



## CLINICO-RADIOLOGICAL EVALUATION OF BREAST LUMP WITH ITS PATHOLOGICAL CORRELATION

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## ABSTRACT

**Background:** Breast lumps are one of the common problems encountered in women. These lumps are frequently seen in younger to middle aged women and often they go undetected for various reasons. These lumps have different etiologic causes and can be either benign or malignant. Mostly these lumps are benign, but breast malignancy is the most common form of cancer and is the second leading cause of malignancy deaths in women. The approach to diagnosis is multi pronged and should include clinical examination, imaging, cytological tests and histopathological examination. **Methods:** 100 patients with breast lump who presented to surgery OPD were enrolled in the present nonrandomized prospective study. Institutional ethical committee approved the study and written consent was obtained from all study participants. **Results:** Out of 100 patients with breast lump most common age group involved is 31-40 years (44%). 53% patient had painful lump. A lump of size 3-4 cm in maximal diameter was found in 69%. Consistency of the lump was hard in 36% and firm in 61%. Nipple discharge was present in 22% and absent in 78%. Most of the patients (58%) had symptoms for 4-6 months. Upper outer quadrant was found to be most commonly involved (47%). Axillary node involvement was present in 21% and absent in 79%. Modified triple test showed 97.14% sensitivity, 100% specificity, 100% positive predictive value and 98.48% negative predictive value. **Conclusion:** Triple assessment of breast lump is reliable with a high degree of accuracy in detecting breast lumps. A patient with a benign triple test report can be safely followed up without the need for biopsy. The aim of the modified triple test is to avoid unnecessary open biopsy and to proceed to definitive therapy if a malignant breast lump is present.

**KEYWORDS :** Breast lump, Triple assessment, CAbreast, Ultrasonogram, FNAC,

## INTRODUCTION

Breast cancer is the 2nd most common malignancy in women worldwide; however, benign lesions of the breast are far more frequent than malignant ones.<sup>[1]</sup> With the use breast imaging and the extensive use of needle biopsies, the diagnosis of a benign breast disease can be accomplished without surgery. It is to distinguish between in situ and invasive breast cancer so most appropriate treatment modality can be established. The triple test for breast diseases involve; Clinical assessment, imaging modality—Mammography, Fine needle aspiration biopsy/cytology.<sup>[2-4]</sup> In modified triple test ultrasound is used instead of mammography. Mammography is preferred method for breast cancer screening. But when mammography reveals a non-palpable breast lesion further imaging studies are often required to more precisely identifying the characteristics and location of the mass.<sup>[5]</sup>

Fibroadenoma is the most common benign lesion; invasive ductal carcinoma is the most common malignant lesion. The incidence of the disease has shown a steep rise in women younger than 40 years of age.<sup>[6,7]</sup> Not more than 50% of the women with breast cancer are alive and free of disease 10 years after the diagnosis.<sup>[8]</sup> An efficient and accurate evaluation can maximize cancer detection and minimize unnecessary testing and procedures.<sup>[9]</sup> For effective management, multidisciplinary approach is essential. The study role of the triple assessment test in making a pre-procedural diagnosis of palpable breast lumps. The components were Clinical Examination, Ultrasound, FNAC/CNB.

## MATERIAL AND METHODOLOGY

Type of study : A Non-Randomized Prospective study  
Time frame of study : SEPTEMBER 2020 – SEPTEMBER 2022  
Study Area : RMMCH hospital  
Department of General Surgery  
Department of Pathology  
Department of Radiology

Sample size: 100

## Inclusion Criteria

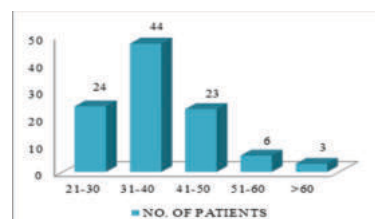
- All newly diagnosed patients with breast lump above 12 yrs of age are included in the study.

## Exclusion Criteria

- Patients with known breast carcinoma on treatment.
- Pregnant females.

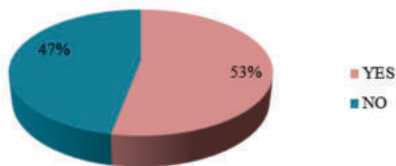
## RESULTS

After application of inclusion and exclusion criteria 100 female patients were included for the study.



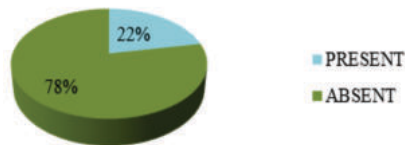
Age Distribution

No. of Patients

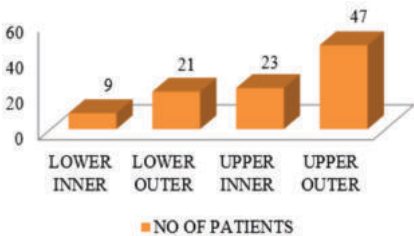


Pain Over Lump

No. of Patients

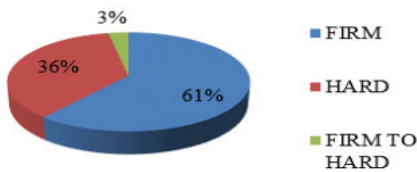


Nipple Discharge

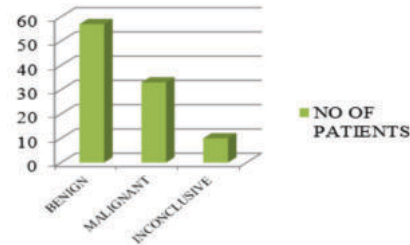


Quadrant Involved

No. of Patients

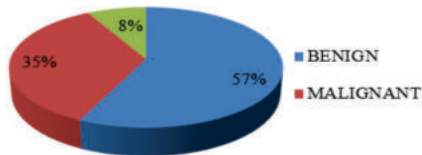


Consistency



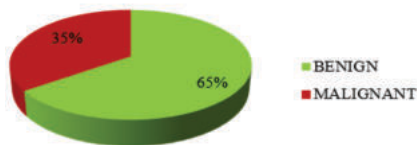
USG Findings

No. of Patients

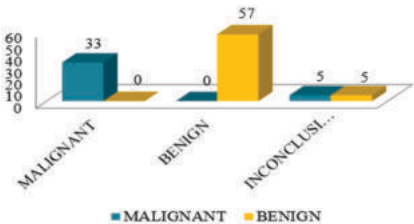


FNAC

No. of Patients

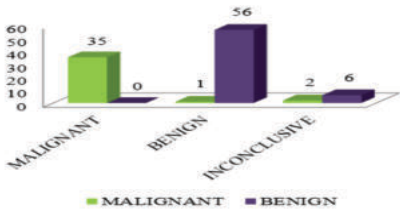


Histopathology



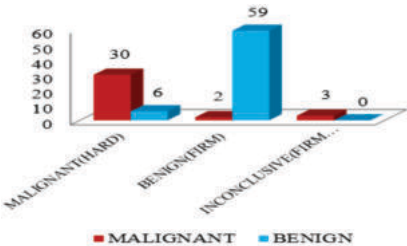
USG VS HPE

USG FINDING	
SENSITIVITY	86.84%
SPECIFICITY	100%
POSITIVE PREDICTIVE VALUE	100%
NEGATIVE PREDICTIVE VALUE	91.93%



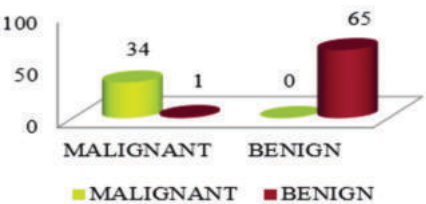
FNAC VS HPE

FNAC FINDING	
SENSITIVITY	92.10%
SPECIFICITY	100%
POSITIVE PREDICTIVE VALUE	100%
NEGATIVE PREDICTIVE VALUE	94.91%



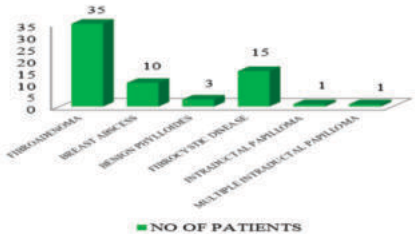
Clinical Examination Vs HPE

CLINICAL EXAMINATION FINDINGS	
SENSITIVITY	85.71%
SPECIFICITY	90.76%
POSITIVE PREDICTIVE VALUE	83.33%
NEGATIVE PREDICTIVE VALUE	92.18%



MODIFIED TRIPLE TEST VS HPE

MODIFIED TRIPLE TEST FINDING	
SENSITIVITY	97.14%
SPECIFICITY	100%
POSITIVE PREDICTIVE VALUE	100%
NEGATIVE PREDICTIVE VALUE	98.48%



INCIDENCE OF BENIGN DISEASES

## DISCUSSION

Education of the public about the fundamental facts of cancer and self-examination of the breast represents an important factor in the early detection of breast disease. In the overwhelming majority of cases, there is a painless breast mass and less frequently nipple discharge of erosion, skin retraction, or an axillary mass.

Physical examination, mammography, ultrasonography, core needle biopsy, open excision biopsy, fine needle aspiration cytology are all used to a greater or lesser extent in the diagnostic work up of a palpable breast mass. Various combinations have been studied and found to increase the sensitivity and specificity over that of any single test. Many diagnostic tools are used in cases of suspected breast cancer as the famous triple assessment which was described in 1975 and it reduces dramatically the use of open biopsy. It was used principally for evaluating palpable breast lumps. Triple test includes clinical assessment, mammography or ultrasound and fine needle aspiration (FNA).

In a retrospective study done by Gobler et al 207 patients with palpable breast masses were examined and concluded that if the result of combined evaluation of a triple test were concordant, a diagnostic accuracy was 100 % and with discordant results 75% of masses were found to be malignant. Gobler arrived at a conclusion that preliminary surgical biopsy and frozen section of the lesion may not be all that necessary when the triple test unequivocally identifies malignancy.<sup>[10]</sup>

In a systematic review of 15 studies, triple test was used for the diagnosis of palpable breast lumps, a combination of the three tests is consistently more sensitive than a single test, and the capability of identifying malignancy approaches 95 to 100 % when at least one component of the triple test is positive. When all the components of the triple test are positive, the probability that the diagnosis is right is approximately 99% whether it is positive or negative diagnosis.<sup>[11]</sup>

In a prospective study involving 200 women with palpable breast lump using the triple test done by Crone et al was done and the results were analyzed alone and in combinations, all the tumours were subjected to excision biopsy, out of the 200 lesions 38 lesions were found to be malignant. In this test even though the triple assessment was found to be accurate there was a statistical possibility of few malignant lesions, so it was concluded that all the palpable breast lumps should be excised.<sup>[12]</sup>

Donegan and Dennis emphasized the same point and believed that a solid breast mass always requires a firm diagnosis and should be excised for histological diagnosis.<sup>[13,14]</sup>

Jin Young Kwak, et al in a 2006 investigated the application of the Breast Imaging Reporting and Data System Final Assessment System in Sonography of Palpable Breast Lesions and Reconsideration of the Modified Triple Test in this study they followed up 160 palpable breast lump and subjected the lesions to palpation-guided FNAC, ultrasonography, and then histopathologic confirmation was done. It was shown in this study that Ultrasonography of breast was as accurate as palpation guided Fine needle aspiration for not missing the diagnosis of malignancy.<sup>[15]</sup>

In a study involving 55 young women with palpable breast lumps done by Vetto et al, the Modified triple test was used and it was shown to have a high diagnostic accuracy for the detection of malignancy. Hence it suggested that the modified triple test helps in avoiding unwanted surgery and also cost effective.<sup>[16]</sup>

A large multicenter study supported by Avon Foundation and National Institutes of Health was created through the American College of Radiology Imaging Network. In this study, a protocol is used to assess the efficacy of screening ultrasound breast was implemented in fourteen imaging centers to better define the role of US in screening the breast malignancy. The study reported higher cancer detection in high-risk women that underwent annual ultrasound screening in addition to mammography compared to those that underwent mammography alone.<sup>[17]</sup>

## CONCLUSION

Breast cancer is the leading cause of cancer related death in young females; hence early detection of breast cancer plays major role. The modified triple assessment was an accurate predictor of malignancy in our study, all of the patients who were suspicious to have malignancy by Modified triple test had malignancy on histopathological analysis and specificity found to be 100%, that proved as a best initial test for preoperative diagnosis of malignancy.

The results of the modified test in our study are as accurate as histological diagnosis. Of the three components of the modified triple test FNAC and Ultrasound of breast had 100% specificity for the diagnosis of malignant lumps.

The modified triple test can be done in an OPD basis and the patients are not exposed to radiation. Hence it acts as a suitable diagnostic modality for breast lumps in women of childbearing age. It has been showed that Ultrasound is as accurate as mammography in detection of palpable breast lumps and it can also helps in guiding the site for FNAC and biopsy.

FNAC was the most accurate modality out of the three components of the modified triple test. Three components of the test complemented each other when done with experienced clinicians and Radiologists in early detection of malignancy and help us to initiate early definitive treatment.

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