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Pattern of Pathological Lesions in Females of Age Less Than 30 Years Presenting With Palpable Breast Lump.

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ABSTRACT

Background: Although breast cancer is extremely uncommon during childhood and adolescence, breast concerns and problems among females of this age group are a relatively common occurrence. Objective: The study is conducted to evaluate spectrum of lesions of breast in patients presenting with breast lump and evaluate role of FNAC in lesions of breast. **Methods:** In present study, fine needle aspiration cytology (FNAC) was done on hundred (100) female patients less than 30 years of age and these were later on operated and histopathology specimens were available for correlation. **Results:** Out of 100 patients 93% were benign and 7% were malignant. Fibroadenoma was most common present in 63% cases, fibrocystic disease in 11%, phyllodes tumor in 2 % cases, 2% of atypical cases, 1% as papilloma, 1% as mastitis, 7% as malignant. The sensitivity of FNAC was 85.7% specificity was 100%, accuracy was 99%. **Conclusion:** It was concluded from the present study that expertise of FNAC has reached high accurate levels, FNAC report can be of great value in young females presenting with breast lump.

Keywords: FNAC, Lump, Histopathology.

INTRODUCTION

The objective of study is to evaluate spectrum of lesions of breast in patients presenting with breast lump and evaluate role of FNAC in non-neoplastic lesions and neoplastic lesions of breast, to find cytological, histopathological and clinical correlation. The use of needle aspiration cytologic evaluation in the diagnosis of solid masses was first reported by Kun M,1847.[1] Fine needle aspiration cytology had become a proven diagnostic method as stated by Martil HE et al,1930 who introduced this technique to obtain material for cytological examination.[2] Various reports have demonstrated the accuracy of FNA in diagnosis of palpable breast masses. It has the advantages of safety, low cost and excellent patient acceptance.[3] FNA decreased the need for open surgical biopsy for definite diagnosis.[57]

MATERIALS AND METHODS

A two year prospective study was conducted from August, 2015. Patients with palpable breast lump diagnosed clinically and on fine needle aspiration cytology and further confirmed on histopathological examination in the Department of Pathology, Govermant Medical College, Patiala were selected for the study. This study was carried out in 100 patients. In present study, fine needle aspiration cytology (FNAC) was done on hundred (100) female patients less than 30 years of age attending the outdoors of Rajindra Hospital, Patiala between the period of August 2015 to September 2017. These were later on operated and histopathology specimens were available for correlation. In all the cases, pertinent clinical information like age of the patient, presenting features and physical findings of the lump along with the relevant investigations was recorded. Informed written consent was taken from all the patients.

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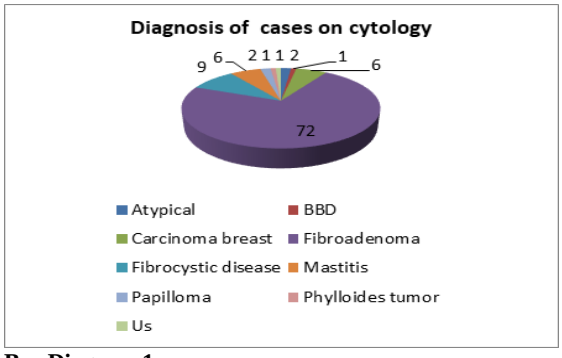
RESULTS

Out of 100 aspirates, 7 were categorised as malignant by cytology and 91 were categorised as benign and 2 as atypical on cytology. In all 100 cases surgery was conducted and tissue was available for histopathological examination. Thus results of FNAC were compared with subsequent histopathology available in all the 100 patients to assess accuracy sensitivity and specificity etc of the present study.

Table 1: Showing Comparison of FNAC Results With That of Histopathological Examination in 100 Cases.

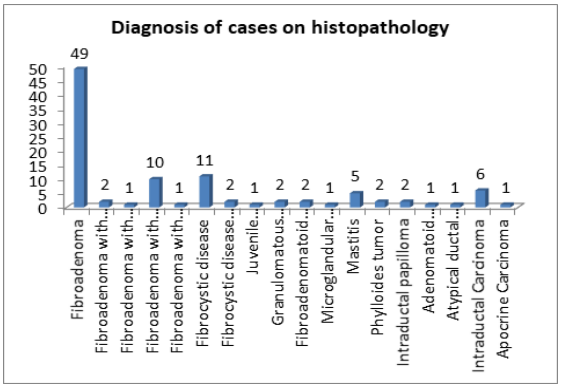
S. No.	Cytological diagnosis	No. Of cases	Histopathological diagnosis	
			Benign	Malignant
1	Malignant	6	0	6
2	Benign	92	91	1
3	Atypical	2	2	0

Out of 100 cases, 6 were diagnosed malignant by cytology all came out malignant on histopathology . Out of 92 cases diagnosed benign by cyotology 1 turned out to be malignant. 2 cases were diagnosed atypical on cytology came out be atypical on histopathology but are taken in benign group. [Table 1] All 7 cases of malignancy were in age group of more than 25 years. Since p value is .012, there is significant association between lump and age of presentation of lump. Thus concluded from the study that malignant lumps are present in later age group that is more than 25 years. Overall incidence of lump is more in left breast. Out of 93 benign cases, 49 were in left breast, 38 were in right breast, 6 were bilateral. Out of 7 malignant cases, 4 were in left breast and 3 were in right breast. Most common quadrant involved is upper outer as there were 46 cases which presented with lump in this quadrant ,then followed by lower outer quadrant in which total 21 cases presented with lump . In central area 10 cases presented with lump out, 17 benign cases presented with lump in upper inner qaudrant, 6 benign cases in lower inner quadrant. It was concluded from the study that most of lumps were between 2 to 5 cm, but malignant were mostly more than 5 cm. Since P value is .001, there is significant correlation between lump size and nature of lump.



Bar Diagram 1:

Duration of lumps was <1 month in 13 cases and all were benign, 1-3 months in 20 cases out of which16 were benign, 4 were malignant, 3-6 months in 22 cases out of which 21 were benign and 1was malignant, 6-12 months in 26 and all were benign. Under the broad heading of benign cases diagnosed cytologically, we categorized these lesions into fibroadenoma, fibrocystic disease, inflammatory lesions and cysts based on cytological findings. [Diagram 1]. There were seventy two (72) cases diagnosed as fibroadenoma on FNAC, while on histopathological examination, sixty seven (49) cases were confirmed as fibroadenoma. Fourteen were diagnosed as fibroadenoma with secondary changes. Out of seventy two cases, three were diagnosed as fibrocystic disease, one as microglandular adenosis , one as fibrocytic disease with adenosis, one as phylloides tumor and two as fibroadenomatoid hyperplasia. Out of sixty seven sixteen(14) cases showed secondary changes , ten of them showed myxoid change, two showed apocrine change, one showed sclerotic change, one cystic change. [Diagram 2]



Bar Diagram 2:

Table 2: Split Up Of 93 Histopathologically Confirmed Benign Cases.

S.No	Cytological Diagnosis	No. Of cases	Histological Diagnosis	No. Of cases
1.	Fibroadenoma	71	Fibroadenoma FA with secondary changes Juvenile Fibroadenoma Fibrocystic Disease Fibrocystic disease with adenosis Phyllodes Tumor Fibroadenomatoid hp Microglandular adenosis	49 14 1 3 1 1 2 1
2.	BBD	1	Fibrocystic disease with adenosis	1
3.	Fibrocystic disease	9	Fibrocystic Disease IDC Breast	8 1
4.	Mastitis	6	Mastitis Granulomatous	5 1
5.	Papiloma	2	Intraductal papilloma	2
6.	Phyllodes Tumor	1	Phylloides Tumor	1
7.	Unsignificant	1	Granulomatous	1
8.	Atypical	2	ADH Adenomyoepithelial adenosis with focal atypia	1 1
9.	Carcinoma breast	5	IDC Breast	5
10	Carcinoma Breast	1	Apocrine Carcinoma	1
11	Total	100	Total	100

There were eight (9) cases diagnosed as fibrocystic diseaseon cytology, out of which 8 cases were confirmed as fibrocystic disease and one was diagnosed as Intraductal Carcinoma Breast histopathology. On FNAC two (2) cases were diagnosed as mastitis, on histopathological examination one was confirmed as mastitis and one was diagnosed as granulomatous pathology. One case diagnosed on FNAC was confirmed on histoch emical examination as phylloides tumor. Two cases were diagnosed as papilloma on FNAC and were confirmed as Intraductal papilloma. One case was diagnosed as benign breast disease and was confirmed as BBD on histopathological examination. One case was given unsignificant diagnosis and was diagnosed as granulomatous pathology. One case was diagnosed as fibroadenoma with atypia on FNAC and was diagnosed as adenomyoepithelial adenosis with atypia on histopathological examination. Another case was diagnosed as atypiacl ductal hyperplasia and was confirmed as ADH on histopathological examination.

Six(6) cases were diagnosed malignant on cytology out of which five (5) cases were Intraductal Carcinoma and one as Apocrine Carcinoma.

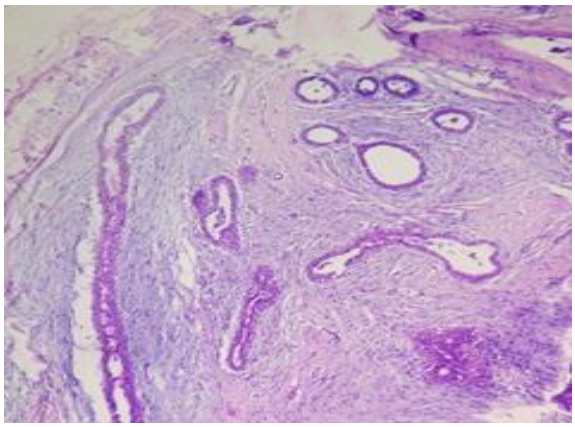


Figure 1: Photomicrograaoh showing fibroadenoma on histology(H&E).

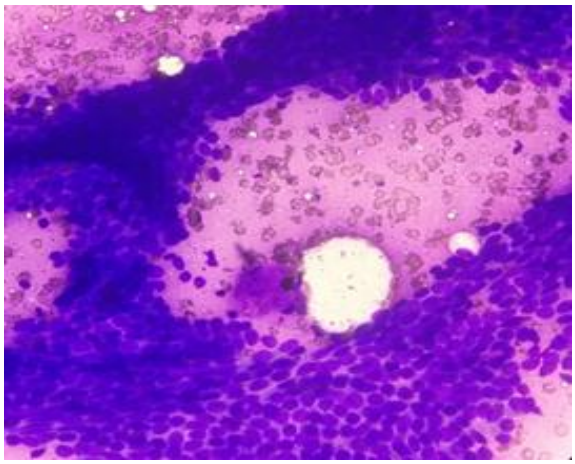


Figure 2: Photomicrograph showing fibroadenoma on cytology(MGG).

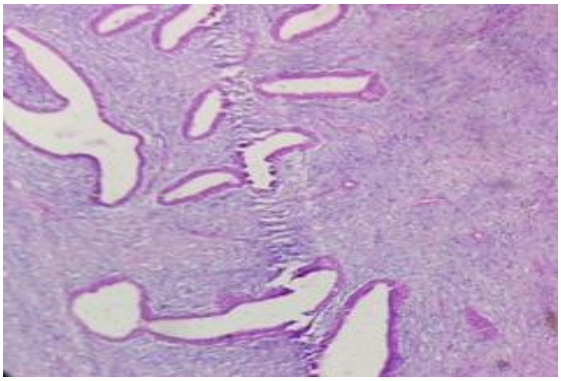


Figure 3: Photomicrograph showing Phyllodes Tumor on histology (H&E)

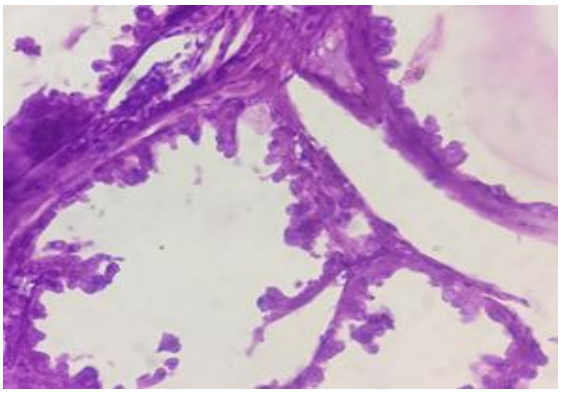


Figure 4: Photomicrograph showing fibrocystic disease on cytology (MGG).

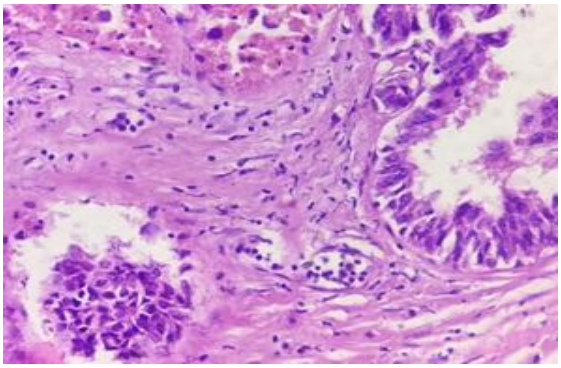


Figure 5: Photomicrograph showing Carcinoma Breast on histology (H&E).

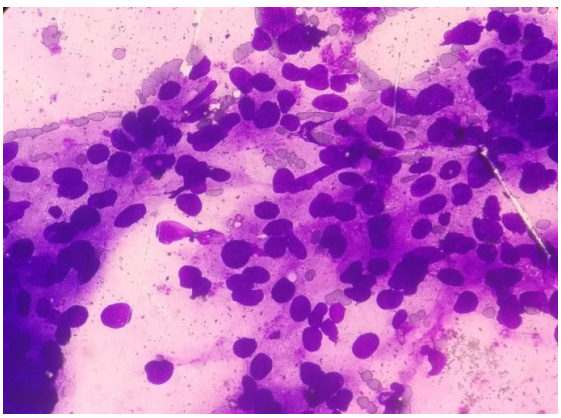


Figure 6: Photomicrograph showing Carcinoma Breast on cytology (MGG).

DISCUSSION

Breast disease in young women shows different trends and disease patterns than does breast diseases in older women. Incidence of malignant breast disease is very less in young women. However it is important that breast cancer in this young group of women be accurately diagnosed without any delay so that an appropriate plan of management can be adopted. This can be achieved by liberal surgical biopsy. However such a high biopsy rate is undesireable in the management of benign disease especially when diagnostic information can be obtained by less invasive means such as FNAC. The present study was conducted to find out role of FNAC in diagnosis of breast lump in young women. The comparison of cytological features was done with histologically confirmed cases. Thus sensitivity, specificity and predictive value were calculated in the study at Govt. Medical College, Patiala. The results were compared with that of similar studies. In the present study, FNAC was done in a total of 100 females less than 30 years from August 2015 to September 2017 and was compared with histologically confirmed diagnosis. The sensitivity of FNAC was 85.7% specificity was 100%, positive predictive value was 100%, negative predictive value was 98.9 % accuracy was 99%The statistical values were compared with that others studies like Konstantinos et al[7]observed sensitivity 97.7%, specificity 98%, positive predictive value 96.9%, negative predictive value 98.5% and accuracy 97.9%. Another study by Sankaye and Dongre et al gave statistical values as sensitivity 88.37%,[11] specificity 96.2%, positive predictive value 97.43%, negative predictive value 94.37% and accuracy was 9154%. [Table 3]

Table 3: Comparison Of Statistical Values In Different Studies.

Study	Year	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)	Accuracy (%)
Konstantinos et al[7]	2005	97.7%	98%	96.9%	98.5%	97.9%
Sankaye and Dongrel[11]	2014	88.37 %	96.2%	97.43 %	94.37 %	91.54 %
Present Study	2017	85.71 %	100%	100%	98.94 %	99.0%

Out of 100 patients 93% were benign and 7% were malignant. This was concluded by other studies like Malik R. et al in which percentage of benign cases were 89% and malignant were 11%.[5] According to Choudhary PK et al.[15] Et al 94.6% of cases were benign and 5.4% were malignant. This was concluded by another study in which 87.7% were benign and 12.3% were malignant.[Table 4]

Table 4: Comparison Of Incidence Of Benign And Malignant Cases In Different Studies.

Study	Year	Benign	Malignant
Malik and Bhardwaj[5]	2003	89%	11%
Raza et al[17]	2013	87.7%	12.3%
Choudhary et al[14]	2015	94.6%	5.4%
Present study	2017	93%	7%

In present study fibroadenoma was present in 63% cases, fibrocystic disease in 11%, phyllodes tumor in 2 % cases, 2% of atypical cases, 1% as papilloma, 1% as mastitis, 7% as malignant. We compared only common cases with other studies. Other cases diagnosed were fibroadenomatoid hyperplasia, microglandular adenosis, adenomatoid adenosis, granulomatous pathology. According to priyangaa Sathasivam et al they diagnosed 50% fibroadenoma,[12] 34% fibrocystic disease, 4% phylloides tumor, 4% atypical, 2% malignant. According toShrivastava JP et al 57% fibroadenoma,[15] 9% fibrocystic disease, 2% atypical, 1% papilloma, 1% mastitis, 20% malignant cases. Another study by Singh et al found that 89.1% of fibroadenomas cases were in age group of 10-30 years. Nine cases (8.82%) were malignant.[18] In present study 49% of lumps were on left side, 39% were on right side, 6% were bilateral. Another study Samir S. Amr et al identified 45.5% of lumps on left side,[6] 40.2% on right side, 7.1% were bilateral, side was not recorded in 20 patients (7.1%) According to U. Murali et al observed 95 patients 50.5% of them lumps on left side,[13] 43.2% on right side and 6.3% bilaterally. Sandeep kumar Goyal et al observed 47.1% of lumps on left side,[16] 44.2% on right side, 8.7% bilaterally. In present study cases presented with lumps of duration less than one month were 13%, of one to three months were 20%, three to six months were 22%, from six to twelve months were 26.0% and of duration more than twelve months were 19%. According to Sandeep Kumar Goyal et al study lumps of duration less than one month were 17.4%,[16] from one to three months were 7.2%, from three to six months were 13%, from six to twelve months were 14.2% and lumps of duration more than twelve months were 40.6%. The duration was not documented in 10 (7.2%) patients.

In present study lump in the breast were observed in different quadrants as 46% were in upper outer quadrant, 21% were in lower outer, 105 were in cental area, 17% were in upper inner and 6% were in lower inner. Kahn ZM et al observed 52.85 lumps in upper outer quadrant, 18.9% in lower outer,[9] 10.2% in central area,13.4% in upper inner quadrant and 4.7% in lower inner quadrant. Another study by Karia et al found breast pain as significant presenting complaint and in present study 55 patients presented with pain.[10]

CONCLUSION

It was concluded from the present study that expertise of FNAC has reached high accurate levels,

FNAC report can be of great value in young females presenting with breast lump. It can detect malignant lesions in young females with high sensitivity however less the incidence of carcinoma may be in this age group and further line of management can be planned without unnecessary delay.

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