

Original Research Article

To study the clinical and cytology profile of breast lesion

Dr. Jyoti Yadav¹, Dr. Pushpa Batham², Dr. D B Sharma³, Dr. Dinesh Kumar Malviya⁴

¹Postgraduate Resident, Department of Pathology, N.S.C.B. Medical College & Hospital, Jabalpur (M.P.)

²Associate Professor, Department of Pathology, N.S.C.B. Medical College & Hospital, Jabalpur (M.P.)

³Professor, Department of Surgery, N.S.C.B. Medical College & Hospital, Jabalpur (M.P.)

⁴Assistant Professor, Department of Medicine, Shyam Shah Medical College, Rewa (MP)

Corresponding Author: Dr. Dinesh Kumar Malviya

ABSTRACT

BACKGROUND:

FNAC of breast lumps is an accepted and established method for determine the natures of breast lumps with a high degree of accuracy and it may play an important role when it is difficult to determine the nature of breast lump by clinical examination.

MATERIAL AND METHOD:

The present study is hospital based cross sectional study was carry out from March 2021 to September 2022 on 183 patients in cytology section of pathology department, Netaji Subhash Chandra Bose Medical College & Hospital Jabalpur (M.P).

RESULT:

In our study, the maximum number of cases was in the 20-39 years age group, with 84 cases (45.90%). The mean age was 37 ± 14.65 . The majority of breast lesions presented as a lump, with 157 cases (85.8%). The size was <2 cm in 76 cases (41.53%), unilateral in 164 cases (89.62%), located in the upper outer quadrant in 117 cases (63.93%), firm in consistency in 122 cases (66.67%), with regular margins in 128 cases (69.95%), mobile in 126 cases (68.85%), and the aspirate material was whitish in color in 121 cases (66.12%). In the present study, the most common pattern on cytology was fibroadenoma (FA), accounting for 105 cases (57.4%)

CONCLUSION: We concluded that FNAC is simple rapid, minimally invasive cost effective, reliable outpatient procedure highly sensitive in making early and accurate diagnosis.

Key Words: Breast Lesion, Cytology, Clinical Profile

1. INTRODUCTION

The most common signs and symptoms reported by woman are lumpiness or palpable mass, pain, inflammatory changes, nipple discharge. Greater than 90% of symptomatic breast lesions are benign.

Lumpiness/ Palpable Breast Mass can arise from proliferation of stromal cells or epithelial cells. They are generally detected when 2-3cm in size. Most of (90%) are benign. These are round to oval in shape, firm to rubbery in consistency and freely mobile and well circumscribed borders. The most common benign lesion is fibroadenoma and cysts. In malignant condition they are often hard in consistency, and usually irregular in borders. Approximately 50% of carcinoma are located in upper outer quadrant and 10% are in remaining quadrant and 20% in the central or subareolar region.

Mastalgia or breast tenderness/pain is 90% benign.¹ Some authors have found the symptoms associated with cyclic breast changes can be alleviated to varying degrees by reducing caffeine intake (coffee, tea, cola and chocolate), vitamin E cream application, or taking evening primrose oil.² Others, however these treatments may be ineffective and recommend instead a well-fitting bra, flaxseed and topical NSAIDs gel as treatments for mastalgia.³

Noncyclic breast pain usually occurs in postmenopausal women and noncyclic breast pain caused by certain medications like antidepressants, digoxin, thiazide-class diuretics, and methyl dopa.⁴

The third most common presenting symptom is nipple discharge in after palpable masses and pain. Discharge is more suspicious if it is unilateral, from a single duct, spontaneous, persistent, and clear, serous, serosanguinous, or blood stained in character.⁴ Approximately 55% of patients presenting with nipple discharge have associated mass, 19% of which are malignant disease.⁵ FNAC has been found to have sensitivity ranging from 81% to 97.5% and specificity of more than 99%.⁶⁻⁸

2. MATERIAL AND METHOD

The present study was conducted in patients with clinically palpable breast lump, referred for fine needle aspiration cytology (FNAC) from surgery department to cytology section of pathology department, Netaji Subhash Chandra Bose Medical College, Hospital Jabalpur (M.P)

This hospital based cross sectional study was performed to study the various cytomorphological pattern and frequency of breast lesions / lump in NSCB medical college Jabalpur (M.P.).

AIMS & OBJECTIVE

1. To assess the clinical profile of breast lesion.
2. To assess breast lesion based on cytology report

Inclusion Criteria:

1. Female with palpable lump in breast >1cm clinically.
2. Age group 12-90 yrs.
3. Patients giving consents for the study

Exclusion Criteria:

1. Clinically not palpable lump in breast.
2. Males are not included.
3. Patients not giving consent for study.

Duration of Study - March 2021 to September 2022

Sample Size - 183

Statistical Analysis -The data of the present study will be recorded / fed into the computers and after its proper validation, check for error; coding and decoding will be compiled and analyzed with the help of SPSS 20 software. Appropriate univariate and bivariate analysis and the descriptive statistics will be carried out other statistical tests such as student's t-test for continuous data and fishers exact test or X2 test for categorical data will also be applied. All means are expressed as mean \pm standard deviation and proportion as in percentage (%).

OBSERVATION AND RESULTS

Table No-01: Age wise Distribution of Cases

Age Group (years)	Frequency (n)	Percent (%)
<20	34	18.58%
20-39	84	45.90%
40-59	52	28.42%
\geq 60	13	7.10%
Total	183	100.00%

In our study (Table No-01), the maximum number of cases was in the 20-39 years age group, with 84 cases (45.90%), followed by the 40-59 years age group, with 52 cases (28.42%). The mean age of the study population was 37 ± 14.65 .

Table No 02: Various Clinical Parameter of Breast Lesions

Various Clinical parameter	Frequency (n)	Percent (%)	
Clinical presentation	Lump	157	85.79%
	Lump with pain	22	12.02%
	Nipple discharge	4	2.19%
Size	< 2 cm	76	41.53%
	2 - 5 cm	66	36.67%
	> 5 cm	41	22.40%
Laterality	Unilateral	164	89.62 %
	Bilateral	19	10.38 %
Lump Location	Upper Outer quadrant	117	63.93%
	Upper Inner quadrant	29	15.85%
	Lower Outer quadrant	18	9.84%
	Lower Inner quadrant	15	8.20%
	central Swelling	4	2.18%
Consistency	Firm	122	66.67%
	Hard	61	33.33%
Margin	Regular	128	69.95%
	Ill- define	55	30.05%
Mobility	Mobile	126	68.85%
	Non-mobile/Fixed	57	31.15%

Aspirate Material in FNAC	Whitish material	121	66.12%
	Blood mixed material	62	33.88%

In the present study (Table No. 02), clinically palpable breast lumps were observed in 157 cases (85.79%), followed by 22 cases (12.02%) with lumps accompanied by pain, and the remaining 4 cases (2.19%) presented with nipple discharge.

In the present study, the breast lump size was < 2 cm in 76 cases (41.53%), followed by 2-5 cm in 66 cases (36.67%). In the remaining 41 cases (22.40%), the size of the lump was greater than 5 cm. The mean size of the lump was estimated to be 2.7 cm (± 1.28).

In the present study, the majority of breast lumps were found unilaterally in 164 cases (89.62%), followed by bilaterally occurring breast lumps in 19 cases (10.38%).

In this study, the most commonly involved quadrant of the breast was the upper outer quadrant, accounting for 117 cases (63.93%) out of a total of 183 cases. The upper inner quadrant was involved in 29 cases (15.85%), followed by the lower outer quadrant in 18 cases (9.84%), and the lower inner quadrant in 15 cases (8.20%). Central swelling was present in only 4 cases (2.18%).

In this study, the maximum number of cases were found to be firm in consistency, accounting for 122 cases (66.67%), followed by hard consistency present in the remaining 61 cases (33.33%).

In the present study, a regular margin of the lump was observed in 128 cases (69.95%), followed by an ill-defined margin in 55 cases (30.05%).

In our study, the maximum number of breast lump cases were found to be mobile, accounting for 126 cases (68.85%), followed by 57 cases (31.15%) that were non-mobile.

In our study, the most common aspirate material was whitish in colour, accounting for 121 cases (66.12%), followed by blood mixed aspirate in 62 cases (33.88%).

Table No 3: Cytology Pattern Wise Distribution of Cases

Cytology Patterns	Frequency (n)	Percent (%)
Benign breast lesion (BBL)	18	9.8%
Fibroadenoma (FA)	105	57.4%
Atypical ductal hyperplasia (ADH)	9	4.9%
Ductal carcinoma breast (DCB)	47	25.7%
Phyllodes (PHY)	4	2.2%
Total	183	100.0%

In the present study (Table No. 3), the most common pattern on cytology was fibroadenoma (FA), accounting for 105 cases (57.4%), followed by ductal carcinoma of the breast (DCB) with 47 cases (25.7%), benign breast lesions (BBL) in 18 cases (9.8%), atypical ductal hyperplasia (ADH) in 9 cases (4.9%), and phyllodes tumors reported in only 4 cases (2.2%).

3. DISCUSSION

In the present study, a total of 183 female patients between the ages of 14 and 78 were included. The majority of cases, 136 (74.35%), were between 20 and 59 years old. Most of the patients in our study belonged to the active reproductive age group (20-39 years), with the youngest patient being 14 years old and the oldest being 78 years old. The common age group affected by benign breast disease was 20-39 years. The mean age was 37 ± 14.6 years (Table No. 01). A study by Cherath SK et al⁹ found that 65.11% of cases were in the age range of 26-55 years with a mean age of 46.1 years. However, studies by Teronpi J et al¹⁰ and Agrawal M et al¹¹ found that the maximum number of cases were found in the range of 40 to 49 years, as their studies included only cases with malignancy unlike our study, which included both benign and malignant breast lesions. In a study by William J et al¹², the mean age was 44.3 ± 14.8 years. Further observing the clinical presentation in our study (Table No. 02), the most common clinical presentation was a palpable breast lump/lumpiness seen in 157 cases (85.79%),

followed by lump pain in 22 cases (12.02%), and nipple discharge in 4 cases (2.19%). Similar clinical presentations were found by Teronpi J et al.¹⁰

In present study, observing the size of breast lump, the most common breast lump size was <2cm in 76 cases (41.53%), followed by 2-5 cm in size 66 cases (36.67%), and >5cm size in 41 cases (22.40%) (Table no 02). Study done by William J et al,¹² found that size of breast lesions in most patients (73%) was < 4 cm in size.

In this study (Table No. 02), the majority of cases were noted as unilateral breast lumps, with 164 cases (89.62%), followed by bilateral breast lumps in 19 cases (10.38%). Similar results were found by Agrawal M. et al.¹¹, where 92.6% of cases were unilateral. In the study by Cherath SK et al⁹, it was found that 97.58% of cases were unilateral.

On further examination of the patients presenting with a lump in the breast (Table No. 02), we observed that the lump was most commonly found in the upper outer quadrant in 117 cases (63.93%), followed by the upper inner quadrant in 29 cases (15.85%), the lower outer quadrant in 18 cases (9.84%), the lower inner quadrant in 15 cases (8.2%), and central/diffuse swelling in 4 cases (2.18%). In the study by William J et al¹², the upper outer quadrant was the most commonly involved region (70%), while Cherath SK et al.⁹ found that 48.31% of cases had involvement of the upper outer quadrant.

In this study, majority of breast lump were firm in consistency 122 cases (66.67%), while 61 cases (33.33%) hard in consistency (Table no 02). Study done by William J. et al,¹² found that the majority (92.5%) of the breast lumps examined were firm to hard in consistency.

In present study, regular margin was found 128 cases (69.95%), followed by ill-define margin 55 cases (30.05%) (Table no-02). In contrast study done by William J. et al¹² found that margins were ill-defined in 35 (52.2%) patients because they included only malignant cases. Unlike our study, including both benign and malignant breast lesions.

In present study, we found mobile breast lump in majority of cases 126 (68.85%), followed by non-mobile /fixed breast lump in 57 cases (31.15%) (Table no -02) while study done by William J. et al,¹² observed that non mobile cases were 35 (52.2%) because they found malignancy in maximum number of cases.

In our study (Table No. 02), the most common FNAC aspirated material was whitish in 121 cases (66.12%), followed by blood mixed material aspirate in 62 cases (33.88%). A similar observation was made in the study conducted by Agrawal M. et al¹¹

In present study, on the basis of cytological pattern, we found most common breast lesion on cytology fibroadenoma (FA) 105/183 cases (57.4%) (Table no 03), similar result found by Panjvani SI. et al,¹³. The second most common cytology finding for breast lesions in our study was Ductal Carcinoma of the Breast (DCB), which was found in 47 cases (25.7%). The most common malignant lesion of the breast was Ductal Carcinoma of the Breast (DCB) by Teronpi J et al.¹⁰, whose study included only malignant cases of breast, and another study by William J et al.¹², where the most common cytological findings were Ductal Carcinoma of the Breast, and the most common age group affected was four to five decades of life. In our setup young age group patient are most common, so fibroadenoma most common breast lesion in our findings.

4. CONCLUSION

In present study, we concluded that FNAC is simple rapid, minimally invasive cost effective, reliable outpatient procedure highly sensitive in making early and accurate diagnosis.

5. REFERENCE

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