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ORIGINAL ARTICLE

A Retrospective study to evaluate the Frequency of various Breast Lesions diagnosed with the help of Fine Needle Aspiration Cytology

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ABSTRACT

Background: Fine Needle Aspiration Cytology is the fundamental technique to explore the type and malignant prospects of several palpable lesions such as salivary glands, thyroid and enlarged lymph nodes. Among these palpable lesions, breast pathology is one of the most encountered entity in routine practice that can be diagnosed with FNAC.
Aim: To evaluate the frequency of various lesions of breast diagnosed with the help of Fine Needle Aspiration Cytology**.**
Methods: 100 patients of breast lump were referred from surgical departments of Arif Memorial Hospital, Lahore to histopathology laboratory of Rashid Latif Medical College, Lahore, on which Fine Needle Aspiration was performed, during a period of 2 years (2018-2019).
Results: In this study, out of 100 cases, the most frequently found lesion was fibroadenoma in the 2nd and 3rd decade of life followed by various other benign lesions. The percentage of malignant lesions was very small and all the patients with malignant lesions were above 40.
Conclusion: FNAC has become the most important component for early management of various breast lesions preoperatively. There are various factors that enhance the popularity of FNAC like its affordability, simple and easy to use.
Keywords: Fine needle aspiration**,** Breast carcinoma, cytological grading, International Academy of Cytology.

INTRODUCTION

FNAC is an important modality to diagnose various lesions of breast preoperatively[1]. Mammary carcinoma is the most important malignancy and basis of mortality and morbidity among females[2]. Almost 100,000 cases of breast carcinoma are being reported worldwide annually[3]. In developed countries like North America, Western Europe and Australia, the death rate because of breast cancer has been surprisingly decreased because of the development and accurate use of innovative and advanced procedures for early detection of various breast malignancies[4]. In the developing countries, frequency of different types of breast carcinoma is being increased every year. Benign as well as malignant breast lesions are quite common in Pakistan[5]. In our part of world, Pakistan is ranked 5th where many females are having carcinoma of breast[6]. For a definitive assessment of breast lumps, a triple test is considered the gold standard that consists of clinical examination, mammography and FNAC. FNAC is very useful with many advantages as it is a cheap, fast, reliable diagnostic method and needs no anesthesia. Frequency of open biopsies is also reduced with the use of FNAC[7]. A standardized and comprehensive metholodology has been established by International Academy of Cytology (IAC) to classify FNAC of breast lesions into C1-C5[8]. To determine the prognosis of breast carcinoma, grading of breast carcinoma necessarily be included in FNAC reports[9]. A methodical and organized reporting may enhance the quality and reproducibility of reports among departments that will ultimately help to manage the patients, improve breast health care, and expedite further research[10].

The objective of this study was to evaluate the frequency of various breast diseases that were diagnosed with the help of Fine Needle Aspiration Cytology.

MATERIALS AND METHODS

This was a retrospective study carried out at the histopathology laboratory of the pathology department of Rashid Latif Medical College, Lahore over the duration of 2 years (2018-2019). Data of 100 patients was collected and analyzed carefully. Different lesions of breast were segregated from C1-C5, according to categorization of International Academy of Cytology (IAC) [11] as follows:
C1: Insufficient material
C3: Atypical probably benign
C2: Benign
C4: Suspicious, probably in situ or invasive carcinoma
C5: Malignant

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RESULTS

In this study, we had total 100 patients of different age groups (Table 1). Fibroadenoma was the most frequently found lesion (34%) followed by breast abscess (18%), inflammatory lesions (14%), papillary lesions (8%), fibrocystic changes (8%), malignant lesions and positive for atypical cells (6% each) and suspicious for malignancy (4%) (Figure 1). Categorization was done according to IAC (Table 2).

Table 1: Association of various breast lesions with different age groups

Breast Lesions	Age Group(Years)		
	1-19	20-39	=/>40
Insufficient material		2	
Inflammatory lesions		10	4
Breast Abcess		14	4
Fibroadenoma	4	28	2
Papillary lesions		2	6
Fibrocystic changes		8	
Atypical probably benign lesions			6
Suspicious for malignancy			4
Malignant lesions			6

Graph 1:

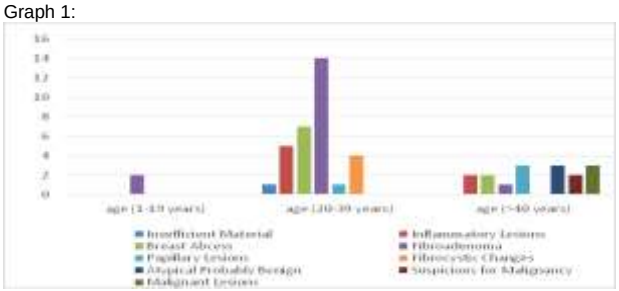


Table 2: Categorization of breast lesions according to IAC

Categorization according to (IAC)	Total number of lesions
C1	2
C2	82
C3	6
C4	4
C5	6

Figure1:

Figure 2: Inflammatory Breast Lesion (Diff Quick) 10X

Figure 3: Breast abscess with Fat necrosis (Diff Quick) 10X

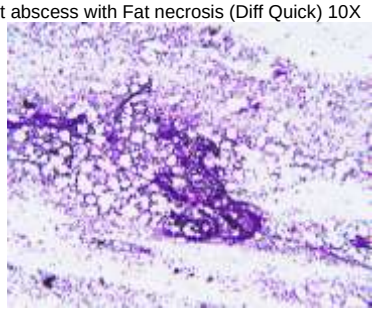


Figure 4: Fibroadenoma (Diff Quick) 10X

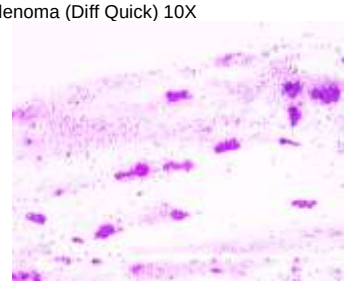
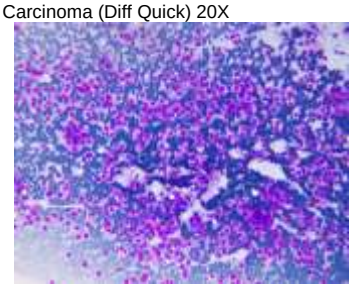


Figure 5: Breast Carcinoma (Diff Quick) 20X



DISCUSSION

The fundamental objective of FNAC is to segregate between the benign and malignant diseases of breast[12].Developing countries have considerable large number of cases in contrast to more developed countries[13]. The death rate of carcinoma breast is declining in developed countries like Australia, Western Europe, and North America, owing to the advancement of latest methods for expeditious recognition, diagnosis and refined treatment[4]. In contrast, a rise within the new cases of carcinoma is being noticed in developing countries. In Pakistan, large number of the women are affected by mammary carcinoma and thus the number of cases is escalating annually[6].

Precise and accurate diagnosis of carcinoma of the breast can be made with the help of clinical examination, mammography and FNAC, in 99% of cases. FNAC is a latest modality which is being used widely for the easily palpable breast lumps[14].

IAC standardized reporting comprises of 5 categories as C1, C2, C3, C4 and C5. C1 includes an inadequate cellularity of the epithelial cells. It can happen because of wrong aspiration, imprecise smearing or poor staining. The lesions that show the typical pattern of various benign lesions fall under C2. Inflammatory background can also be seen. Smears that show the features of pleomorphism, cellular crowding and discohesion of cells are grouped as C3 or atypical. Aspirate that reveal the characteristics like inadequate preservation, decreased cellularity, or elements of a benign smear with focal areas of pleomorphic bare nuclei, ruling out the malignancy are grouped under C4. Aspirates showing strong malignant features fall under C5[10].

This study included 50 patients with breast lump and FNAC was done to diagnose the lesions in the histopathological laboratory. Reporting was done according to IAC categorization. In our study (2%) case were grouped under C1 category because of insufficient material as showen by various other studies like Modi et al[15] (1.36%) and Sunita et al (2.9%). C2 group included fibroadenoma being the most frequently found lesion (34%) followed by breast abcess (18%), inflammatory lesions (14%), fibrocystic changes and papillary lesions (8% each). 6% cases were reported as benign lesions with atypical morphological features of nuclei and were categorized as C3.C4 and C5 included (4%) and (6%) respectively. Similar results have been showen by various researchers like Sunita et al[16] (2015) and Bajwa et al[17] (2010).

CONCLUSION

FNAC is time saving, safe, convenient and extremely précised method used for breast lesions and is being used to distinguish precisely between benign and malignant breast pathologies. A standard approach to evaluate various breast lesions is by Triple assessment by clinical, radiological and pathological examination (FNAC). FNAC can play a significant crucial diagnostic role and the need of biopsy can be minimized.

Cytological reporting according to IAC categorization improves the quality of reports among pathologist & clinicians. It might be a practical and beneficial criteria for choosing neo-adjuvant chemotherapy.

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Conflict of Interest: There is no conflict of interest.

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