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## A clinicopathological and radiological correlation of breast lump in a tertiary care centre

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### Abstract

**Background:** Breast cancer is the most common invasive cancer in the woman and second leading cause of cancer death. Early detection of breast cancer by clinical assessment, and further radiological investigation and early treatment can reduce the morbidity and mortality in such patients.

**Aim:** To evaluate usefulness of BIRADS grading of mammography, fine needle aspiration cytology. To study the Sensitivity and specificity of mammography, ultrasonography and fine needle aspiration cytology.

**Materials and Methods:** It is a prospective study of patients who presented with breast lump in the department of general surgery in the duration of August 2018 – December 2019. The primary outcome of the study was evaluated on the basis of clinical examination, investigations like mammogram and or ultrasound and fine needle aspiration cytology in that order.

**Results:** The present study deals with the Clinicopathological and Radiological correlation of breast lesions. A total of 50 cases were studied. The youngest patient in this study was 19 yrs and the oldest was 80 years. The Triple Test components (Physical Examination, Mammogram & / or Ultrasound and Fine needle aspiration cytology) were categorized as benign, suspicious and malignant. Triple Test was considered concordant when all the three elements indicated benign or all the three indicated malignant results. Among the 50 cases which had Clinicopathological and radiological correlation, 38 had all benign results and 8 had all malignant results. The age group of 31-40 yrs showed maximum number of benign cases. All the palpable lesions of the breast occurring in the age group of 10-30 years were benign in this study. Majority of the lesions occurring in the age group of 61-80yrs were malignant.

**Conclusion:** Triple test reliably guides evaluation of palpable breast masses. Patients with palpable breast lesions should be evaluated by physical examination, mammogram and/or USG and fine needle aspiration. Cystic masses are best evaluated by USG. When all the three components of TT are concordant i.e., either concordant benign or concordant malignant, it yields 100% diagnostic accuracy. Amongst the three components of TT, FNA has the highest sensitivity of 100%. In the non-concordant cases it is found that FNA was more sensitive. TTS has a high diagnostic accuracy when the lesions score a TTS of S 6 and T 4. However, a TTS of 5 has low predictive value and such cases require open biopsy for confirmation of the diagnosis. Sites of fine needle aspiration increases the diagnostic accuracy by reducing the false negative results.

**Keywords:** Triple test, breast lump, mammogram

### Introduction

Breast cancer was recognized by the Ancient Egyptians as long ago as 1600 BC. However, over the past 50 years it has become a major health problem affecting as many as one in eight women during their lifetime. As we know, cancer is the leading cause of death in women aged 40yrs to 79yrs with more than 1,000,000 cases occurring worldwide annually. Breast cancer alone is the most common cause of death among women aged 40 yrs to 49 yrs, and the most common cause of cancer death in women for four decades, between Age 20 to 59 yrs.

The frequency of breast diseases, their recognition and the attempts at primeval cures by various cultures and societies historically antedate the therapy of diseases of other solid organs. Diseases of breast, with their uncertain causes and confusion of treatment, have intrigued physicians and medical historians throughout the ages.

Despite centuries of theoretical meanderings and scientific enquiry, cancer of the breast remains one of the most dreaded of human ills. Although primarily thought of as a disease of women, it may occasionally afflict men with results just as lethal. The breast as a paired organ further increases its exposure to disease. As appendage of the skin, it usually reveals its disorders to touch or sight.

**Materials and Methods**

In this study, 50 patients were selected who attended our hospital in the period of August 2018 – November 2019.

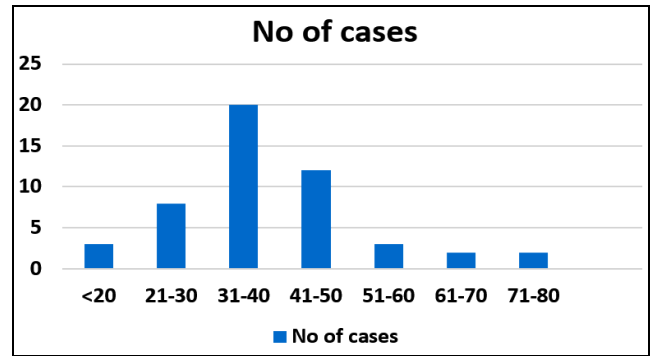
All the patients who gave consent for this study are subjected. All the patients, both male and female presenting with palpable breast lesions to the general surgery, Out Patient department, were examined and further investigated in Department of Cytopathology and Department of Radiology. Cases in which all the three components of triple test are studied. A patient with palpable mass of the breast was examined clinically. The procedure of mammography and FNAC were explained in detail and informed consent obtained. After taking a detailed history as explained in the proforma, physical examination was done. Physical examination: It was done in a standard manner, with patient sitting. The breasts were inspected for asymmetry, skin retraction, ulceration or edema and then palpated. A note was made of the quadrant in which the mass was present and the measurements of the same were noted. Both the breasts were examined to rule out presence of any additional masses. The area of lymphatic drainage was examined for lymphadenopathy. Mammogram: Two views medio – lateral oblique and standard cranio – caudal were obtained using a dedicated mammographic unit.

FNAC: Most of the aspirations were done in the cytology department on out patient basis. Complete clinical details and examination findings were noted. Material was obtained with a fine 22 and 24 G needle fitted to 10 ml plastic syringe with cameo syringe pistol, which facilitates single handed aspiration. No local anesthesia was required and alcohol scrub was used as an aseptic precaution. The same protocol was followed for all the patients and their response was analysed by Statistical analysis was done using SPSS 23.0.

**Results**

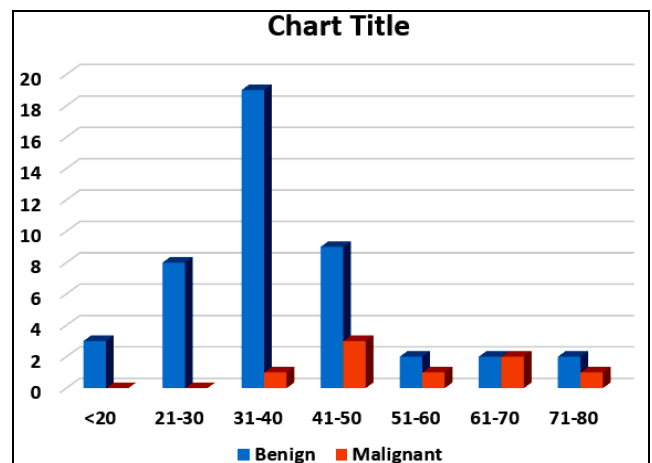
The present study deals with the Clinicopathological and Radiological correlation of breast lesions. A total of 50 cases were studied. The youngest patient in this study was 19 yrs and the oldest was 80 years. The TT components (Physical Examination, Mammogram & / or Ultrasound and Fine needle aspiration cytology) were categorized as benign, suspicious and malignant. TT was considered concordant when all the three elements indicated benign or all the three indicated malignant results. Among the 50 cases which had

Clinicopathological and radiological correlation, 38 had all benign results and 8 had all malignant results.



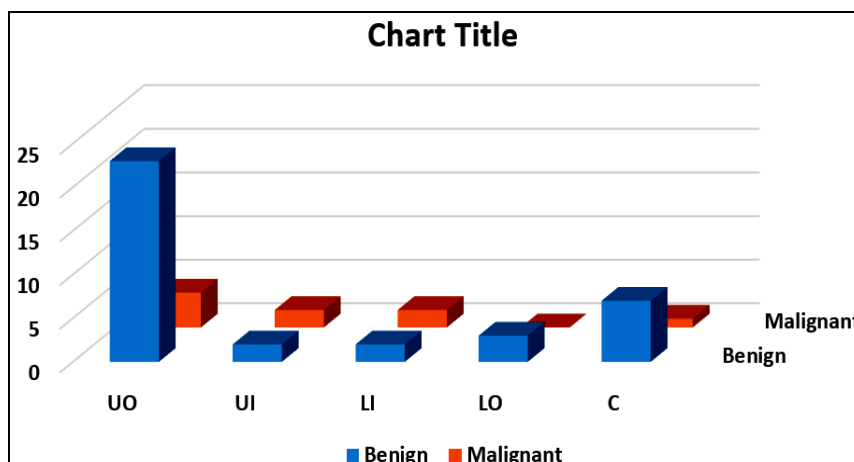
**Graph 1:** Age wise distribution of palpable breast lesions

Maximum number of cases are seen in the age group of 31-40yrs (31.57%) followed by 21-30yrs (21.82%) age group.

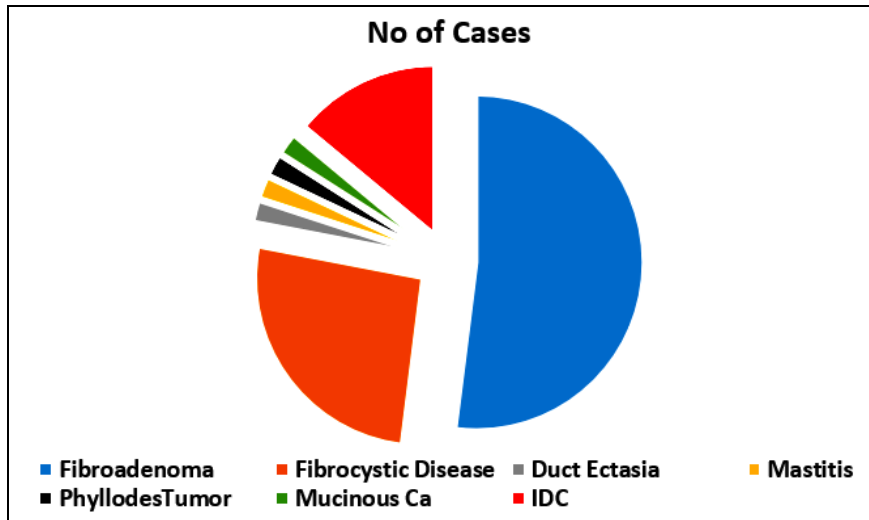


**Graph 2:** Age wise distribution of benign and malignant lesion in case of breast lump

The age group of 31-40 years showed maximum number of benign cases. All the palpable lesions of the breast occurring in the age group of 10-30 years were benign in this study. Majority of the lesions occurring in the age group of 61-80 years were malignant. The age group of 31- 40 years had predominantly benign palpable lesions.



**Graph 3:** Quadrant wise distribution of benign and malignant palpable breast lesions



**Graph 4:** Various histological types of breast lesions

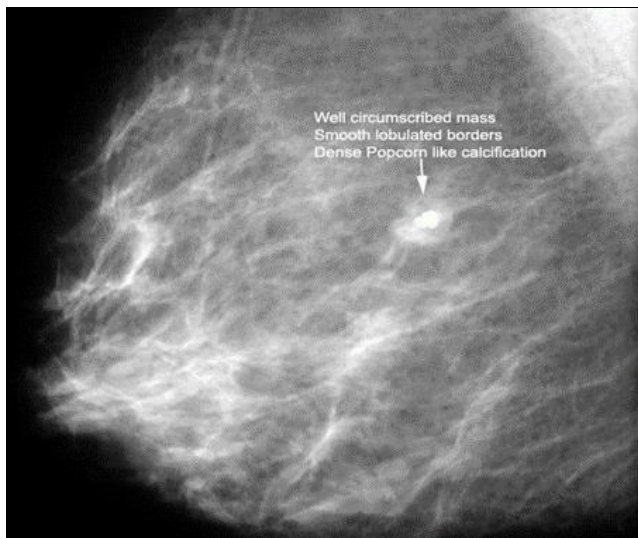
Among the 50 patients 26 cases were diagnosed to have fibroadenoma followed by fibrocystic disease in 13 patients. 7 patients were diagnosed to have invasive ductal carcinoma.

**Table 1:** Triple test score

No of Cases	PE	MMG/USG	FNAC	TTS
38	1	1	1	3
8	3	3	3	3
1	1	2	1	4
1	1	2	1	4
1	1	2	1	4
1	3	2	3	8

**Table 2:** Sensitivity and specificity of mammography

Diagnosis	No of cases
TP	08
TN	13
FN	00
FP	01
Sensitivity	100%
Specificity	92.85%

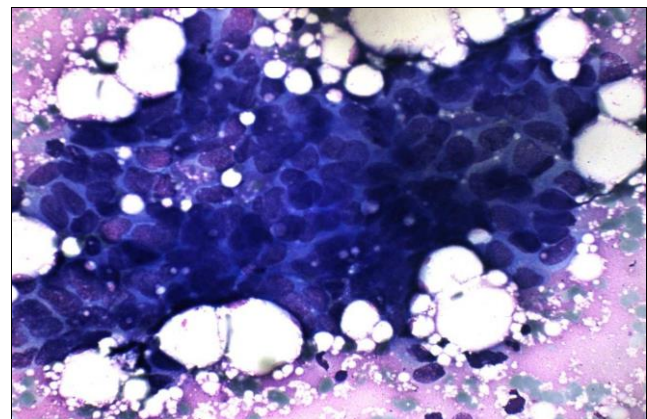


**Fig 1:** Mammography finding of fibroadenoma breast

The sensitivity and specificity of the mammography in breast lesions 100% and 92.8% respectively.

**Table 3:** Sensitivity and specificity of FNAC

Diagnosis	No of cases
TP	09
TN	41
FN	00
FP	00
Sensitivity	100%
Specificity	100%



**Fig 2:** FNAC of Invasive ductal carcinoma

The sensitivity and specificity of FNAC in the diagnosis of breast lesion is almost 100% accurate in the diagnosis of the disease. But the disadvantage of the FNAC is that it cannot differentiate the insitu carcinoma.

**Table 4:** Comparison of sensitivity and specificity of FNAC, Mammography and USG

	FNAC	Mammography	USG
Sensitivity	100	100	100
Specificity	100	92.85	93.33

In the present study the FNAC had the maximum (100%) sensitivity and specificity and sensitivity and specificity of mammography and USG were comparable (92.85% & 93.33% respectively)

BIRADS Grading was corroborative with FNAC. Two lesions were reported as suspicious (BIRADS IV) by mammography which turned out to be malignant on FNAC.

## Discussion

The first step in the management of every patient presenting with a palpable breast mass is a detailed assessment consisting of clinical evaluation, mammogram and / or USG and FNAC. These allow precise initial diagnosis of palpable breast lesions and reduce the risk of misdiagnosis. In the present study 50 cases were assessed by all the three components. When compared with John veto *et al.* study non-concordant cases were 4 in our study. The present study has the maximum number of cases in the age group of 31-40 years comparable with Premila Desouza Rocha *et al.* study. The present study has maximum percentage of benign cases (100%) in the age group of 14-40 years and maximum percentage of malignant cases (66.66%) in the age group of 51-75 yrs. This is comparable with Premila Desouza Rocha *et al.* study where in the percentage of benign cases were also in the age group of 14-30 years and percentage of malignant cases were also in the age group of 51-75 yrs. Maximum number of palpable breast lesions in present study were found in upper outer quadrant followed by central quadrant which was comparable with Premila Desouza Rocha *et al.* study. TTS of the present study is comparable with TTS of Katherine T Morris *et al.* study. Among the non-concordant cases, where TTS was more than or equal to six they turned out to be malignant. Cases with TTS less than or equal to four were benign. Among the non-concordant cases of present study, FNAC had the highest sensitivity followed by mammogram/USG. Compared to Katherine T Morris *et al.* study where FNAC had 8% false negative & 4% false positive results, the present study had no false positive & no false negative results. The total lack of false negative results could be because of large evident tumours. Sensitivity rates for mammogram/USG in various studies is highly variable. In the present study the high sensitivity rate of 100% could be because the cases had clinically & mammographically well-defined malignant findings. Thus, in the present study FNA proved to be highly sensitive compared to the other components of TT. Further in examining the TT elements individually in the non-concordant cases, it is evident that FNA is typically more accurate than Physical examination & Mammogram/USG.

## Conclusion

Triple test reliably guides evaluation of palpable breast masses. Patients with palpable breast lesions should be evaluated by physical examination, mammogram and/or USG and fine needle aspiration. Cystic masses are best evaluated by ultrasound scan. When all the three components of Triple Test are concordant i.e., either concordant benign or concordant malignant, it yields 100% diagnostic accuracy. Amongst the three components of TT, FNA has the highest sensitivity of 100%. In the non-concordant cases it is found that Fine needle aspiration cytology was more sensitive. However, a TTS of 5 has low predictive value and such cases require open biopsy for confirmation of the diagnosis. Sites of fine needle aspiration increases the diagnostic accuracy by reducing the false negative results. In the present study, there were no cases where a malignancy missed by FNAC was picked up by the other components of triple test. Thus, FNAC was found to be superior to mammogram and physical examination in picking up malignancy in palpable breast lesions.

## References

1. William Frable J. Needle Aspiration biopsy: Past, Present and Future. *Human Pathology* 1989;20(6):504-517
2. Hayes Martin E, Edward Ellis B. Aspiration biopsy. *Surgery, Gynaecology and Obstetrics* 1934;59:578-589.
3. Leonard Dudgeon S, Vincent Patrick C. A new method for the rapid microscopic diagnosis of tumors: with an account of 200 cases so examined. *The British Journal of Surgery* 1927;15:250-261.
4. David Dabbs J. The bridge uniting cytopathology and surgical pathology fine needle aspiration biopsy as the keystone. *American Journal of Clinical Pathology* 1997;108(4):S6-S11.
5. Svante Orell R, Gregory Sterrett F, Max Wattes NI, Darrel Whitaker. *Manual and atlas of fine needle aspiration cytology*. Third edition, London, Curchill Livingstone 1999.
6. Reshma Ariga, Kenneth Bloom, Vijaya Reddy B, Larry Kluskens, Darius Francescatti, Kambiz Dowlat *et al.* Fine needle aspiration of clinically suspicious palpable breast masses with histopathologic correlation. *The American Journal of Surgery* 2002;184:410-413.
7. Hayes Martin E, Edward Ellis B. Biopsy by needle puncture and aspiration. *Annals of Surgery* 1930;92:169-181.
8. John Butler A, Herman Vargas, Nancy Worthen, Samuel Wilson. Accuracy of combined clinical-mammographic-cytologic diagnosis of dominant breast masses. A prospective study. *Archives Surgery* 1990;125:893-896.
9. Cahill CJ, Boulter PS, Gibbs NM, Price JL. Features of Mammographically negative breast tumors. *British Journal of Surgery* 1981;68:882-884.
10. Kirby Bland I, Edward Copeland M. *The breast comprehensive management of benign and malignant diseases*. IV Edition, Chapter I. History of Therapy of Breast Diseases 2009; 1-18.
11. Robert Egan L. Experience with mammography in a tumor institution. *Radiology* 1960;75:894-900.
12. Katherine Morris T, Rodney Pommier F, Arden Morris, Waldermar Schmidt A, Gregory Beagle, Priscilla W. Alexander. Usefulness of the triple test score for palpable breast masses. *Archive of Surgery* 2001;136:1008-1013.
13. Arden Morris, Rodney Pommier F, Waldermar Schmidt A, Richard Shih L, Priscilla Alexander W, John Vetto T. Accurate evaluation of palpable breast masses by triple test score. *Archives Surgery* 1998;133:930-934.
14. Mark Rubin, Kent Horiuchi, Nancy Joy, William Haun, Robert Read, Erick Ratzer. Use of fine needle aspiration for solid breast lesions is accurate and cost effective. *The American Journal of Surgery* 1997;174:694-698.
15. Robert Somers G, Glenn Sandler L, Mark Kaplan J, Denise Najjar, Anita Anderson V, Martin Cohen H. Palpable abnormalities of the breast not requiring excisional biopsy. *Surgery, Gynecology & Obstetrics* 1992;175:325-328.
16. John Vetto T, Rodney Pommier F, Waldermar Schmidt A, Heidi Eppich, Priscilla Alexander W. Diagnosis of palpable breast lesions in younger women by the modified triple test is accurate and cost-effective *Archives of Surgery* 1996;131:967-974.

17. Brand IR, Sapherson DA, Brown TS. Breast imaging in women under 35 with symptomatic breast disease. *The British Journal of Radiology* 1991;66(785):394-397.
18. Yelland A, Graham MD, Trott PA, Ford HT, Coombes RC, Gazet JC. Diagnosing breast carcinoma in young women. *British Medical Journal* 1991;302:618-620.
19. Michael Palmer L, Theodore Tsangaris N. Breast biopsy in women 30 years old or less. *The American Journal of Surgery* 1993;165:708-712.
20. Bender HG, Schnurch HG, Beck L. Breast cancer detection: Age related significance of findings on physical examination and mammography. *Gynecologic Oncology* 1988;31:166-172.
21. Christian Hermansen, Hans Skovgaard Poulsen, Jorn Jensen, Bent Langfeldt, Verner Steenskov, Poul Frederiksen. Diagnostic reliability of combined physical examination, mammography and fine needle puncture (Triple Test) in breast tumors. *Cancer* 1987;60:1866-1871.