

Original article:

Study of mapping of lymphatic passage of sentinel lymph node in breast cancer patients

¹Dr RN Patil , ²Dr Dilip K Apturkar* , ³Dr Mudit Banerjee

¹Associate Professor, Department of Surgery, Rural Medical College, Pravara Institute of Medical Sciences, Loni, Tal. Rahata, Dist. Ahmednagar, India

²HOD & Professor , Department of Surgery , Rural Medical College, Pravara Institute of Medical Sciences, Loni, Tal. Rahata, Dist. Ahmednagar, India

³Resident , Department of Surgery , Rural Medical College, Pravara Institute of Medical Sciences, Loni, Tal. Rahata, Dist. Ahmednagar, India

Corresponding author*

Abstract:

Introduction: The breast has always been a symbol of womanhood. As a result, both disease and surgery of the breast evoke a fear of mutilation and loss of femininity. Cosmetic consideration, false vanity, psychological disturbance and fear of infertility have hindered early diagnosis and prompt treatment of breast cancer from times of earliest recorded history until today.

Methods and materials : Study was conducted in patients admitted over two years in Rural based hospital from September 2015 to September 2017, 50 patients with breast carcinoma proven by FNAC/TRUECUT biopsy were selected for the SLN protocol at our institution under a verification study for participation in the sentinel node trials. The age of the patients was 35 to 80 years.

Results: Patient excluded having large and locally advanced invasive breast carcinoma, having distant metastasis, who have undergone prior axillary or breast surgery or on chemotherapy and pregnant females.

Conclusion: India being a developing country has found a financial burden on its health management system because of its increasing population including more than 50% females who have a high risk of carcinoma breast. Therefore, it is now very important to do research regarding this serious issue in a cost-effective way.

Introduction:

The breast has always been a symbol of womanhood. As a result, both disease and surgery of the breast evoke a fear of mutilation and loss of femininity. Cosmetic consideration, false vanity, psychological disturbance and fear of infertility have hindered early diagnosis and prompt treatment of breast cancer from times of earliest recorded history until today.[1]

In the present era, however due to increased awareness, literacy, fear of malignancy and stress on the importance of self-examination of the breast[2], it has become common for patients with breast pathology to report early to a clinician; in an expectation of an early accurate diagnosis and necessary prompt treatment.

The impact of breast disease assumes greater importance as cancer of this organ continues to increase exponentially. Breast disease is the leading cause of death from cancer of females, forty and above. Breast cancer accounts for 32% of female cancer and is responsible for 19% of the cancer-related deaths in women. In India[3,4] it is second only to Ca cervix. The annual incidence of ca breast in India is 20.1 per 1,00,000 women [5].

Methods and materials

Study was conducted in patients admitted over two years in Rural based hospital from September 2015 to September 2017, 50 patients with breast carcinoma proven by FNAC/TRUECUT biopsy were selected for the SLN protocol at our institution under a verification study for participation in the sentinel node trials. The age of the patients was 35 to 80 years.

Written informed consent was taken from the patients prior to the surgery for participation in the study.

A detailed history and clinical examination was conducted. After clinical diagnosis, the patients were subjected to necessary laboratory investigations, radiographs, bilateral sonomammography / x-ray mammography, FNAC/TRUE CUT biopsy.

Patient willing to participate in the study having Tis, T1, T2 tumour with palpable breast lump without significantly palpable axillary lymph node who were potentially curable by undergoing axillary lymph node dissection.

Patient excluded having large and locally advanced invasive breast carcinoma, having distant metastasis, who have undergone prior axillary or breast surgery or on chemotherapy and pregnant females.

Inclusion criteria

- Patients with potentially curable breast carcinoma who were undergoing ALND
- Patients who presented with a palpable breast carcinoma
- Patients without clinically palpable axillary lymph nodes.
- Patient with T1 T2 tumours.
- Patient willing to participate in this study.
- Suspicious palpable axillary lymph nodes.

Exclusion criteria

- Patients with prior axillary operations (dissection/excisional biopsy) were excluded
- Large & locally advanced invasive breast cancers
- Prior breast surgery
- Patients who have received preoperative chemotherapy
- Distant metastases
- Pregnancy

Sample size

- 50 patients were selected for the study.

Results:

TABLE 1: DISTRIBUTION ACCORDING TO THE OPERATIVE PROCEDURES

OPERATIVE PROCEDURES	NO OF PATIENTS	PERCENTAGE
Modified Radical Mastectomy(MRM)	45	90%
Breast Conservation Surgery (BCS)	5	10%
TOTAL	50	100%

TABLE 2: CONSISTENCY OF PASSAGE OF LYMPH THROUGH SLN

	NO OF PATIENTS (50)
No of traced positive sentinel lymph nodes	30
No of traced negative sentinel lymph nodes	20

TABLE 3: Showing histological correlation between sentinel lymph node and other axillary lymph nodes.

	Histopathology(+)	Histopathology (-)	Total no of patients
SLN (Positive)	29 (true positive)	1 (false positive)	30
SLN(Negative)	1 (false negative)	19 (true negative)	20

The tests were calculated according to the following formula:

Sensitivity= True Positives / True Positives + False Negatives x 100

Specificity = True Negatives / True Negatives +False Positives x 100

Positive predictive value = true positive/ true positive + false positive x 100

Negative predictive value = true negative/ false negative + true negativex 100

Accuracy = true positive + true negative)/ true positive + false positive + true negative + false negative x 100

Sensitivity = $29/30 \times 100 = 96.67\%$

Specificity = $19/20 \times 100 = 95\%$

Positive predictive value = $29/30 \times 100 = 96.67\%$

Negative predictive value = $19/20 \times 100 = 95\%$

Accuracy = $48/50 \times 100 = 96\%$

Discussion:

This Study was conducted in patients admitted in Rural based hospital from September 2015 to September 2017, 50 patients with breast carcinoma proven by FNAC/TRU CUT biopsy were selected for the SLN protocol at our institution for participation in the sentinel node mapping. The age of the patients considered for the study was 35 to 80 years. Written informed consent was taken from the patients prior to the surgery for participation in the study. Ethical committee approval was taken prior to the start of study. After clinical diagnosis, the patients were subjected to necessary laboratory investigations, bilateral sonomammography / x-ray mammography, FNAC/TRU CUT biopsy. Patient willing to participate in the study having Tis, T1, T2 tumour with palpable breast lump without significantly palpable axillary lymph node who were potentially curable by undergoing axillary lymph node dissection.[6]

Patient excluded having large and locally advanced invasive breast carcinoma, having distant metastasis, who have undergone prior axillary or breast surgery or on chemotherapy and pregnant females.

Determination of axillary nodal status is essential for the staging of breast cancer. However, the extent of axillary dissection required for accurate staging is controversial. Total dissection of the axilla has the highest morbidity, but offers the greatest staging accuracy. The accuracy of limited dissections or sampling procedures is unclear partially because these procedures often are ill defined and partially because of the methods used to evaluate their accuracy. Differences in staging techniques are well defined by Kinne[7]. Sampling is the removal of an axillary node or nodes from the lower axilla without defining precise anatomic boundaries.

Conclusion:

India being developing country has found financial burden on its health management system because of its increasing population including more than 50% females who have high risk of carcinoma breast. Therefore, it is now very important to do research regarding this serious issue in cost effective way.

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