TRIPLE ASSESSMENT OF BREAST LUMPS, AN EFFECTIVE METHOD FOR DIAGNOSIS IN LIMITED RESOURCES SETTING

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ABSTRACT

Context: Breast lumps are one of the common complaints for which a woman consults a surgeon. It is estimated that at least 50% of female population in USA consult surgeon some time in their life span for breast related symptoms, 25% among them will undergo breast biopsy and around 12% of them will develop some variant of breast cancer in their life time. Similar to worldwide trend, there is increase in the incidence of breast cancer in India too. This includes semi urban and rural areas where resources and access to facility for early diagnosis are limited. In such situations triple test for diagnosis plays an important role. It is effective in diagnosis, reliable, avoids multiple visits and helps in decision making regarding management. This study was conducted with an aim of assessing the accuracy of triple test in semi urban set up.

Methods: A prospective cross sectional study on 50 women above 15 years of age with palpable breast lumps was conducted. Triple test of lumps was done followed by definitive surgery based on inference. Inference of triple test was compared with final histopathology report. Results were analysed using Chi square test and p value of <0.05 was considered significant. Sensitivity and specificity of the tests individually and in combination were also calculated.

Results: Among 50 patients, 22 were malignancies and 28 benign. Triple test showed sensitivity and specificity of 94.29%. Positive predictive value for benign lesions was 95.47% and for malignancies 94.32%. Negative predictive value for benign lesions was 94.32%and for malignancies 94.40%. The chi square value was 3.89 and p value was <0.05.

Conclusions: Triple test is a dependable tool in diagnosing and planning the management of the breast lumps in limited resource settings. It is accurate and reduces waiting time for decision making.

Key Words: Triple assessment, Breast lumps, FNAC, Clinical examination, Mammography, Sonomammography

INTRODUCTION

Breast lumps are one of the common complaints for which a woman consults a surgeon. It is estimated that at least 50% of female population of USA consult surgeon some time in their life span for breast related symptoms, 25% will undergo breast biopsy and around 12% of them will develop some variant of breast cancer in their life time [1]. Throughout the world, breast cancer is one of the leading cause of mortality and 2nd leading cancer in females. It is second leading cancer in India next only to carcinoma cervix. The incidence has doubled in last 25 years and is increasing. [2]

Developed countries have well planned screening programs and interventional methods for early detection of breast cancer and optimum management for better survival. However such measures are not in place in developing country like ours due to various factors and limitations. It is equally heartening to see increased awareness among general population regarding breast diseases. Even though majority of lumps turn out to be benign, they are major source of anxiety for the patient. In such scenario, triple assessment forms the best method to diagnose and manage breast lumps. This is simple, feasible and accurate, avoids unnecessary surgeries and guides towards appropriate management. This article aims at presenting the efficacy of triple assessment in limited resource settings.

MATERIAL AND METHODS:

50 Women above the age of 15 years with complaints of lump in the breast were included in the study. Patients with

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known cancer breast, acute mastitis and breast abscesses were excluded. Institutional ethics committee clearance was obtained prior to the conduction of study. Detailed information was given to the study group and written consent obtained. Each individual underwent detailed clinical examination. Mammography in women above 35 years of age and sonomammography in less than 35 years was done. Then fine needle aspiration cytology was performed. Later patient underwent appropriate surgery as per the inference of triple test and the specimen was subjected to histopathology examination. Final histopathology report was compared with the inference of triple test. The data was analyzed by Chi square test. P value of <.0.05 was considered statistically significant.

RESULTS

The age group ranged from 15-75 years of age. Maximum number of women (20) were in the age group of 36-45yrs. [Refer table no I]

Table I

Age(years)	No of Patients
15-25	8
26-35	10
36-45	18
46-55	8
56-65	5
66-75	1
Total	50

Duration of the lumps ranged from few days to 2 years. However majority (38) sought medical opinion within 6 months. [Refer table no II]

Table II

Duration of symptoms in months	Number	Percentage
0-6	38	76%
7-12	06	12%
13-18	0	0
19-24	02	4%
>24 months	04	8%
Total	50	100%

Distribution of lumps was almost equal on both sides. Upper outer quadrant was the commonest site involved (25).

After triple assessment all the 50 patients underwent appropriate surgeries. The surgeries performed were lumpectomy/excision in 28; modified radical mastectomy in 21 and simple mastectomy in 1. The operated specimens were subjected to final histopathology. [Refer table no III]

Table III

Histopathological diagnosis	Number	Percentage
Fibro adenoma	22	44%
Fibro adenosis and fibrocystic disease	03	06%
Duct ectasia	03	06%
Infiltrating duct carcinoma	21	42%
Atypical medullary carcinoma	01	02%

Carcinoma of breast was diagnosed in 22 of them. Triple assessment could diagnose 21 of them. Clinical examination detected 20, mammography 21 and FNAC 21. This shows that sensitivity of diagnosing malignancy with clinical examination was 91.66%, by mammography 95.66% and by FNAC 91.66% Sensitivity and specificity of triple assessment was 94.29%.[Refer table no IV]

Table IV

Method	Number	Sensitivity
Clinical examination	20	91.66%
Mammography	21	95.66%
FNAC	20	91.66%

A total of 28 benign conditions were diagnosed by histopathology. The sensitivity of clinical examination in diagnosing benign lesions was 93.66%, by mammogram 96.55% and that of FNAC was 93.66%.[Refer table no V]

Table V

Test	Number	Sensitivity
Clinical examination	30	93.66%
Mammography	29	95.55%
FNAC	30	93.66%

The overall sensitivity and specificity of triple test in diagnosing malignancies and benign conditions was 94.29%. [Refer table no VI]

Table VI

	Clinical examination	Mammogram	FNAC	Triple test
Sensitivity				
Benign	93.33%	96.55%	96.55%	94.07%
Malignant	91.66%	95.66%	91.66%	92.99=93%
Specificity				
Benign	91.66%	95.65%	95.65%	94.32
Malignant	93.33%	96.55%	96.55%	95.47

The positive predictive value and negative predictive value in both benign and malignant lesions is depicted in table no VII.

Table VII

	Clinical examination	Mammography	FNAC
Positive predictive value			
Benign	93.33%	96.55%	96.55%
Malignant	91.66%	95.66%	95.65%
Negative predictive value			
Benign	91.66%	95.65%	95.65%
Malignant	93.33%	96.55%	93.33%

Positive predictive value of triple test for benign lesions was 95.47% and malignant lesions 94.32%.Negative predictive value of triple test for benign lesions was 94.32%and malignant lesions was 94.40%.The Chi square value was 3.89 and p value was <0.05 which is significant.

DISCUSSION

The diagnosis of breast cancer is comparatively simple in advanced stages due to its classical presentation. However diagnosis in a discreet lump is a challenge. Appropriate diagnosis with minimal intervention is always right method for optimum management. Correct pre operative diagnosis will guide the surgeon, patient and team as a whole to plan further. Breast lumps are always cause of anxiety. Early diagnosis and intervention alone can improve morbidity, reduce mortality and prolong survival. Triple assessment plays a major role in fulfilling this objective of early and accurate diagnosis. Even though proponents of core biopsy disagree, [3] triple assessment has improved management in palpable breast lumps where resources are limited, follow up is difficult and definitive therapy has to be planned simultaneously.

Comparison of our study with other studies conducted in similar settings show that this method is reliable and dependable.

Similar study was conducted by Masooda Jan and others in Kashmir [4]. They conducted triple assessment on 200 patients with breast lumps without any age restriction. The sensitivity was 100%, specificity 99.3%, positive predictive value 99.3% and negative predictive value was 100%, P value was 0.000. (Significant). They had predominantly benign lesions and around 5.5% were malignant. Clinical examination had sensitivity of 99.3%, specificity of 97.8% and p value 0.000. Positive predictive value was 80% and negative predictive value of 99.3%. Mammograghy done in 137 married females showed sensitivity of100%, specificity of 97.9%, positive predictive value of 98.1% and negative predictive value of 86.7%USG was done in all 200 patients had almost similar results. FNAC had specificity of 97.1%, 100% sensitivity and 97.3% concordance, positive predictive value of 100% and negative predictive value of 73.3%. They concluded that triple assessment is an effective diagnostic tool to evaluate breast lumps for accurate diagnosis and plan for definitive therapy. Another similar study conducted in Nepal on 50 patients showed overall accuracy of 98%, sensitivity of 100%, 95.2% specificity and positive predictive value of 96.7%. Carcinoma was diagnosed in 58% of patients in the age group of 35-70.[5] Similar observations were noted in various studies.[6,7]. There is slight variation in the observations from a study on 80 females with breast lumps.[8] They observed that sensitivity of modified triple test was 100%, specificity of 82% and accuracy rate of 88.7%. Their sensitivity of clinical examination was comparable with 96.67% but specificity was lower with 84% and positive predictive value was 78.4% in diagnosing malignant lumps. Even though there is debate regarding appropriate modality of pathological test i.e. FNAC versus core needle biopsy, there are various studies supporting the fact that FNAC is an effective tool with high accuracy in diagnosis of breast lesions. [3, 9] Core needle biopsy is preferred when the experience of the cytopathologist is less [3] and whenever surgeon performs the test in hospital settings. The accuracy of FNAC increases and is comparable with core biopsy with adequate exposure. [9]

CONCLUSION

To conclude, triple assessment is an effective tool to diagnose breast lumps accurately in varied settings .It is simple, easy to adopt, obviates necessity of admission and provides valuable input towards decision making regarding management. It also can be considered as valid evidence to avoid unnecessary intervention in benign lesions where surgical intervention may not be necessary.

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