 2 years from Jan 2015 to Dec 2016. It was a retrospective study .The data was collected from cytology registration forms. Data on the cytological features, age and sex were retrieved. For all the patients Papanicolaou stained and

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Romanwsky stained slides were available for review. The lesions were classified as Inflammatory lesion, benign breast disease, Fibroepithelial lesion, Atypical/ Probably benign ,Suspicious for malignancy , Malignant, and Unsatisfactory.

Results

Age and sex distribution

The age range of 700 Patients was from 12 -85 years. The most affected age group was21-30 years. Maximum no. of Non malignant cases were seen in the

Table 1. Age and Sex Distribution of Breast Lesion (except the non diagnostic cases))

Age	Inflammatory		Benign Breast Lesion		Fibroepithelial lesion		Atypical		Suspicious		Malignant	
	M	F	M	F	M	F	M	F	M	F	M	F
11-20	2	4	12	18	-	74	-	-	-	-	-	-
21-30	6	32	14	78	-	84	-	-	-	-	-	9
31-40	2	16	2	50	-	86	-	2	-	5	-	13
41-50	-	14	10	32	-	24	-	12	-	5	-	24
51-60	-	-	4	4	-	2	-	2	-	-	-	13
61-70	-	2	6	4	-	-	-	-	2	2	-	9
>70	-	2	6	-	-	-	-	-	-	-	-	2
Total	10	72	54	186	-	270	-	16	2	12	-	70

age group of 21-30 years whereas maximum no.of malignant cases were seen between 41-50 years.Among all cases , 66 were males(9.4%) and 654 (81.6%) were females patients.

Anatomical Distribution of Lesion in both breasts.

Out of 700 cases, 376 cases were located in the left breast and 320 cases on the right breast. 4 cases showed bilateral breast involvement.

Table 2. Distribution Pattern of Various Breast Lesions

Lesion	Subtype	Number	Percentage
Inflammatory Lesion(80)	Acute mastitis	60	8.5
	Granulomatous mastitis	14	2
Benign Breast Lesion(240)	Fat necrosis	6	0.8
	Fibrocystic disease	118	17
	Simple cyst	18	2.5
	galactocele	24	3.4
	Papilloma	2	0.2
	Gynaecomastia	78	11.2
Fibroepithelial Lesion(270)	Fibroadenoma	266	38
	Benign Phylloids tumour	4	0.4
Atypical(16)		16	2.2
Suspicious(14)		14	2
Malignant(70)	Invasive ductal	64	9
	Medullary	3	0.3
	colloid	2	0.2
	Malignant phylloids	1	0.1
Unsatisfactory		10	1.4
Total		700	100

Presenting symptoms

The most common presenting symptom was the breast lump seen in 690 cases out of 700. In cases diagnosed with unsatisfactory smear, no lump was found. 2nd most common complain was pain seen in 200 cases. Others were, Fever seen in 50 cases, Nipple discharge in 34 cases, Nipple retraction in 10 cases, Axillary lymphadenopathy in 8 cases.

Table 3 Clinical Presentation

Signs and symptoms	NO.of cases	Percentage(%)
Lump	690	98.5
Pain	200	28.5
Fever	50	7.1
Nipple discharge	34	4.8
Nipple retraction	10	1.4
Axillary lymphadenopathy	8	1.1

Pattern of lesion

Out of 700 cytology cases reported, 10 cases were unsatisfactory because of scanty material and diluted smears. The cytological diagnosis of the cases included; Inflammatory lesions(11.4%), benign breast disease(34.2%), Fibroepithelial lesion(38.5%) , Atypical/ Probably benign(2.2%), ,Suspicious for malignancy(2%), and Malignant(10%),Unsatisfactory(1.4%). Among the inflammatory cases the maximum no.of cases were of acute mastitis followed by granulomatous mastitis with 3 cases of fat necrosis being the least common. Among the benign conditions including the fibroepithelial lesions ,maximumno.of cases were that of fibroadenoma 266 cases .Benign phylloids tumour was seen in 4 cases. The second most common lesion was the Fibrocystic disease 118 cases followed by gynaecomastia seen in 78 patients, galactocele in 24 cases, simple cyst in 18 cases and least common was the papilloma with 2 cases only.

Among 70 cases of malignant lesions ,maximum cases were of ductal carcinoma (64 cases) followed by 3 cases of medullary carcinoma ,2 cases of colloid carcinoma and least common was malignant phylloids tumour with 1 case only.

Discussion

Our study included 700 patients .The age of these patients ranged from 12 -85 years.The most affected age group was 21-30 years. Singh A *et al* (4) also found the maximum cases in the same age range. Maximum number of Non malignant cases were seen in the age group of 21-30 years. This was similar to study done by Chandanwale S *et al* (5). Maximum no.of malignant cases were seen between 41-50 years, similar to that found in study done by Khan *et al*,(6) and Panjvani *et al*.(7). Among all cases , 66 were males (9.4%) and 654 (81.6%) were females patients. Male to female ratio was 1: 9.9. Similar findings were seen in study done by Gupta R *et al* (8) and Panjavni *et al*.(7).

Out of 700 cases, 376 cases were located in the left breast and 320 cases on the right breast.4 cases showed bilateral breast involvement. Similar to study done by Muddegowda PH *et al,* (9) and Singh P *et al* (10). However, Chandanwale *et al* (5) found right breast involvement to be more common in his study.

The most common presenting symptom was the breast lump seen in 690 cases out of 700. In cases with unsatisfactory smear no lump was found. 2nd most common complain was pain seen in 200 cases. Others were Fever seen in 50 cases, Nipple discharge in 34 cases, Nipple retraction in 10 cases, Axillary lymphadenopathy in 8 cases. Similar findings were seen by Chandanwale *et al*.(5) and Godwins E *et al*.(11) .

Out of 700 cytology cases reports, 10 cases were unsatisfactory because of scanty material and diluted smears. The cytological diagnosis included Inflammatory lesion (11.4%), benign breast disease(34.2%), Fibroepithelial lesion (38.5%) , Atypical/ Probably benign (2.2%), ,Suspicious for malignancy (2%), Malignant (10%), and unsatisfactory(1.4%). Benign conditions were found to be more common than malignant lesions. Similar pattern was seen in study done by Gupta R *et al* (8) . However Bdour M *et al* (12) reported a much higher incidence of carcinomas(41%).

Among the benign conditions including the fibroepithelial lesions ,maximumno.of cases were that of fibroadenoma 266 cases . The second most common

lesion was the Fibrocystic disease 118 cases. Similar findings were seen in the study done by Singh K *et al* (13) and Farkhanda JD *et al* (14).

This was followed by gynaecomastia seen in 78 patients, galactocele in 24 cases, simple cyst in 18 cases, benign phylloids tumour in 4 cases and least common was the papilloma with 2 cases only. Similar pattern was seen in study done by Gupta R *et al*.(8), Chandanwale S *et al* (5).

Among 70 cases of malignant lesions ,maximum cases were of ductal carcinoma (64 cases) . Similar to that found in study done by Singh A *et al* (4),Singh P *et al* (10). It was followed by 3 cases of medullary carcinoma ,2 cases of colloid carcinoma and least common was malignant phylloids tumour with 1 case only. Similar pattern was seen in study by Singh P *et al* (10).

Conclusion

The primary goal of aspiration cytology is to separate malignant lesions from benign ones and it also makes an important tool in guiding further management of a case. Knowing the pattern of various lesions prevalent at a place is important for pathologist to keep in mind while considering the approach to the diagnosis.

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