

# Correlation of Clinical Examination and Fine Needle Aspiration Cytology with Histopathology in Diagnosing Breast Lumps

B. S. Warad<sup>1</sup>, Smita Bhosale<sup>2</sup>, S. S. Ajalkar<sup>3</sup>, B. S. Nagoba<sup>4</sup>

Professor<sup>1</sup>, Professor and Head<sup>2</sup>, Sr. Resident<sup>3</sup>, Assistant Dean<sup>4</sup>,  
Department of Surgery<sup>1,3</sup>, Department of Pathology<sup>2</sup>,  
Maharashtra Institute of Medical Sciences & Research, Latur-413 531, Maharashtra, India

**Abstract :** The present study was conducted to find out the correlation of the clinical examination and fine needle aspiration cytology (FNAC) with histopathology in the diagnosis of breast lumps in a rural area. Seventy patients presenting with breast lumps to a tertiary care hospital situated in rural area were evaluated to study the correlation of clinical examination and FNAC with histopathology to find out their efficacy in the diagnosis of breast lumps. Sensitivity of clinical examination was found 100% each in diagnosing fibroadenosis, cystosarcoma phylloides and gynecomastia, and 94.73% in diagnosis of fibroadenoma. However, Sensitivity of clinical examination in diagnosis of carcinomas was 80.00%. Sensitivity of FNAC was found 100% each in diagnosing fibroadenoma, cystosarcoma, phylloides, galactocele, infiltrating lobular carcinoma and medullary carcinoma, 77.78% in diagnosing fibroadenosis and 80% in diagnosing breast carcinoma. Sensitivity of clinical examination in diagnosing benign breast diseases was very good; however it was comparatively lower in diagnosis of carcinomas (80.00%). Similarly, sensitivity of FNAC in diagnosis of benign breast diseases was good and it was comparatively lower in the diagnosis of carcinoma. Hence, a combination of clinical examination, FNAC and histopathology is recommended in all patients and especially high risk patients with breast lumps.

**Key words:** Breast lumps, Clinical examination, FNAC, Histopathology

## Introduction :

Mammary glands, the breasts, represent a unique feature of the mammalian species. Breast tissue is embryologically derived and matures as a modified sweat gland.<sup>(1)</sup> Breast is a dynamic structure, which undergoes changes throughout a woman's reproductive life and superimposed upon this, cyclical changes throughout the menstrual cycle.<sup>(2)</sup> The breasts are composed of specialized epithelium and stroma that may give rise to both benign and malignant lesions.<sup>(3)</sup> Breast lumps have captured the attention of surgeons since ages.<sup>(4,5)</sup>

A lump in the breast is a frequent, discovered by patients being palpable and is invariably alarming to the patient and relatives due to the fear of breast cancer. Clinicians evaluating women and men with breast complaints should provide a comprehensive, efficient and timely consultation so that anxiety can be relieved by a benign diagnosis or a treatment plan can be instituted promptly, if cancer is diagnosed.<sup>(1)</sup> The diagnosis of patients with breast diseases is routinely done by standard methods of evaluation of triple assessment, which consists of clinical examination, imaging studies and FNAC and the final confirmatory diagnosis is obtained by histopathology.<sup>(2)</sup>

Clinical examination forms the basis of medicine. It is many times the only available tool, especially in rural and

peripheral areas of developing countries, like India. In recent years, the awareness about lump in breasts has increased in the general population especially in the western world and in urban areas in India. But the awareness about breast lumps is poor in the rural areas amounting to delayed presentation of these patients to medical attention. Study of correlation of the clinical examination and FNAC with histopathology will also be immensely helpful for clinicians in rural India for comparison of data with that from urban areas of India as well as from western countries. The correlation of clinical examination with histopathology will provide invaluable information on the efficacy of clinical examination in the diagnosis of breast lump. Comparing FNAC with histopathology provides useful and invaluable information on use of FNAC, which is a comparatively simple, cost effective, less invasive and more readily available test.

In the present study, an attempt has been made to study the correlation of the clinical examination and FNAC with histopathology in the diagnosis of breast lumps in a rural area.

## Subjects and Methods:

A total of 70 patients in the age groups above 10 years presenting with breast lump to the surgical outpatient

department were studied at a tertiary care hospital situated in rural area of Latur district. The correlation of clinical examination and FNAC with histopathology was carried out to find out their efficacy in the diagnosis of breast lumps.

Patients were examined clinically for the presence of lump and other associated symptoms and findings, and were advised fine needle aspiration cytology (FNAC) and sent to Department of Pathology on outpatient basis for the same. Patients with FNAC reports suggestive of breast disorders were followed further. All routine pre-operative investigations were performed. Detailed history regarding the onset of lump, its duration, progress; associated pain; nipple discharge; marital status; and lactation was noted in a predesigned proforma. Local examination of the affected breast was performed to assess the lump, tenderness and any associated nipple changes.

A written, informed, explained, valid consent was obtained for the operative procedure of lump excision. Under appropriate anaesthesia, cosmetically feasible incision was taken and simple excision/ wide local excision/ simple mastectomy/modified radical mastectomy was performed based upon the case. Excised specimens were sent to department of Pathology for histopathological examination. Histopathological examination reports were collected. Data collected was tabulated and results were noted. The baseline characteristics of the study population were assessed with the help of the mean (SD) for quantitative variables.

**Results:**

Our study population consisted of 70 cases, 68 females and 2 males. There were total of 55 cases of benign breast diseases (78.57%) and 15 cases of malignant breast diseases (21.43%). The ratio of benign: malignant breast diseases was found to be 3.6:1.

The sensitivity of clinical examination in diagnosis of fibroadenoma was found to be 94.73%. Sensitivity of clinical examination for diagnosis of fibroadenosis, cystosarcoma and gynecomastia was found to be 100%. Comparatively, the sensitivity was low in the diagnosis of carcinomas (80.00%) (Table1).

The sensitivity of FNAC in diagnosing fibroadenoma, cystosarcoma phylloides, galactocele, infiltrating lobular carcinoma and medullary carcinoma was found to be 100% each. Sensitivity of FNAC in diagnosing fibroadenosis was 77.78% while it was 80% in diagnosing breast carcinoma.

**Table 1: Correlation between Clinical examination, FNAC and Histopathological diagnosis**

Diagnosis	Clinical	FNAC	Histopathological
Fibroadenoma	36 (94.73)	38 (100)	38
Fibroadenosis	09 (100)	07 (77.77)	09
Galactocele	02 (66.67)	03 (100)	03
Gynecomastia	02 (100)	02 (100)	02
Cystosarcoma Phylloides	02 (100)	02 (100)	02
Duct ectasia	00	00	01
Breast carcinoma	12 (80)	12 (80)	15
Total	63 (90)	64 (91.42)	70

**Discussion:**

Breast disorders comprise nearly 40% of the reasons for women's reference to diagnostic centres and breast masses are the most common complaints among women.<sup>(6)</sup> Clinical examination forms an important tool in the preliminary diagnosis of breast lumps, especially in rural areas, where the modern techniques for diagnosis of breast lumps are not within the reach of laboratories. We came across a few studies evaluating correlation of clinical examination with histopathological examination. Iyer and Gore have reported sensitivity of clinical diagnosis in diagnosing fibroadenoma, galactocele, cystosarcoma phylloides to be 94.45%, 100%, 100% respectively.<sup>(7)</sup> In our study we have found comparable results with sensitivity of clinical examination in diagnosis of fibroadenoma, cystosarcoma and gynecomastia (94.73 %, 100%, 100% respectively). The results of present study fairly correlate with these findings.

In the present study, we have also studied the efficacy of clinical diagnosis in diagnosing malignancy as this is very important from the perspective of management and prognosis. In diagnosing malignancy, the sensitivity of clinical examination was found to be 80% in the present study. This finding is more or less similar to Drew et al., who reported sensitivity of 84% and Martelli et al., who documented sensitivity of 82%.<sup>(8,9)</sup> However, it is comparatively less than Dixon et al., who documented a higher sensitivity of 91%<sup>(10)</sup> and Ravi, who documented sensitivity of clinical diagnosis in diagnosing malignancy

to be 94.5%.<sup>(11)</sup>

Sensitivity of FNAC in diagnosing fibroadenoma, cystosarcoma phylloides, galactocele, infiltrating lobular carcinoma and medullary carcinoma was 100% each. Sensitivity of FNAC in diagnosing fibroadenosis was 77.78% while it was 80% in diagnosing breast carcinoma. In the present study sensitivity of 91.43% of FNAC was comparatively better than sensitivity of 84.2% documented by Laddha, and sensitivity of 79.1% reported by Drew.<sup>(12,8)</sup>

From the results of present study, it has been concluded that clinical examination, which forms the very basis of medicine and surgery is very good in diagnosing malignancy. It was found to have very high specificity and good sensitivity. This warrants for detailed clinical examination of every case of breast lumps for preliminary diagnosis of malignancy, especially in rural areas where facilities like FNAC and histopathology for confirmation are not available. in remote areas. Although, the combination of clinical examination and FNAC helps to make accurate diagnosis of malignancy reliably, histopathologic examination forms an important part and plays a key role in the final confirmation of the diagnosis, especially in suspicious cases and in patients with high risk factors for malignancy.

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#### Corresponding Author:

##### Dr. B. S. Nagoba

Assistant Dean (Research & Development),  
Maharashtra Institute of Medical Sciences & Research,  
Latur-413 531, M.S., India  
Email: dr\_bsnagoba@yahoo.com, bsnagoba@gmail.com

