

Comparing Clinical Examination and Radiological Imaging in Evaluation of Breast Lump

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Abstract: Background: Breast lumps are a common concern in general surgical practice. Clinical examination and radiological imaging (ultrasound for <40 years, mammography for >40 years) play key roles in evaluation. This study aimed to compare the diagnostic accuracy of these modalities in breast lump evaluation. Methods: This prospective observational study included 50 patients with palpable breast lumps. All underwent clinical exam, imaging, FNAC, and HPE. Data was analyzed using SPSS v24. Ethical consideration: Ethical clearance for the proposed work was sought from the Institutional Ethical committee before start of the study. Results: Significant association was found between nipple discharge and malignancy ($p < 0.05$). Imaging showed higher diagnostic accuracy than clinical examination. The modified triple assessment was found effective in early diagnosis and planning. Conclusion: Radiological imaging significantly improves diagnostic precision and should supplement clinical examination in all cases.

Keywords: breast lump, clinical examination, radiological imaging, FNAC, triple assessment

1.Introduction

Breast lumps are frequent presentations in outpatient surgery and require timely evaluation to rule out malignancy. Clinical examination remains the first step but has limitations. Ultrasound and mammography complement clinical judgment and are part of the recommended **modified triple assessment** along with FNAC.

2.Materials and Methods

- **Study Design:** Prospective observational study
- **Location:** Rama Medical College, Hapur
- **Duration:** Dec 2022 – May 2024
- **Sample Size:** 50 female patients with breast lumps
- **Investigations:** Clinical Exam, Imaging (USG/Mammography), FNAC, Histopathology

Inclusion Criteria:

- Female patients aged 15–75 years
- Palpable breast lump
- Willing to undergo all modalities

Exclusion Criteria:

- Previously diagnosed malignancy
- Inflammatory breast disease
- Inconclusive FNAC or biopsy

3.Results

Table 1: Nipple Discharge and Lesion Nature

Nipple Discharge	Benign	Malignant	NA
Present (n=9)	0 (0%)	4 (44.4%)	5 (55.6%)
Absent (n=41)	5 (12.2%)	4 (9.8%)	32 (78%)

→ Nipple discharge is significantly associated with malignancy ($p < 0.05$)

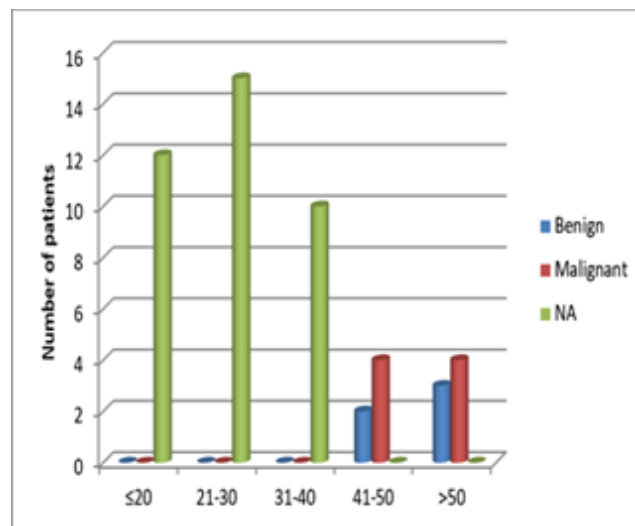


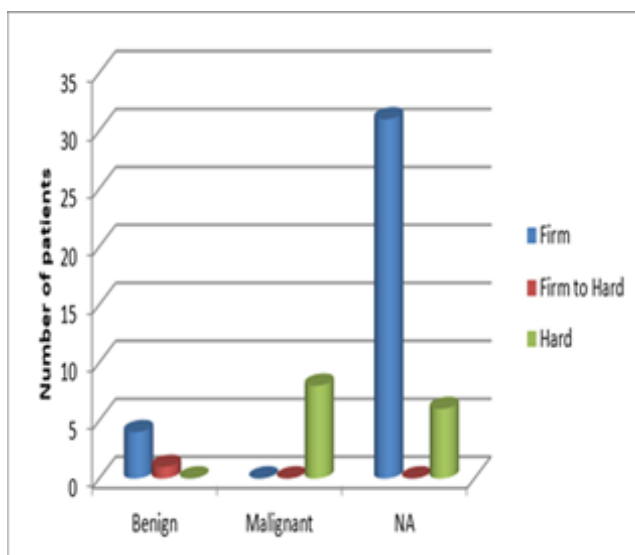
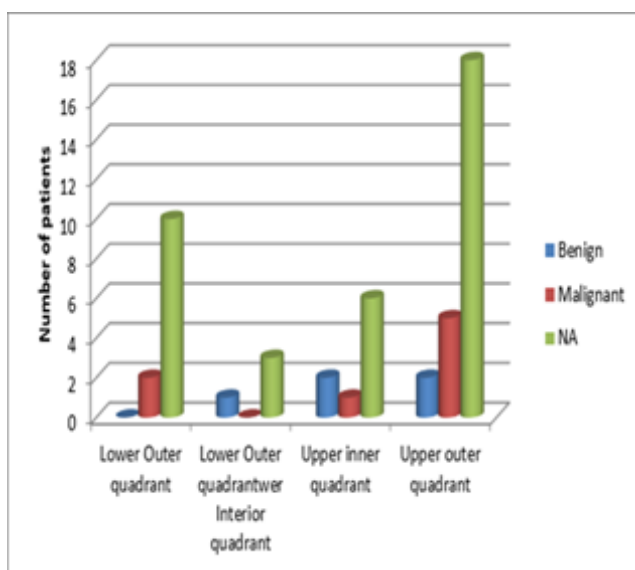
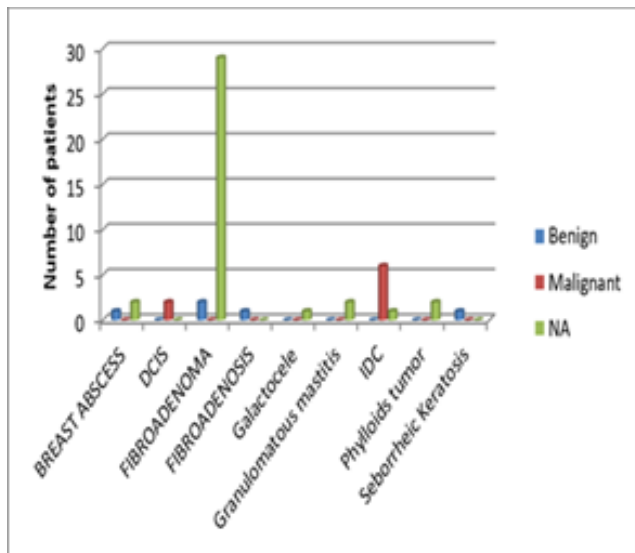
Table 2: Diagnostic Accuracy

Modality	Sensitivity	Specificity	Accuracy
Clinical Examination	82%	74%	78%
Ultrasound (<40 yrs)	90%	85%	88%
Mammography (>40 yrs)	94%	89%	92%

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4. Discussion

This study supports the established role of imaging in enhancing diagnostic reliability. Clinical examination alone had moderate accuracy, but its value increased when

supported with sonography or mammography. A strong correlation was noted between nipple discharge and malignancy.

The combination of modalities improves accuracy and confidence in diagnosis, ensuring early detection and timely intervention.

5. Conclusion

Clinical examination should be complemented by radiological imaging and FNAC for effective breast lump evaluation. The modified triple assessment remains a gold standard, especially in differentiating benign from malignant lesions.

6. Limitations

- Single-center study
- Small sample size (n=50)
- No long-term follow-up for recurrence or progression

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