THE VALUE OF MODIFIED TRIPLE ASSESSMENT IN THE DIAGNOSIS OF PALPABLE BREAST LUMPS

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01. Introduction

Breast Lumps in females are a common clinical problem which requires rapid and early evaluation with an important aim of excluding any breast malignant lesion. We have modified this approach by substituting mammogram with ultrasound for the assessment of breast lesions. Distinction of benign lesion of breast from malignant lesion is of paramount importance for patient care and proper management. An early and accurate diagnosis is important because the treatment can be initiated much earlier for the better prognosis. Nowadays Triple assessment has been used as a main diagnostic method in the evaluation of breast lesions. Therefore it is important to evaluate the validity and reliability of triple assessment in the evaluation of breast lesion.

02. Objective: -

General objectives

To establish the validity and reliability of the triple assessment in the evaluation of patients with palpable breast lump.

Specific objectives

1. To assess the sensitivity and specificity of physical examination component of M.T.T of breast lesion.
2. To assess the sensitivity and specificity of ultrasonographic component of M.T.T of breast lesion.

3. To assess the sensitivity and specificity of FNAC in the assessment of breast lesion.

03. Methods and design

It was an institutional based descriptive cross sectional study. Data was collected retrospectively. The research was carried out in professorial surgical unit of Teaching Hospital, Jaffna. Study population was 319 patients who underwent modified triple test in professorial unit of Teaching Hospital, Jaffna from 1st of January, 2012- 1st of July 2016. All 319 patients had undergone surgery (lumpectomy, wide excision or mastectomy) and final histopathology report was obtained in this study. The patients without final histopathology report were excluded from this study. The results of the individual components were compared with final histological examination. Data collected from records of professorial surgical clinics notes and professorial unit bed head tickets.

Data was entered and analyzed using the statistical package for social sciences (SPSS) computer software programme. The associations were made by using appropriate statistical test (p value). P value <0.05 was considered as significant. Ethical clearance was obtained from ethical review committee, University of Jaffna.

04. Results

The results of each component of M.T.T is charted in table I, II and III

Table I: Age group with clinical diagnosis

Age Group	Clinical diagnosis		Total number	Percentage of malignant lesion
	Malignant	Benign		
<20 yrs	—	30	30	0%
20-29 yrs	01	61	62	1.6%
30-39 yrs	24	48	72	33.3%
40-49 yrs	55	38	93	59.1%
50-59 yrs	26	16	42	61.9%
>60 yrs	14	06	20	70%
Total	120	199	319	37.6%

Table II: Age group with ultrasonographic findings

Age Group	Ultrasonographic finding		Total number	Percentage of malignant lesion
	Benign	Malignant		
<20 yrs	30	—	30	0%
20- 29 yrs	80	03	83	3.6%
30- 39 yrs	42	30	72	41.7%
40-49 yrs	36	48	84	57.1%
50-59 yrs	12	24	36	66.7%
>60 yrs	03	11	14	78.6%
Total	203	116	319	36.4%

Table III: Overall findings by the components of Triple Test

Type of lesion	Clinical diagnosis	USS	FNAC/Core biopsy	Histopathology
Benign	199	203	202	197
False negative	10	09	06	
Malignant	120	116	117	122
False positive	08	03	01	

Table IV: Benign lesions: ultrasonographic finding

Ultrasonic diagnosis	Number of Diagnosis	Percentage among all benign lesion	Percentage among overall breast lesion
Fibro adenoma/Giant fibroadenoma	103	50.73%	32.28%
Fibrocystic disease	62	30.54%	19.43%
Inflammatory lesion	23	11.33%	7.21%
Cystic lesion	15	7.38%	4.70%

Table V

	FNAC/Core biopsy	Histopathological confirmation
Fibro adenoma	96	93
Fibrocystic	69	66
Inflammatory	21	26
Cystic	16	12
Carcinoma	117	122

Table VI:

Category	Sensitivity	Specificity	PPV	NPV
Clinical diagnosis	93.33%	95.93%	93.33%	94.97%
Ultrasono graphic finding	92.62%	98.48%	97.41%	95.56%
FNAC/ Corebiopsy	95.08%	99.49%	99.15%	97.03%

The result of individual components as overall M.T.T were tabled above and compared with the final histopathological examination. Result of physical examination showed sensitivity 93.33% and specificity 95.93% for diagnosing malignant breast lesion. The ultra-sonography revealed 92.62% of sensitivity, 98.48% of specificity. FNAC revealed that 95.08% sensitivity while specificity was 99.49%.

05. Discussion

Breast cancer is the commonest malignancy in females and a leading cause of cancer related deaths worldwide. Mammography is an essential component in the assessment of breast cancer. It serves to characterize and determine the extent of the mass and to evaluate the breast for occult lesion (1,3,11). The sensitivity of diagnostic mammography has been reported in most studies to be around 90% and specificity about 88% (1,3,6,7,10). The known false negative rate of mammography is between 8% and 10% (1,6). In modified triple test, mammography has been substituted by ultrasonography.

Breast ultrasound has been found to be an adjuncts to mammography in breast examination (1, 5, 9). Ultrasonography shows 93.1% sensitivity, 95% specificity, 93.1% positive predictive value (5, 11).

For clinical examination, Yang et al (1996) reported a sensitivity, specificity and positive predictive value as 88 %, 92%, and 67% respectively. Current study revealed a higher sensitivity and specificity for clinical examination. However the results depends on the experience of the surgeon who is doing the examination. On a experienced hand, the clinical examination alone is a valuable test for diagnosing breast cancer.

Like clinical examination, the results of ultrasonography is also depends on the competency of radiologists. On a study done by Manisha et.al., (Dr. Manisha (June, 2013) (6) the concordance for histopathology was 96.7% and sensitivity was 100%, specificity was 96.4%, positive predictive value was 66.7%, and negative predictive value was 100%. Pande et al (...) have done a study which revealed the

sensitivity, specificity, positive predictive value and negative predictive value as 95%, 94.10%, 95.50% and 93.75% respectively. The current study revealed a better values for ultrasonography like above studies. Sensitivity- 92.62%, Specificity-98.48%, positive predictive value- 97.41% and negative predictive value- 95.56%.

On the same study, Dr. Manisha Nigam (June, 2013) (6); found that concordance for FNAC was 97.3%, sensitivity was 100%, specificity 97.1%, positive predictive value was 86.7% and negative predictive value was 100%. Mohammed et al. found that FNAC had a positive predictive value of 100%, sensitivity of 96.6% and specificity of 100%. The current study concluded that FNAC is the best among all other components of MDT.

The final diagnosis was made based on the histopathological findings which identified 122 breast lesions as malignant lesion. Among them, only one had the negative results for all components of MDT (%). It reflects that MDT can be used as a diagnostic tool for breast cancer in clinical setting.

06. Conclusion

The modified triple test is valid and reliable with high degree of accuracy for diagnosis of breast lump as in our studies and other studies. The aim of the modified triple test is to avoid unnecessary open biopsy and to proceed to definitive therapy. High frequency high quality sonography system has significant technical improvement in modified triple test. The modified triple test can reliably guide the evaluation and management of breast lump.

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