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Female Patients Undergoing Resection of Breast Tumors at a Tertiary Care Hospital: FNAC

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ABSTRACT

Various diagnostic methods have been developed to evaluate the palpable and non-palpable breast lesions with the goal of identifying a sensitive, specific, efficient and economical approach to diagnosing the breast cancer. Physical examination, mammography, ultrasonography, fine needle aspiration cytology, core needle biopsy, open excision biopsy, thermograph are all used to a greater or lesser extent in the diagnostic work up of a palpable breast mass. In this prospective study, 30 female patients with breast tumors were selected based on inclusion and exclusion. Institutional ethical clearance was obtained. Detailed clinical history was taken and thorough physical examination was done in each patient. Complete pre-operative work up-investigations and medical fitness for surgery were obtained. The patient was informed about the procedure and informed consent was obtained before the patient was subjected to surgery. The age incidence ranged from 24 years-67 years (mean age 37.93 years). The most common age group for malignant lesions was >50 years of age. All the 30 patients were females in our study. All the 30 patients complained of lump in the breast. The other symptoms were pain in the lump/breast, discharge per nipple and lump in the axilla. 13 patients complained of lump in right breast and 15 in left breast. Two patients had bilateral malignant lumps.

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Key Words
Breast tumors, FNAC, mammography

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INTRODUCTION

Breast cancer is the most common cancer in the western world. In India also breast cancer is the second most common cancer among women after carcinoma cervix. Cancer is the leading cause of death in women aged 40-79, in contrast to the burden of cardiovascular disease in men. The incidence of the disease has shown a steep rise in women younger than 40 years of age. Not >50% of the women with breast cancer are alive and free of disease 10 years after the diagnosis[1,2]. The mortality due to breast cancer has been decreasing in recent years, owing in part to early diagnosis and improvements in treatment. For early stages of breast cancer, surgical removal provides a reasonable chance for cure[3]. Although the approach to breast cancer has changed dramatically over the past century, so too, has the clinical presentation of breast tumors[4]. Various diagnostic methods have been developed to evaluate the palpable and non-palpable breast lesions with the goal of identifying a sensitive, specific, efficient and economical approach to diagnosing the breast cancer. Physical examination, mammography, ultrasonography, fine needle aspiration cytology, core needle biopsy, open excision biopsy, thermograph are all used to a greater or lesser extent in the diagnostic work up of a palpable breast mass. Various combinations of these approaches have been studied and found to increase the sensitivity and specificity over that of any one test alone[5,6].

MATERIALS AND METHODS

Sample Size: 30 cases.

Inclusion Criteria:

- All female patients undergoing resection of breast tumors.
- Only elective cases.

Exclusion Criteria:

- Patients with recurrence of malignancy after previous mastectomy surgery.
- All emergency cases.

Method of Collection of Data (Including Sampling Procedure IF ANY): In this prospective study, 30 female patients with breast tumors were selected based on inclusion and exclusion. Institutional ethical clearance was obtained. Detailed clinical history was taken and thorough physical examination was done in each patient. Complete pre-operative work up-investigations and medical fitness for surgery were obtained. The patient was informed about the procedure and informed consent was obtained before the patient was subjected to surgery. Based on clinical examination and FNAC findings, Patients underwent modified radical mastectomy or lumpectomy or simple mastectomy with or without axillary sampling. After clinical examination, in cases where FNAC showed malignancy, patient was taken up for modified radical mastectomy., in cases where FNAC showed suspicious of malignancy, patient was taken up for lumpectomy; in cases where FNAC showed benign, Core needle biopsy was done and based on that report, appropriate surgery was done. N2 nodal status patients were taken for surgery, after three cycles of neo adjuvant chemotherapy. During surgery, after removal of the tumor it was bisected to note the macroscopic features. Then, the cut surfaces were pressed onto a clean glass slide and fixed in 95% methanol. Special emphasis was given to tumor bearing area. Rapid haematoxylon and eosin staining were done. The smears were interpreted by the cytopathologists. The results of the imprint smears were compared with final histopathological examination (paraffin section).

RESULTS AND DISCUSSIONS

Table 1: Age Distribution of Study Participants

Age group in years	Number (N)	Percentage (%)
24-39	**10**	**33.3**
40-49	**09**	**30.0**
≥50	**11**	**36.7**
Total	**30**	**100**

The age incidence ranged from 24 years-67 years (mean age 37.93 years). The most common age group for malignant lesions was >50 years of age. All the 30 patients were females in our study. All the 30 patients complained of lump in the breast. The other symptoms were pain in the lump/breast, discharge per nipple and lump in the axilla. 13 patients complained of lump in right breast and 15 in left breast. Two patients had bilateral malignant lumps.

Table 2: Distribution of Study Participants Based on Lump Side

Lump side	Number (N)	Percentage (%)
Bilateral	2	06.7
Left	15	50.0
Right	13	43.3
Total	30	100

The duration of symptoms varied from few weeks to few months. The mean duration of symptoms was 4.8 months.

Table 3: Distribution of Study Participants Based on Duration of Tumor

Duration in months	Number (N)	Percentage (%)
≤3	7	23.3
4-6	15	50.0
>6	8	26.7
Total	**30**	**100**

The size of the breast lump ranged from 2cm-8cm.

Table 4: Distribution of Study Participants Based on Tumor Size

Tumor size	Number (N)	Percentage (%)
T2	10	33.3
T3	13	43.3
T4	7	23.4
Total	**30**	**100**

Table 5: Distribution of Study Participants Based on Nodal Involvement of Tumor

Nodal status	Number (N)	Percentage (%)
N0	11	36.67
N1	15	50.0
N2	4	13.33
Total	**30**	**100**

Table 6: Distribution of Study Participants Based on Type of Intervention Done

Surgery	Number (N)	Percentage (%)
Bilateral MRM	2	6.66
Mastectomy	4	13.33
MRM	21	70.0
MAS+SNB	1	3.33
Lumpectomy	2	6.66
Total	**30**	**100**

Table 7: Distribution of Study Participants Based on Pre-Operative FNAC Findings

FNAC findings	Number (N)	Percentage (%)
Benign	11	36.7
Suspicious	4	13.3
Malignant	15	50.0
Total	30	100

A total of 30 female patients were included in the study as per the inclusion and exclusion criteria. Institutional ethical clearance was obtained. Detailed clinical history was taken and thorough physical examination was done in each patient. After clinical examination, in cases where FNAC showed malignancy, patient was taken up for modified radical mastectomy., in cases where FNAC showed suspicious of malignancy, patient was taken up for lumpectomy., in cases where FNAC showed benign, Core needle biopsy was done and based on that report, appropriate surgery was done. N2 nodal status patients were taken for surgery, after three cycles of neo adjuvant chemotherapy. During surgery, after removal of the tumor it was bisected to note the macroscopic features and imprint cytology was done in all the cases and was reported by a cytopathologists. Those results were compared with histopathology reports of the respective cases, with histopathology being taken as gold standard diagnostic test[7,8]. Breast cancer may arise from the epithelium of the duct system anywhere from the nipple end of major lactiferous ducts to the terminal duct unit, which is in the breast lobule. The disease may be entirely in situ, an increasingly common phenomenon with the advent of breast cancer screening, or may be invasive cancer. The degree of differentiation of the tumor is usually described by 3 grades-well differentiated, moderately differentiated or poorly differentiated. Commonly a numerical grading system based on the scoring of three individual factors (nuclear pleomorphism, tubule formation and mitotic rate) is used, with grade-III cancers roughly equating to the poorly differentiated group. Previously descriptive terms were used to classify breast cancer ('scirrhous', meaning woody or 'medullary', meaning brain like). More recently histological descriptions have been used[9]. These have been shown to have clinical correlations in the way the tumor behaves and are likely to be used for the near future. However, with the increasing application of molecular markers, there will be a change and it is likely that much more information about an individual will be routinely reported, such as its likelihood of metastasis and to which therapeutic agents it will be susceptible[10].

CONCLUSION

FNAC though has been a powerful tool pre-operatively; it has its own limitations with regard to sensitivity and specificity. Most often it leads to a diagnosis that is "suspicious, but not confirmatory". In a clinical scenario, the consultant surgeon will be in a dilemma to counsel and propose the appropriate surgical modality of treatment.

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