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## **Incidence of breast lesion in the south Indian population of India: A clinical and imprint cytological study**

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### **Abstract**

Lesions of the breast have gained attention because of increased mortality and morbidity caused by breast cancer. Breast cytology is generally considered to be part of the initial assessment of breast lesions while frozen section technique and imprint cytology are used as intra-operative diagnostic modalities. We studied 100 specimens of breast lesion sent to the department of pathology over two years and performed imprint cytology and finally histopathology for correlation after analyzing clinical features. The majority of cases presented in the third decade of life and 72% had a benign lesion. The sensitivity of imprint cytology was 96%. This study documents that; imprint cytology of breast lesions if applied, is an accurate, simple, rapid, inexpensive, intra-operative diagnostic tool.

**Keywords:** Breast lesion, Imprint cytology, Clinical feature

### **Introduction**

The breast is a modified skin appendage, which is functional in females during lactation but is rudimentary in males<sup>[1]</sup>. Clinically, the majority of patients present with a palpable mass, inflammatory reddening, nipple discharge, or mammographically detected abnormalities. These conditions are clinically confused with malignancy. Breast lesions including carcinoma are potentially curable, if diagnosed early and treated properly. Intra-operative consultation and examinations are required by surgeons from pathologists for immediate important decisions regarding the optimal extent of surgery. Surgeons particularly want to know whether a lesion is malignant or not. Both Frozen Section (FS) and Touch Impression Cytology (TIC) serve this purpose well<sup>[2, 3]</sup>. Imprint cytology consists of smearing fresh tissue onto a glass slide, which is then stained. There has been great interest recently in the use of TIC in the management of breast cancer patients. Some examples include intra-operative evaluation of sentinel lymph nodes and surgical margins of lumpectomy specimens, as well as the provision of immediate assessment of core needle biopsy (CNB)<sup>[4]</sup>.

### **Materials and methods**

The present study was conducted in the pathology department of Dr. B. R. Ambedkar medical college & hospital. 100 cases of breast lesions were collected intra-operatively or just after the operation over two year's duration. Imprint smears were prepared from the cut surface of freshly dissected breast specimens by touching glass slides on the surface, focusing on suspicious-looking areas. The smears were immediately wet fixed in 95% Alcohol and stained by H & E and Papanicolaou stain. Leishman's stained smears were prepared on dry smears. Resected specimens were submitted for histopathological examination for correlative study.

### **Results**

Out of 100 cases, 93 were from females and 7 were from male's breast lesion. (Table 1) Majority of the patients presented in third (31%) and the fourth decade (24%) of life. (Table 2) Based on clinical diagnosis Fibroadenoma was most common in 47% of the specimen followed by carcinoma in 20% of the specimen. (Table 3) Imprint cytology examination showed that Fibroadenoma was the most common entity (37%) followed by carcinoma breast (24%). This was consistent with clinical diagnosis. However, in 4 cases the diagnosis was inconclusive. (Table 4)

**Table 1** Gender distribution pattern of breast lesions

Gender	Number of cases (%)
Female	93%
Male	07%
Total	100%

**Table 2:** Age distribution pattern of breast lesions

The age range in years	Number of cases (%)
<20	19%
21-30	31%
31-40	24%
41-50	07%
>51	19%
Total	100%

**Table 3:** Distribution of breast lesions based on clinical diagnosis.

Clinical diagnosis	Number of cases (%)
Accessory breast tissue	08%
Mastitis	02%
Gynaecomastia	07%
Fibrocystic disease	01%
Fibroadenoma	47%
Breast Lump/ mass	15%
Carcinoma Breast	20%
Total	100%

**Table 4:** Distribution of cases based on imprint diagnosis

Imprint diagnosis	Number of cases (%)
Benign/ normal breast tissue	08%
Mastitis	03%
Gynaecomastia	07%
Fat necrosis	03%
Fibrocystic disease	13%
Fibroadenoma	37%
Phyllodes tumor	01%
Positive for malignancy/Papillary Carcinoma	24%
Inconclusive/ inadequate	04%
Total	100%

## Discussion

Breast lumps are commonly encountered in routine practice. As these lumps could prove to be fatal, it is necessary to differentiate between benign and malignant lesions and reduce the number of operations performed. Although FNAC and mammography are routinely used for diagnostic purposes, the discrimination between benign and malignant nodules cannot be made in some of the cases. When the pre-operative diagnostic workup is inconclusive, an intra-operative diagnosis becomes a necessity to decide upon the extent of surgery to be performed. Imprint cytology is a simple, inexpensive, and an equally effective alternative, which offers rapidity of preparation with the same accuracy rate in addition to providing excellent preservation of cellular details without freezing artifacts. The age incidence and mean age at presentation in the present study were comparable with those in the studies by Sushma *et al*, Andrew *et al* and Ulte Susan *et al*.<sup>[5, 6, 7]</sup> The percentage of malignant lesions diagnosed by imprint cytology in the present study were very much lower than that observed by Ute Susan *et al*.<sup>[116]</sup> in their study. However, it was comparable with that found in the study by Hassanain *et al*.<sup>[8]</sup>

## Conclusion

The imprint cytology is a simple and rapid diagnostic technique. Considering its high accuracy it may be routinely used as an adjunct to histopathology especially when cryostat machines or microwave tissue processors are not available for rapid diagnosis. Currently, though the frozen section is the more popular intra-operative diagnostic technique, it may be difficult to adopt it in every situation since it is technically demanding. Imprint cytology is a simple, inexpensive, and an equally effective alternative, which offers rapidity of preparation with the same accuracy rate in addition to providing excellent preservation of cellular details without freezing artifacts.

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