

**THE ROLE OF CORE NEEDLE BIOPSY IN BREAST LUMP WITH
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ABSTRACT

Objective: In this study our main goal is to evaluate the role of Core needle biopsy in breast lump with histopathology findings. **Method:** This cross sectional study was conducted at tertiary medical college hospital and private diagnostic center where 100 patients attending the surgery outpatient department (OPD) for breast pathology. A detailed clinical history and examination was done using a standardized proforma. Patients with a positive clinical examination (palpable breast lump/nodularity) were subjected to CNB. **Results:** During the study, majority belong 41-50-year age group and lesions ranged in size from 1 cm to 14 cm. Majority 56% had breast lumps more than 5 cm in size and 89% had a single lump. In addition, according to cytology Finding of Breast Lump on CNB benign (B2) cases were 36% where Fibroadenoma cases were 10%, Benign breast lesion 9%, Fibrocystic change in 6% where as malignant cases were found in 50% cases where majority, 33% cases were Infiltrating ductal carcinoma. However, after final histopathological examination, actual malignant cases were 48%. Though significant correlation was noticed, 0.001. **Conclusion:** To conclude, taking into account the benefits and outcomes, we argue that CNB should be preferred for the diagnosis of breast lumps. However higher sample size is needed for better outcome.

KEYWORDS: Core needle biopsy (CNB), breast cancer, B1(Unsatisfactory/normal tissue only), B2 (Benign), B3 (Benign, but of uncertain malignant potential), B4 (Suspicious of malignancy), B5 (Malignant).

INTRODUCTION

The global incidence of breast cancer is growing, which is thought to be attributable in part to mass screening programs that have resulted in the finding of clinically occult breast tumors.^[1] A more careful approach is necessary in these lesions to collect suitable tissue samples for preoperative pathological investigation.

Core needle biopsy (CNB) roles have been well established as a key diagnostic tool for both palpable and non-palpable breast lesions, and it is regarded as the preferred approach for tissue sample.^[2]

Furthermore, CNB is less invasive than excision biopsy and provides more accurate information than fine needle aspiration biopsy cytology (FNAC), particularly for architectural or histological information.

In many facilities, needle core biopsy has supplanted FNA cytology as the preferred approach for examining non-palpable lesions, and in a significant proportion of

instances, it is the only diagnostic procedure.^[3-5] The sensitivity and specificity of core biopsy are both reported to be at least 90%.^[6]

OBJECTIVE

To evaluate the role of Core needle biopsy in breast lump with histopathology findings.

METHODOLOGY

This cross sectional study was conducted at tertiary medical college hospital and private diagnostic center where 100 patients attending the surgery outpatient department (OPD) for breast pathology. A detailed clinical history and examination was done using a standardized proforma. Patients with a positive clinical examination (palpable breast lump/nodularity) were subjected to CNB. Patients with palpable axillary lymph nodes were included in the study.

All collected data were coding and input in SPSS-25 for further analysis. Both descriptive and inferential statistics

done. Descriptive statistics included frequency distribution, percent, mean, standard deviation; graph, tables, figures and inferential statistics.

RESULTS

In table-1 shows age distribution of the patients where most of the patients belong to 41-50 years age group, 60%. The following table is given below in detail:

Table 1: Age distribution of the patients.

Age group	Percentage %
31-40 years	20.8
41-50years	60
>50years	18.7
Total	100.0

In table-2 shows demographic status of the patients where 41.7% just completed their secondary level of education followed 75% patients married in 13-17 years

age and got 1st pregnant by 14-18 years old. The following table is given below in detail:

Table 2: Demographic status of the patients.

Educational status	Percentage %
Illiterate	8.3%
Primary	12.5%
Secondary	41.7%
SSC	25%
HSC	12.5%
Age of marriage	
13-17 years	75%
18-25 years	25%
1st pregnancy age after marriage	
14-18 years	75%
19-25 years	25%

In figure-1 shows parity distribution where primigravida were 4.2% and multigravida were 95.8% cases. The following figure is given below in detail:

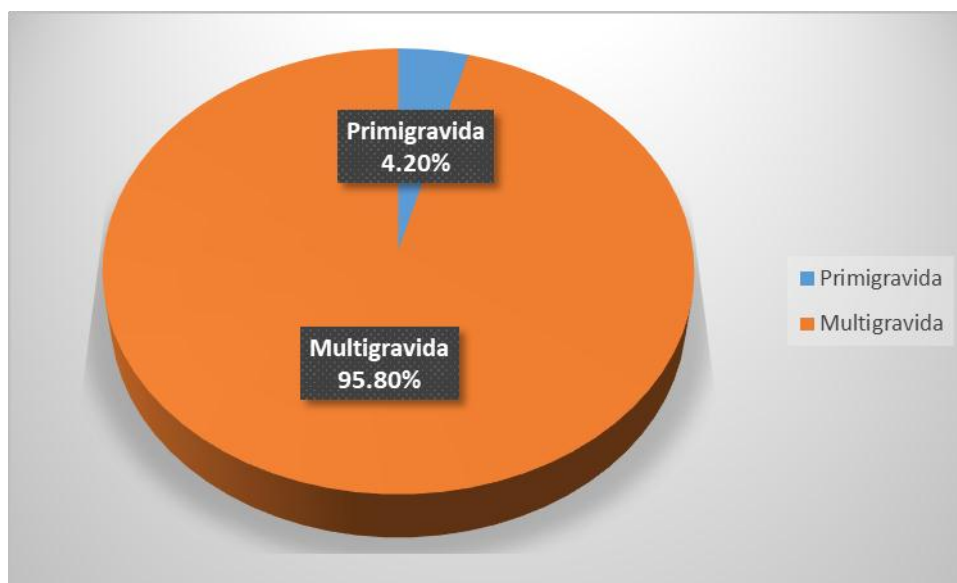


Figure-1: Parity distribution.

In table-3 shows clinical status of breast lumps where lesions ranged in size from 1 cm to 14 cm. Majority 56%

had breast lumps more than 5 cm in size and 89% had a single lump. The following table is given below in detail:

Table 3: Clinical status of breast lumps.

Clinical status of breast lumps	Range, %
Lesions range	1-14 cm
lumps of size:	
Up to 2 cm	44%
More than 5 cm	56%
Lumps number:	
Single in either breast	89%
Multiple lumps single breast	5%
Lumps in both breast	6%

In table-4 shows cytology Finding of Breast Lump on CNB where benign (B2) cases were 36% where Fibroadenoma cases were 10%, Benign breast lesion 9%, Fibrocystic change in 6% where as malignant cases were

found in 50% cases where majority, 33% cases were Infiltrating duct carcinoma. The following table is given below in detail:

Table 4: Cytology Finding of Breast Lump on CNB.

Cytology Finding of Breast Lump on CNB	%
B1 (Unsatisfactory/normal tissue only)	9%
B2 (Benign):	
Benign breast lesion	9%
Fibrocystic change	6%
Sclerosing adenosis	4%
Fibroadenoma	10%
Benign phyllodes tumor	3%
Duct ectasia	2%
Lipoma	1%
Epithelial hyperplasia-usual type	1%
B3 (Benign, but of uncertain malignant potential)	2%
B4 (Suspicious of malignancy)	3%
B5 (Malignancy):	
Infiltrating ductal carcinoma	33%
Infiltrating lobular carcinoma	6%
Intracystic papillary carcinoma	4%
Metaplastic carcinoma	2%
Medullary like carcinoma	1%
Squamous cell carcinoma	1%
Malignant phyllodes tumor	1%
Malignant mesenchymal tumor	2%

In table-5 shows histopathology outcomes where according to CNB results 50% cases were malignant (B5) but after histopathology actual malignant cases

were 48%. Though significant correlation was noticed, 0.001. The following table is given below in detail:

Table 5: Histopathology outcomes.

CNB	%	Histopathology	%	P value
Malignancy (B5)	50%	Malignancy (B5)	48%	0.001
Non-malignancy (B2)	36%	Non-malignancy (B2)	38%	

DISCUSSION

In our study majority belong 41-50 year age group, 60% and high parity (3 births or more) were commonly seen which was quite similar to other studies.^[7-10]

In addition in clinical status in study reported that, lesions ranged in size from 1 cm to 15 cm. The palpable lumps had two peaks. In their study 22.42% had lumps of size up to 2 cm while 24.29% had breast lumps more than 5 cm in size and 91.58% had a single lump^[11] where

as in our study lesions ranged in size from 1 cm to 14 cm. Majority 56% had breast lumps more than 5 cm in size and 89% had a single lump.

In one study conducted about the comparison between FNAC and CNB diagnoses reported that, the percent positivity of malignant diagnosis on CNB (B5) was 44.85% while that on FNAC (C5) was 30.84%. Thus CNB detected 14.01% more malignant cases than FNA.^[12]

Where as other study reported that, the suspicious rates for FNAC (C3&C4) expressed as a percentage of the total number of cases was 38.31% compared to the suspicious rate of CNB (B3&B4) of just 2.80%. Percentage of benign cases diagnosed on FNAC (C2) was 28.03 while that on CNB (B2) was 44.85. Thus there was a 16.82% increase in definitive benign diagnosis by CNB over FNA.^[13]

Another study found about the Cytology-CNB-Histopathology concordance in eleven cases consisting of fibroadenoma (n=7) and benign phyllodes tumor (n=4). One case diagnosed as inflammatory on FNAC was given a diagnosis of fat necrosis on CNB and histopathology. Two cases were discordant and were diagnosed as benign breast lesion (BBL) and benign phyllodes tumor (BPT) on FNAC but were given a diagnosis of IDC and malignant phyllodes tumor (MPT) on CNB and histopathology. Twelve cases showed cytology-CNB-radiology concordance and thus the lesions were not excised. The remaining four C2 cases showed unsatisfactory material (B1) on CNB. Since the radiology/clinical examination was benign, no further intervention was done.^[14]

Besides that, another study revealed that, there was no statistical difference between the diagnoses offered by histopathology and CNB, which was also reflected by the false negative rate of CNB of 4.16% and no false positive results. The sensitivity and specificity for FNAC was 64.58% and 100% respectively while that for CNB was 95.83% and 100% respectively.^[15] Which was quite consistent to our study where we found significant co relation between diagnoses offered by histopathology and CNB, 0.001.

CONCLUSION

To conclude, taking into account the benefits and outcomes, we argue that CNB should be preferred for the diagnosis of breast lumps. However higher sample size is needed for better outcome.

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