INTRODUCTION
There is increasing awareness with associated anxiety and stress among women, who perceive every symptom in breast as cancer, compelling them to seek medical advice. It is sometimes difficult to determine whether a suspicious lump is benign or malignant simply from clinical assessment. With awareness growing in the general population, especially about breast pathologies, a lady with a breast lump is one of the commonest presentations in outpatient departments. Clinical examination would be followed in most patients with a confirmatory diagnosis under the microscope.

Unlike in developed countries where screening mammography is practiced, most of the patients in developing countries present with a palpable breast lump. Pathological diagnosis of the breast lump is established using fine needle aspiration cytology (FNAC), core needle biopsy or excision biopsy. A lump in the breast results in anxiety for the patient and her family whether benign or malignant. Carcinoma of the breast is the most common non-skin malignancy in women and is second only to lung cancer as a cause of cancer deaths. A woman who lives to age 90 has a one in eight chance of developing breast cancer.

In the west, there has been a sharp increase in the detection of breast carcinoma, largely due to the widespread use of mammography. Most of these cases have been early stage, measuring less than 2 cm in diameter and/or DCIS. Mammography represents the most useful modality for breast cancer screening, with mortality reduction of 30-40% in screened population. However its sensitivity is decreased in younger women with radiologically dense breast. Another limitation of planar mammography is represented by the two-dimensional visualization of a three-dimensional volumetric structure such as the breast, with a consequent superimposition of tissue.

The development in patient education and screening programmes have permitted a marked increase in the number of tumours detected, thereby increasing the use of FNAC procedures. However many surgeons are reluctant to accept FNAC reports as basis for definitive diagnosis. FNAC reports still have percentage of uncertainty, also lack information about the histopathological type, grade, receptors, and intrinsic behaviour of the tumour. All these information are of great importance for correct preoperative evaluation by both surgeons and oncologists.

FNAC is a simple and fast procedure but highly operator dependent requiring special training on the part of the pathologist. Despite the widespread use of FNAC for palpable breast lumps, it is not very helpful in preoperative decision making and management process. Though FNAC technique is simple, the patient doesn't prefer repeated needling of the breast lump. Although the ideal approach for women with suspicious breast lump is the triple assessment approach including clinical examination, cytology and mammography, but this assessment is not sufficient for decision of treatment, because FNAC reports still have percentage of uncertainty and lack important information about the histopathological type and intrinsic behaviour of the tumour. All these information are of great importance for correct preoperative evaluation by both surgeon and oncologist.

The trucut biopsy of palpable breast lesions based on histological study of tissue specimens can provide all the reliable information. Trucut biopsy permits a preoperative knowledge of the histological type and behaviour of the tumour, so trucut biopsy will guide the surgeon and the oncologist for ideal modern therapeutic strategy in surgical decision making. The sensitivity, specificity, and diagnostic efficacy obtained using the trucut biopsy is comparable to that obtained with FNAC and to that reported in literature. The high efficacy of trucut biopsy obtained in the study of palpable lesions, in addition to its simplicity and safety, might also offer a new management strategy for patients with non palpable lesions with the use of ultrasound-guided core biopsy. The trucut biopsy is well tolerated by patients, easy to perform, relatively inexpensive and suitable for use in outpatient clinics.

MATERIALS AND METHODS
The present study was a hospital based prospective study and was carried out in the department of Pathology in collaboration with the department of Surgery at MAMC Agroha Hisar. Thirty cases of breast lump presenting to the Surgery OPD between October 2017 and November 2018 were included in the study by simple random sampling. FNAC followed by TCB of the breast lump were performed on all the selected patients.

RESULTS: All thirty cases of breast lump were from female patients. Age of the patients ranged between 28 and 67 years. Both right and left side were equally involved. In 60% of the cases upper outer quadrant was involved. Out of a total of thirty cases, 5 were diagnosed as benign on FNAC of which 4 were confirmed as benign on TCB and one was diagnosed as malignant. The remaining 25 cases were diagnosed as malignant on FNAC out of which one was benign on TCB and the remaining 24 malignant. Hence there were a total of 5 benign cases and 25 malignant cases. FNAC and TCB biopsy showed a sensitivity of 96% and 100% and a specificity of 80% and 100%, each respectively.

CONCLUSION: It was concluded that both the methods are easy, safe, cheap, reliable, out-patient procedures. Whenever there is discrepancy between clinical findings, imaging studies and FNAC, TCB can be used as the next step in assessment before definitive treatment. Also, it can be used in cases of low grade malignancies, where it is difficult to give a diagnosis of malignancy on FNAC alone.

KEYWORDS: FNAC, TCB, Breast lump.

OBJECTIVES: To assess the sensitivity and specificity of FNAC in the diagnosis of breast lump and to compare these variables with those of TCB. METHODS: A hospital based prospective study was carried out in the department of Pathology in collaboration with the department of Surgery at MAMC Agroha Hisar. Thirty cases of breast lump presenting to the Surgery OPD between October 2017 and November 2018 were included in the study by simple random sampling. FNAC followed by TCB of the breast lump were performed on all the selected patients.

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diagnosing breast lumps was 96%, 80%, 96%, 80% and 96% respectively. The sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy/success rate for FNAC in diagnosing breast lumps was 100% each. Both FNAC and TCB showed statistically significant co-relation (P < 0.05) with confirmatory histopathological diagnosis of breast lump. There was no co-relation of breast lump seen with side of breast lump and size of lump.

**Figure 1** Ductal carcinoma on FNAC showing anisokaryosis, high N:C ratio, hyperchromatic nuclei, nucleoli and mitotic figures (H & E 400X)

**Figure 2** Core needle biopsy section from infiltrating ductal carcinoma (H & E 50X)

**Figure 3** Core needle biopsy section from invasive ductal carcinoma (H & E 400X)

**DISCUSSION**

Breast cancer is one of the most common cancers and is a leading cause of cancer related deaths in women. Breast cancer contributes for 25% of total cancer cases and 15% of all cancer deaths among females throughout the world. More developed countries account for almost 50% cases of breast cancer and 38% of deaths. Among Indian women, cancer of the cervix and breast account for over 50% of cancer deaths. Breast cancer is proportionately on the increase in a few metropolitan areas of India. This appears to be related to late marriage, birth of the first child at a late age, fewer children and shorter periods of breast feeding which are increasingly common among the educated urban women. Early diagnosis and management would help the patient to a
Breast lesions range from benign cysts to malignant tumors. The increase in breast cancer has led to an increase in self-detected swellings as well as apprehension on the part of the patients. The recommended approach to breast lesions is the age old triple assessment or triple test. This includes a) a detailed history (including family history) and a thorough clinical examination, b) imaging (mammography and or ultrasound), and c) preoperative cytodiagnostics (fine needle aspiration cytology or FNAC). Core needle biopsy (CNB) has proven its utility and sometimes scores over FNAC and has been added as an important modality in preoperative diagnosis alongside FNAC. The triple test is considered positive if any of the three parameters is positive and negative if all three are negative.

There is no doubt that the technical costs for a single FNAC is lower than for CNB. However, the overall costs not only depend on the procedural costs of one sampling procedure, but on the total costs to obtain a reliable definitive diagnosis. In this respect, CNB might paradoxically even be superior to FNAC, at least in selected cases. FNAC may be more cost effective for palpable lesions (with inadequacy rates of <10%), the additional cost for imaging guidance required for non-palpable lesions makes this procedure less cost effective in general.

In our study all the study subjects included were females having clinically palpable breast lumps and those who were ready to give their consent for FNAC and TCB in one setting. Majority of the females with malignant breast lump were in the age group 58 – 67 years, while those with benign lumps were in the age group 28 – 47 years. In the study done by Tonape et al 1, 3 the incidence of benign breast diseases was the highest in the age group of 21 to 30 years. In a similar study conducted by Das et al 25 45% of the cases belonged to the age group of 21 to 30 years. In our study this feature was incongruent due in part to the small sample size.

Mean age in our study was 50 years. In the study by Rahman et al 1 the population ranged from 14-86 years with a mean age of 33.6 years. Ahmed et al 3 from Sudan reported 15-85 years of age range with a mean of 37 years. Bukhari et al 4 showed a range of 16-70 years in Pakistan, Kumar et al 5 reported 6-72 years and Tiwari et al 6-17-56 years in Nepal with a mean age of 34 and 32 years respectively and 18-92 years with a mean age of 59.3 years were reported by Dennison et al 7 in the United Kingdom. The higher age range of this study as compared from Nepal and Pakistan may be explained by the increased life expectancy rates in the UK than those countries. Again the lower age range from the study of the UK is also may be due to lower life expectancy rate of Bangladesh compared to the UK.

In our study both left and right side breast lumps were equally involved and there was no case of bilateral breast lump. Out of 15 lumps in the right breast 4 were benign and 11 malignant. While among the 15 lumps of the left breast 14 were malignant and 1 was benign. In the study by Tonape et al 1 the left breast was more commonly affected. In a similar study by Singh et al 8 involvement of right breast was more than left breast. In our study, relatively malignant cases were more in the left side breast lumps though there was no statistical significance.

In our study the quadrant of the breast lump involved most commonly was the upper outer quadrant seen in 60% of the cases followed by the inner upper quadrant. Females in the age range 28 – 37 years had breast lump mostly in the inner lower quadrant, while for the remaining patients it was only the upper outer quadrant. All cases of the upper outer quadrant were malignant on diagnosis, while both left and right sides were equally involved for all lumps of the upper outer quadrant. Among all four quadrants, superolateral quadrant was the most common quadrant for breast lesions in the study by Rathi et al 9 (63.1%). Hussain et al 10 and Khemka et al 11 observed upper and outer quadrant as the commonest site.

In our study axillary lymph node involvement was seen in 17 cases which were all malignant, whereas among the 13 cases where lymph nodes were absent, 5 were benign and 8 were malignant. Axillary node involvement is the most significant and durable prognostic factor for women with breast cancer. A common route of spreading breast cancer is through the axillary lymph nodes, and the presence of axillary lymph node involvement increases with larger tumors. Tumor size is a significant predictor of axillary nodal status, which can be used to separate some patients from an unnecessary full axillary dissection. 24

In our study out of a total of thirty cases, 5 were diagnosed as benign on FNAC of which 4 were confirmed as benign on TCB and one was diagnosed as malignant. The remaining 25 cases were diagnosed as malignant FNAC out of which one was benign on TCB and the remaining 24 malignant. Hence there were a total of 5 benign cases and 25 malignant cases. The sensitivity and positive predictive value for FNAC were both 96% while the specificity and negative predictive value for FNAC were both 99%. The diagnostic accuracy or the success rate of FNAC for diagnosing benign lesions was 80%, whereas that for malignant lesions was 96%. The sensitivity, specificity, positive predictive value, negative predictive value, diagnostic accuracy and success rate were 100% each for trucut biopsy.

CONCLUSION

Cytological and histological verification of breast lesions is crucial for treatment planning. When selecting a diagnostic method, one should consider a range of factors to choose either CNB or FNAC. A multidisciplinary approach, i.e. cooperation between oncologists, radiologists and pathologists, has a positive influence on the quality of both diagnosis and treatment. Currently, core-needle biopsy is the method of choice in the diagnosis of focal breast lesions. Fine-needle biopsy is used in the diagnostic workup of cystic lesions and suspicious axillary lymph nodes in patients with breast tumors.

Various reasons have been attributed for a low sensitivity for FNAC including proficiency of the aspirator, experience of the pathologist, size of the lesion and histological type of the tumour. A study in Northampton using the combination of cytology and automated core biopsy in the diagnosis of breast cancer showed an absolute sensitivity of 80% for cytology and 88% for core biopsy, while a combination of the two biopsies resulted in a sensitivity approaching 100%.

The final sensitivity, specificity, diagnostic accuracy and predictive values for both FNAC and TCB in our study were comparable with those quoted in the literature and were similar to those of various other studies.

REFERENCES

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