Clinical and radiological assessment of axilla in carcinoma breast
Suhas. N. Bhushan*, S. Senthamizhan, Bhoomika Balareddy

[1]Assistant Professor, Department of General Surgery, The oxford medical college, hospital and research centre, (TOMCH&RC), Bengaluru, Karnataka, India.
[2]Senior Resident, Department of General Surgery, The oxford medical college, hospital and research centre, (TOMCH&RC), Bengaluru, Karnataka, India.
[3]Junior Resident, Department of General Surgery, The oxford medical college, hospital and research centre, (TOMCH&RC), Bengaluru, Karnataka, India.

*Correspondence: Suhas. N. Bhushan

Abstract

Background/aim: Breast cancer is the leading cause of death from cancer for women in age group of 20-59 years. It is responsible for 15% of the cancer related deaths in women. Our study attempts to assess the axillary lymph node status in carcinoma breast using combined clinical and radiological examination.

Materials and methods: A prospective study was conducted using 82 patients with proven cases of carcinoma breast over a period of 2 years. Patients were subjected to clinical examination and ultrasonography of axilla. Then the histopathological reports of the axillary lymph nodes were studied following surgery. The accuracy of clinical and radiological examination have been assessed with the histopathological reports of the lymph nodes.

Results: It was noted that clinical examination has a sensitivity of 53.52% and specificity of 100% in detecting axillary lymph node metastasis, with a PPV of 100%, NPV of 25%, chi square value of 10.792 and a p -value of 0.001 which is statistically significant. However, ultrasonography of axilla has a sensitivity of 77.46% and specificity of 100% in detecting lymph node metastasis, with a PPV of

100%, NPV of 40.74%, chi square value of 25.879 and a p-value of 0.001 which is statistically significant.

Conclusion: Ultasonography is a non invasive, safe, easily available, less expensive and a reliable method of assessing the lymphatic spread of carcinoma breast to the axilla.

Axillary lymph node status assessment is an important step in staging and management of carcinoma breast. In our study, it is highly specific and has got good sensitivity. Further studies have to be conducted on a larger scale to set axillary ultrasound as the standard investigation in assessing the axillary nodal involvement in carcinoma breast.

Key words: Ultrasonography, breast cancer, metastasis,

Introduction

Incidence of breast carcinoma is on the increasing trend in our country and it is now the most common cancer in the urban parts of India, and 2nd most common in the rural areas after cervical cancer. Breast cancer is the leading cause of death from cancer for women in age group of 20-59 years. It is responsible for 15% of the cancer related deaths in women. India is going to face a potential breast cancer epidemic over the next decade as women adopt Western lifestyles by marrying and bearing children later in life[1]. For many years, axillary lymph node dissection (ALND) was the choice of method for axillary nodal evaluation which reliably staged and effectively treated metastatic lymph node involvement. However, for those cases that had no nodal involvement ALND gave no advantage and sometimes was associated with significant complications such as lymphedema, wound infections, stiffness, shoulder weakness, pain and numbness of the affected arm. Afterwards, the concept of sentinel lymph node biopsy (SLNB) was developed[2]. This method has been shown to be a valuable tool in determining whether the cancer has spread from its original site and for axillary staging. It has proven to be an effective alternative to ALND. Those patients whose SLNB is disease-free require no further treatment and are spared from unnecessary axillary surgery. Despite its wide acceptance for practice, SLNB has some drawbacks; it is a slow and meticulous process for surgeons

in the operating room, requires the administration of radioisotopes to patients, and needs multiple microscopic sections for final histological examination. Currently, the selection of breast cancer patients who should undergo the SLNB procedure is based on a negative axillary clinical examination. However, the sensitivity of such clinical examination is 15%-60%. In fact, a large number of patients with nonpalpable axillary lymph nodes have metastatic involvement [3]. An ultrasound examination has been recommended by few studies to detect suspicious involved axillary lymph nodes.

OBJECTIVES

1. To assess the axillary lymph node status using combined clinical examination and Ultrasonography of the axilla in carcinoma breast.

2. To assess the accuracy of the axillary lymph node status assessed using clinical and radiological examination with the histopathological reports of axillary lymph nodes.

MATERIALS AND METHODS

It was a prospective study carried out with patients presenting to The oxford medical college hospital and research centre from September 2021 to august 2023 with proven carcinoma breast.

INCLUSION CRITERIA

· Proven cases of carcinoma breast

EXCLUSION CRITERIA

· Prior surgery to axillary region
· Pre operative chemotherapy
· Major organ failure
· Concomitant malignancy

Procedure:

Patients meeting the criteria were enrolled into the study. Data was collected by history taking, clinical examination of breast and axilla, after obtaining the written informed

consent, and with a female attender beside the patient. Patients were subjected to primary tumor investigations, then these patients were subjected to ultrasonography of the axilla. Ultrasonography of the axilla detects the enlarged lymph nodes, number, size and morphology. Later these patients underwent modified radical mastectomy and specimens were sent for HPE to check for malignancy of lymph nodes. Thus, the accuracy of ultrasonography of axilla in detecting the malignant lymph nodes in axilla is studied.

STATISTICAL ANALYSIS

The data was analysed using SPSS software version 25. The sensitivity and specificity of clinical examination and ultrasonography of axilla were studied with the histopathological evidence of malignancy in axillary lymph nodes. A p value of <0.05 was considered significant.

SAMPLE SIZE ESTIMATION

The sample size is calculated from the formula

$$n = \frac{(1.96)^2 \times p \times q}{d^2}$$

where, n = sample size

p = 85

q = 100-85 = 15

d = allowable error (10% of p) = 8.5

$$n = \frac{(1.96)^2 \times 85 \times 15}{8.5^2}$$

= 67.79

$\approx$ 70

The sample size taken in current study is 82.

RESULTS

I.   **AGE DISTRIBUTION (IN YEARS)**
Table 1: Age distribution in years

AGE IN YEARS	CASES	PERCENTAGE
31-40	8	9.7
41-50	22	26.8
51-60	29	35.3
61-70	22	26.8
71-80	1	1.2
TOTAL	82	100
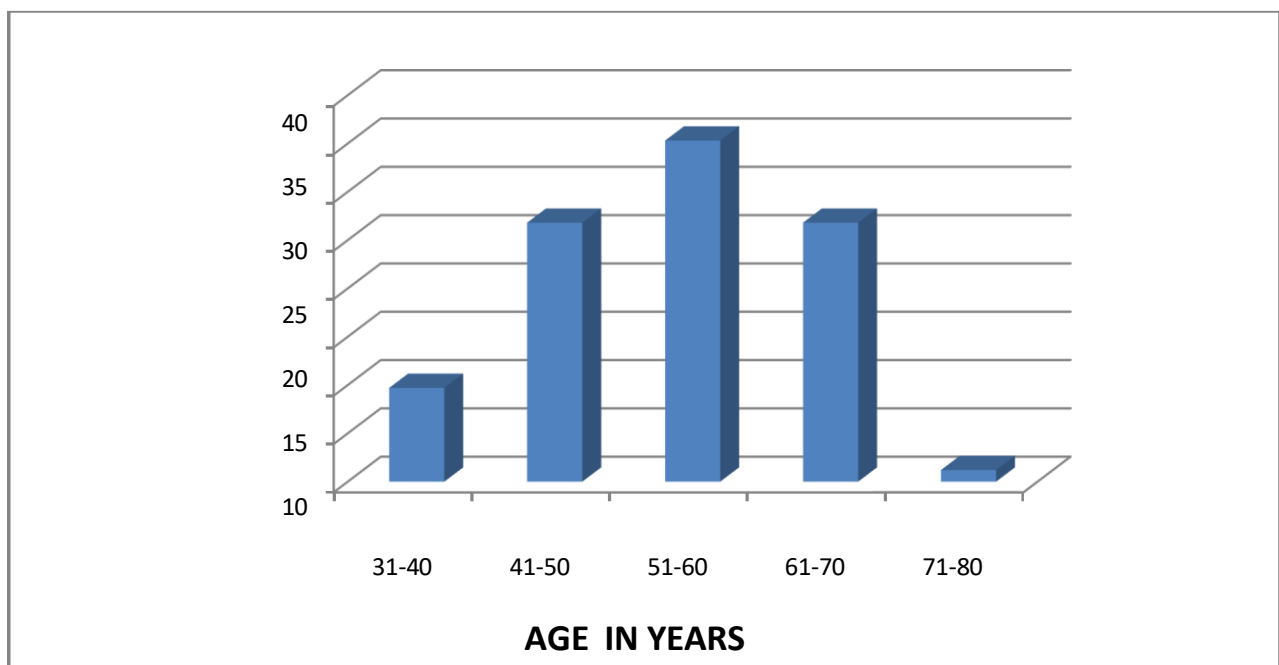
Graph 1: Age distribution in years.

Among 82 patients in our study group, the age distribution showed a peak in 51-60 years age group, with 29 patients (35.3%). 22 patients belonged to 41-

50 age group and 61-70 age group (26.8%). 8 patients belonged to 31-40 years age group (9.7%). Only 1 patient fell into the 71-80 years age group (1.2%).

II.   SIDE INVOLVEMENT
  Table 2: Involvement of side of breast.

SIDE	NO OF CASES	PERCENTAGE
R	35	42.68292683
L	47	57.31707317
TOTAL	82	100
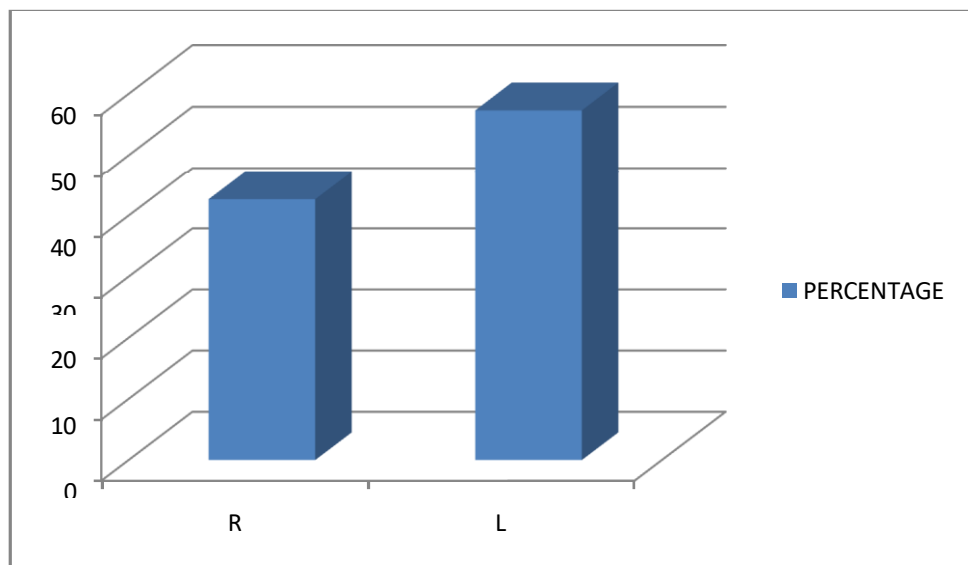
Graph 2: Involvement of side of breast.

Among 82 patients in our study, 35 patients had right breast involvement, (42.68%) and 47 patients had left breast involvement, (57.31%).

III.   QUADRANT INVOLVEMENT

Table 3: Affected quadrant of breast.

QUADRANT INVOLVED	NO OF CASES	PERCENTAGE
UPPER OUTER	60	73.17073171
UPPER INNER	8	9.756097561
LOWER OUTER	9	10.97560976
LOWER INNER	0	0
CENTRAL	5	6.097560976
TOTAL	82	100
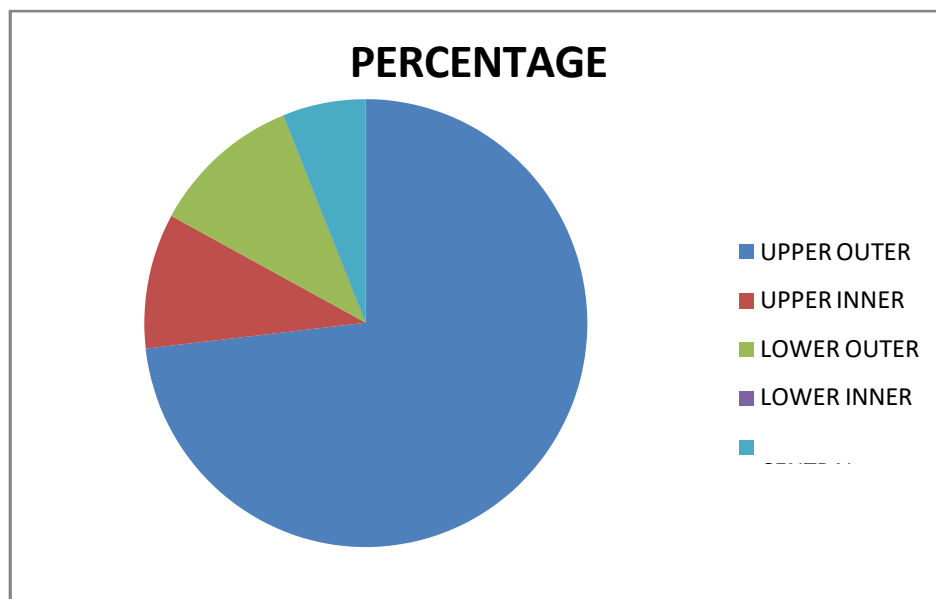
Graph 3: Affected quadrant of breast

Most affected quadrant of breast was upper outer quadrant, seen in 60 cases (73.17%) followed

by lower outer quadrant in 9 patients (10.97%), then upper inner quadrant in 8 patients (9.75%)

followed by central quadrant involvement in 5 patients (6.09%).

IV.   FAMILY HISTORY

Table 4: Family history of carcinoma breast

FAMILY HISTORY	NO OF CASES	PERCENTAGE
YES	5	6.097560976
NO	77	93.90243902
TOTAL	82	100
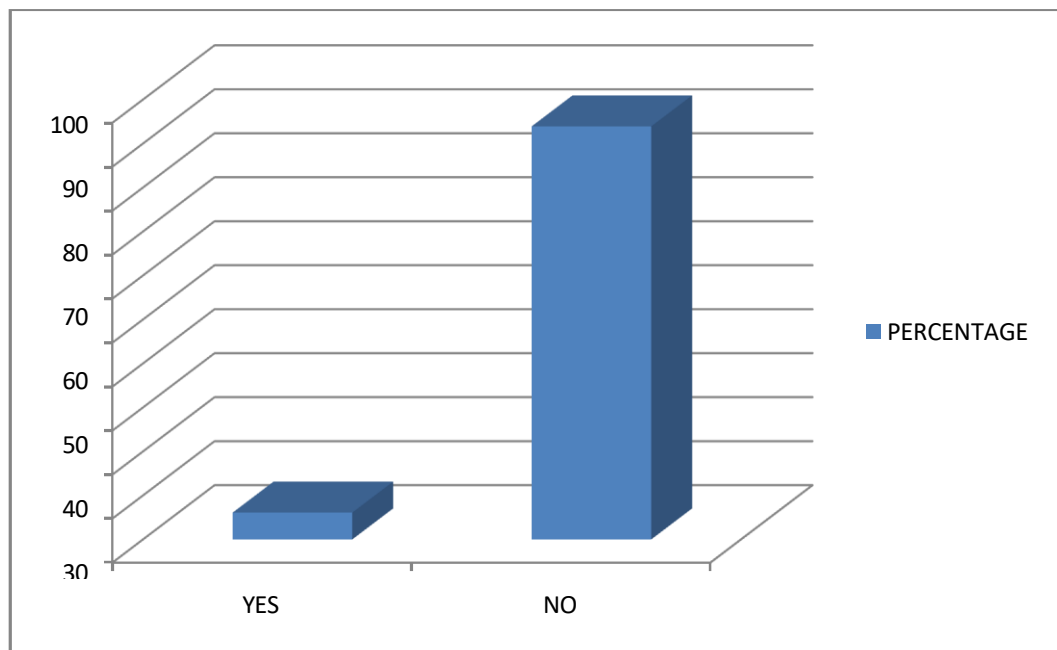
Graph 4: Family history of carcinoma breast.

With respect to family history, only 5 patients (6.09%) had a positive family history, while 77 (93.9%) patients had no significant family history.

V.   MENSTRUAL HISTORY

Table 5: Menstrual history

AGE OF MENOPAUSE	NO OF CASES	PERCENTAGE
PRE MENOPAUSAL	24	29.26829268
POST MENOPAUSAL	58	70.73170732
TOTAL	82	100
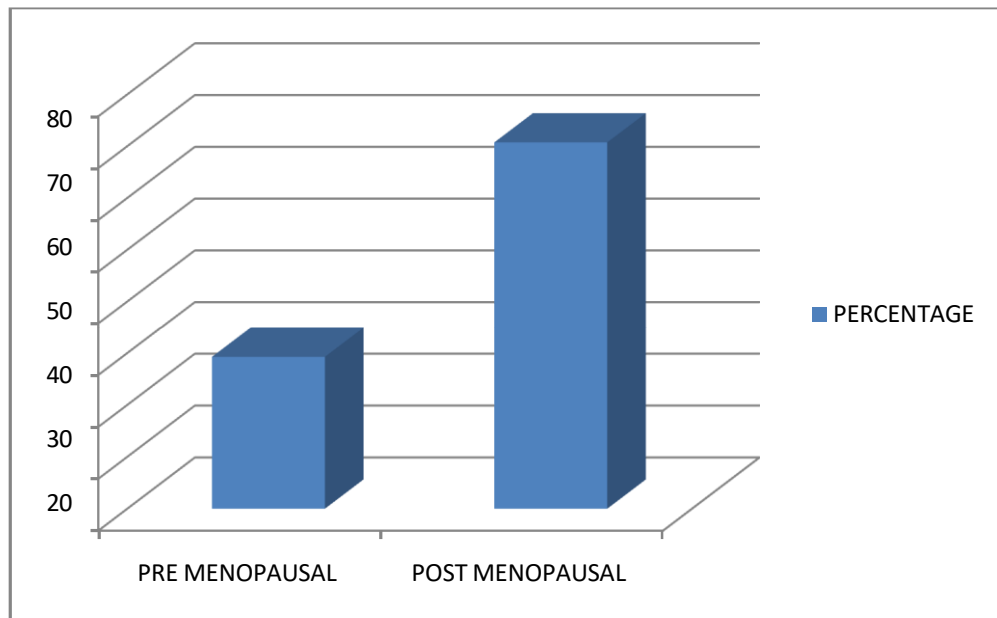
Graph 5: Menstrual history.

Majority of the patients in the study group are post menopausal, with 58 patients being post menopausal (70.73%) and 24 (29.26%) being pre menopausal.

VI.   LYMPH NODE STATUS

Table 6: Lymph node status assessed using various methods.

	NO OF POSITIVE CASES	NO OF NEGATIVE CASES	PERCENTAGE OF POSITIVE CASES	PERCENTAGE OF NEGATIVE CASES
CLINICAL	38	44	46.34146341	53.65853659
USG	55	27	67.07317073	32.92682927
HPE	72	10	87.80487805	12.19512195
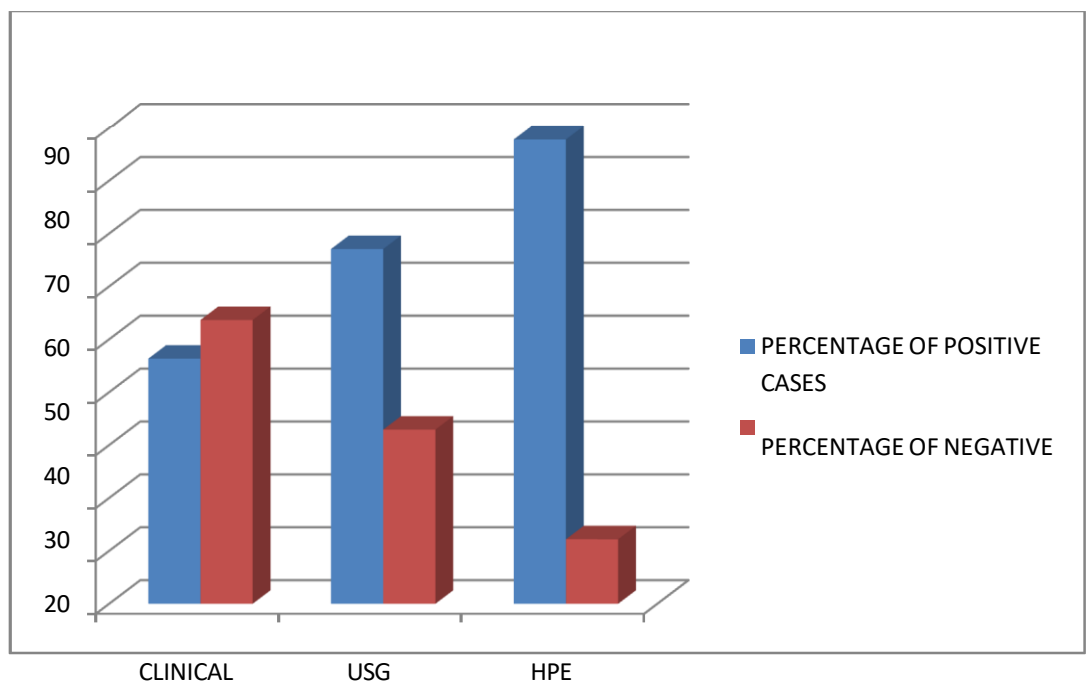
Graph 6: Lymph node status assessed using various methods. Among 82 patients in our study, 38 (46.3%) patients had clinically palpable lymph nodes, 44 (53.6%) patients had no palpable lymph nodes. 55 patients (67.07%) had lymph nodes detected by ultrasonography and 27 patients (32.9%) had sonologically negative lymph nodes. 72 patients (87.80%) had histologically proven lymph node metastasis whereas 10 patients (12.19%) were histologically node negative.

VII. HISTOPATHOLOGICAL TYPE

Table 7: Histopathological types noted among the study group.

HPE	NO OF CASES	PERCENTAGE
INVASIVE DUCTAL CARCINOMA	53	64.63414634
INVASIVE LOBULAR CARCINOMA	15	18.29268293
INVASIVE MEDULLARY CARCINOMA	6	7.317073171
COLLOID CARCINOMA	4	4.87804878
POORLY DIFFERENTIATED CARCINOMA	4	4.87804878
TOTAL	82	100
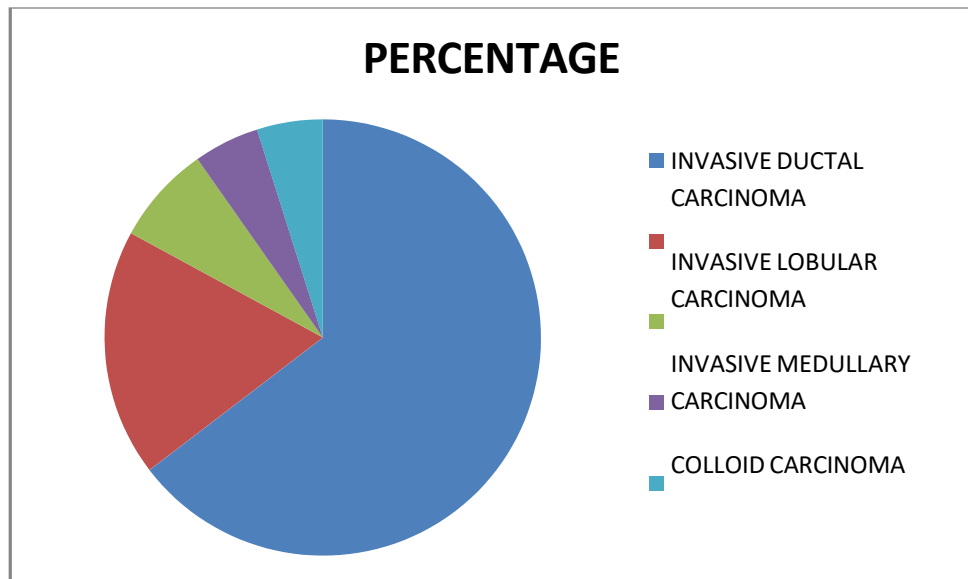
Graph 7: Histopathological types noted among the study group.

Among the histopathological type, invasive ductal carcinoma was the most common type being found in 53 cases (64.63%) followed by invasive lobular carcinoma found in 15 cases (18.29%) then invasive medullary carcinoma in 6 cases (7.3%) followed by colloid carcinoma in 4 cases (4.87%) and poorly differentiated carcinoma in 4 cases (4.87%).

VIII.   GROUPS OF LYPMH NODE INVOLVEMENT
Table 8: Affected group of lymph nodes

GROUP	NUMBER	PERCENTAGE
ANTERIOR	33	70.21276596
POSTERIOR	3	6.382978723
CENTRAL	9	19.14893617
LATERAL	2	4.255319149
APICAL	0	0
TOTAL	47	100
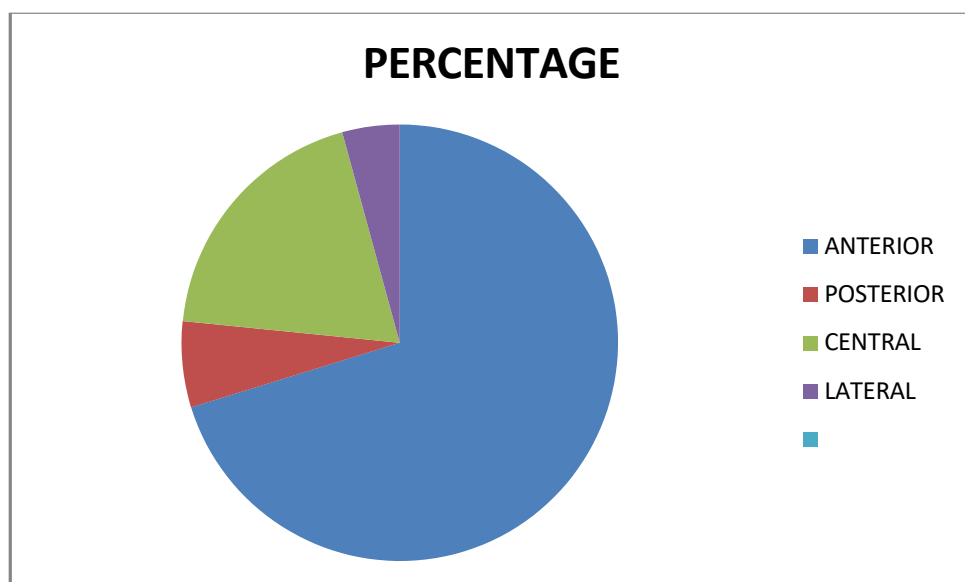
Graph 8: Affected group of lymph nodes

Among 47 patients who showed clinically palpable lymph nodes, anterior group

involvement was most common as seen in 33 patients (70.2%), followed by central group

involvement in 9 patients (19.2%) followed by posterior group involvement in 3 patients

(6.38%) and lateral group involvement in 2 patients (4.25%).

IX.   STAGING

Table 9: Staging of carcinoma breast among the study group.

STAGE	NO OF CASES	PERCENTAGE
I	0	0
IIA	12	14.63414634
IIB	30	36.58536585
IIIA	21	25.6097561
IIIB	19	23.17073171
IIIC	0	0
IV	0	0
TOTAL	82	100
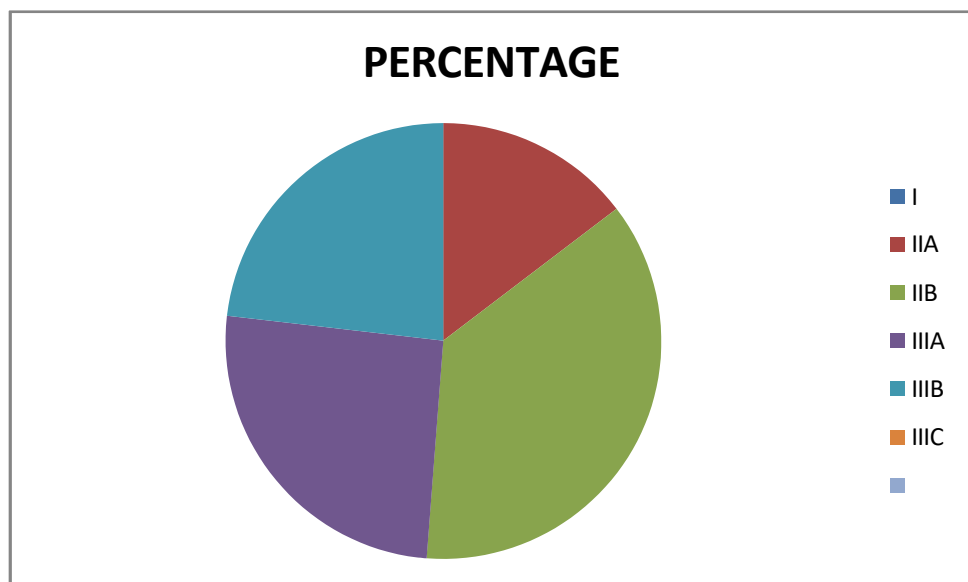
Graph 9: Staging of carcinoma breast among the study group:

With respect to staging of carcinoma breast, majority of the patients, i.e. 30 patients (36.58%)

belong to stage IIB, followed by stage IIIA in 21 patients histologically proven lymph node

metastasis whereas 10 patients (12.19%) were histologically node negative.

X.   STATISTICAL ANALYSIS

Table 10: Statistical Analysis

Clinically positive	HPE with malignant lymph nodes		Total	Sensitivity	Specificity	PPV	NPV	Chi-square value	P-value
	Yes	No							
Yes	38	0	38						
No	33	11	44	53.52	100.00	100.00	25.00	10.792	0.001
Total	71	11	82						

Among 38 patients who showed clinically palpable lymph nodes, all 38 patients had HPE proven lymph node involvement. Among 44 patients without clinically palpable lymph nodes, 33 patients had HPE proven lymph node metastasis and 11 showed no lymph node involvement on HPE. The sensitivity is 53.52%, specificity is 100%. Positive predictive value is 100%, negative predictive value is 25%. Chi square value is 10.792, with p value of

0.001 which is statistically significant.

Table 11: Statistical Analysis

Sonologically positive	HPE with malignant lymph nodes		Total	Sensitivity	Specificity	PPV	NPV	Chi-square value	P-value
	Yes	No							
Yes	55	0	55	77.46	100.00	100.00	40.74	25.879	< 0.001
No	16	11	27						
Total	71	11	82						

Among 55 patients who showed sonologically positive lymph nodes, all 55 patients had HPE proven lymph node involvement. Among 27 patients with sonologically negative lymph nodes, 16 patients had HPE proven lymph node metastasis and 11 showed no lymph node involvement on HPE. The sensitivity is 77.46%, specificity is 100%. Positive predictive value is 100%, negative predictive value is 40.74%. Chi-square value is 25.879, with p value of 0.001 which is statistically significant.

DISCUSSION

Breast malignancies are the second most common cause of cancer related mortality among women. The status of axillary lymph node metastasis in addition to being an important prognostic factor in this group of patients, has a critical role in the management of this disease.

For many years, axillary lymph node dissection (ALND) was the method of choice for axillary node evaluation, which reliably staged and effectively treated metastatic lymph node involvement. However, for those cases that had no nodal involvement, ALND gave no advantage and was sometimes associated with significant complications such as lymphedema, wound infections, stiffness, shoulder weakness, pain and numbness of affected arm.

Thus, the concept of sentinel lymph node biopsy (SLNB) evolved. Though it was considered as the gold standard investigation in axillary lymph node metastasis, it had a few drawbacks such as it is a slow and meticulous process for surgeons in the operation theatre, and requires administration of radioisotopes, and needs multiple microscopic sections for final histological examination.

Hence there came the need for safe, non invasive and reliable methods to identify the axillary lymph node status in carcinoma breast. Ultrasonography, which is safe and reliable, helps in identifying the axillary status.

In our study, we selected 82 patients with proven carcinoma of breast. Those who had prior surgery to axilla, pre operative chemoradiotherapy, major organ failure and

concomitant malignancy were excluded from the study.

Patient history was documented in detail, with demographic details, significant family history, menstrual history, previous surgeries, obstetric history and presenting complaints.

Examination of breast and axilla was done after obtaining the written informed consent from the patients and in the presence of a female attender with the patient.

Examination of axilla was carried out carefully to look for any enlarged lymph nodes. Findings with respect to group of lymph node, size, number, tenderness and mobility were documented in detail.

Systemic examination was done including examination of spine for spine tenderness, and examination of respiratory system and cardiovascular system.

The study group patients were subjected to primary tumor investigations, and then they were subjected to ultrasonography of axilla using a frequency of 7.5 MHz.

The sonological appearance of a normal axillary lymph node resembles the shape of a kidney. Although the lymph nodes are much smaller, they are both elliptical in shape and contain a cortex and mediatinum. They appear flat and C-shaped in the short axis.

The opening of C is where the hilum of the node is located. The size of normal lymph node varies depending upon the cortex and mediastinum. In general, a larger lymph node will have a fattier mediastinum and a thinner stretched cortex. Repeated inflammation, scarring, atrophy and weight gain which occur with increased age often cause a fattier mediastinum and thinner cortex.

Abnormal lymph nodes tend to become more rounded due to the neoplastic involvement enlarging the short plane of the node. It is important to calculate the length/diameter (L/D) ratio, because this can help in determining a numerical value which is easier to assess.

Based on previous studies, an L/D ratio of < 1.5 indicates that the node is malignant. The lymph nodes were also assessed for morphological changes of malignancy using Stauros morphological scale.

All the patients in our study group underwent modified radical mastectomy after obtaining informed written consent. Intraoperative findings of surgery along with axillary lymph node findings were noted.

Then the resected specimen was sent for histopathological examination along with the lymph nodes labeled separately.

The data has been analysed using SPSS software 25. The sensitivity and the specificity of clinical examination and ultrasonography of axilla were studied with histopathological evidence of malignancy on axillary lymph nodes.

Among 82 patients in our study group, the age distribution showed a peak in 51-60 years age group, with 29 patients (35.3%). 22 patients belonged to 41-50 age group and 61-70

age group (26.8%). 8 patients belonged to 31-40 years age group (9.7%). Only 1 patient fell into the 71-80 years age group (1.2%).

35 patients had right breast involvement, (42.68%) and 47 patients had left breast

involvement, (57.31%).

Most affected quadrant of breast was upper outer quadrant, seen in 60 cases (73.17%) followed by lower outer quadrant in 9 patients (10.97%), then upper inner quadrant in 8 patients (9.75%) followed by central quadrant involvement in 5 patients (6.09%). Similar findings, with maximum occurrence in upper outer quadrant and least occurrence in lower inner quadrant was noted in a study by Siwa Chan et al[57].

With respect to family history, only 5 patients (6.09%) had a positive family history, while 77 (93.9%) patients had no significant family history.

Majority of the patients in the study group are post menopausal, with 58 patients being post menopausal (70.73%) and 24 (29.26%) being pre menopausal.

Among 82 patients in our study, 38 (46.3%) patients had clinically palpable lymph nodes, 44 (53.6%) patients had no palpable lymph nodes. 55 patients (67.07%) had lymph nodes detected by ultrasonography and 27 patients (32.9%) had sonologically negative lymph nodes. 72 patients (87.80%) had histologically proven lymph node metastasis whereas 10 patients (12.19%) were histologically node negative.

Among the histopathological type, invasive ductal carcinoma was the most common type being found in 53 cases (64.63%) followed by invasive lobular carcinoma found in 15 cases (18.29%) then invasive medullary carcinoma in 6 cases (7.3%) followed by colloid carcinoma in 4 cases (4.87%) and poorly differentiated carcinoma in 4 cases (4.87%).

Among 47 patients who showed clinically palpable lymph nodes, anterior group

involvement was most common as seen in 33 patients (70.2%), followed by central group involvement in 9 patients (19.2%) followed by posterior group involvement in 3 patients (6.38%) and lateral group involvement in 2 patients (4.25%).

With respect to staging of carcinoma breast, majority of the patients, i.e. 30 patients (36.58%) belong to stage IIB, followed by stage IIIA in 21 patients (25.6%) then stage IIIB in 19 patients (23.17%) followed by stage IIA in 12 cases (14.63%).

Among 38 patients who showed clinically palpable lymph nodes, all 38 patients had HPE proven lymph node involvement. Among 44 patients without clinically palpable lymph nodes, 33 patients had HPE proven lymph node metastasis and 11 showed no lymph node involvement on HPE. The sensitivity is 53.52%, specificity is 100%. Positive predictive value is 100%, negative predictive value is 25%. Chi square value is 10.792, with p value of 0.001 which is statistically significant.

Among 55 patients who showed sonologically positive lymph nodes, all 55 patients had HPE proven lymph node involvement. Among 27 patients with sonologically negative lymph nodes, 16 patients had HPE proven lymph node metastasis and 11 showed no lymph node involvement on HPE. The sensitivity is 77.46%, specificity is 100%. Positive predictive value is 100%, negative predictive value is 40.74%. Chi-square value is 25.879, with p value of 0.001 which is statistically significant.

CONCLUSION

We started our study to find a non invasive, safe and a reliable method of assessing the lymphatic spread of carcinoma breast to the axilla.

82 patients were included in the study following the exclusion criteria. After being subjected to clinical examination of breast and axilla, and ultrasonography of axilla they underwent modified radical mastectomy and the histopathology reports were compared with the findings of the clinical and sonological evaluation.

The sensitivity of clinical examination in detecting axillary lymph nodes was found to be 53.52% with a specificity of 100%, a PPV of 100% and NPV of 25%, chi-square value of 10.792 with p value of 0.001 which is statistically significant.

The sensitivity of ultrasonography in detecting the malignant axillary lymph nodes was found to be 77.46% with a specificity of 100%, PPV of 100%, NPV of 40.74%, chi square value of 25.879, with a p value of 0.001 which is statistically significant.

From our study it can be concluded that combined clinical and radiological assessment using ultrasonography has a major role in identifying the axillary lymph node metastasis.

Further studies have to be conducted on a large scale to conclude that ultrasonography of axilla is the best investigation in assessing axillary lymph node metastasis.

From our study it can be concluded that combined clinical and radiological assessment using ultrasonography has a major role in identifying the axillary lymph node metastasis.

LIMITATIONS

- Small sample size

- Observer variation in USG axilla

REFERENCES

1. Breasted JH (1930) The Edwin Smith surgical papyrus.The University of Chicago Press, Chicago, Ill.

2. Tahmasebi S, Dalfardi B, Akrami M, Talei A, Rasekhi A. The clinical value of axillary ultrasonography for detection of axillary lymph node metastasis in cases with breast cancer. Middle east journal of cancer; 2014; 5(4): 215-220

3. Moorman A M , Bourez R, Heijmans H J, Kownwenhoven A. Axillary ultrasonography in breast cancer patients helps identifying patients preoperatively with limited disease of the axilla. Annals of surgical oncology; april 2014.

4. Ertan K, Linser C, Alenander D Liberto, Fangong M, Endrikat E S. Axillary Ultrasound for Breast Cancer Staging: an Attempt to identify Clinical/Histopathological Factors Impacting Diagnostic Performance. Breast cancer (aukl); 2013;7:35-40.

5. Wood WC (1994) Progress from clinical trials on breast cancer. Cancer 74: 2606– 2609.

6. Ariel IM (1987) Breast cancer, a historical review: is thepast prologue? In: Ariel IM, Cleary JB (eds) Breast cancer diagnosis and treatment.McGraw-

Hill, New York, pp 3-26.

7. Le Dran F. Memoire avec une precis de plusieurs observationssur le. *Mem Acad Roy Chir Paris*. 1757; 3:1.

8. Robbins GF (1984) Clio chirurgica: the breast. Silvergirl,Austin, Tex

9. Moore C. On the influence of inadequate operations on thetheory of cancer. *R Med Chir Soc*. 1867; 1:244.

10. Virchow R (1863) Cellular pathology. Lippincott, Philadelphia,Pa.

11. Halsted WS I. The results of operations for the cure of cancer of the breast performed at the Johns Hopkins Hospital from June, 1889, to January, 1894. *Ann Surg*. 1894; 20:497-555.

12. Patey DH, Dyson WH. The prognosis of carcinoma of the breast in relation to the type of operation performed. *Br J Cancer*. 1948; 2:7-13.

13. Fisher B, Jeong JH, Anderson S, et al. Twenty-five-year follow-up of a randomized trial comparing radical mastectomy, total mastectomy, and total mastectomy followed by irradiation. *N Engl J Med*. 2002; 347:567-75.

14. Keynes G. Conservative Treatment of Cancer of the Breast. *Br Med J*. 1937; 2(3):643-666.

15. Fisher B, Anderson S, Bryant J, et al. Twenty-year follow- up of a randomized trial comparing total mastectomy, lumpectomy, and lumpectomy plus irradiation for the treatment of invasive breast cancer. N Engl J Med. 2002; 347:1233-1241.

Sl.no	Name	Age	Address	IP no	History	Quadrants involved	Family history	Menopause	Examination of breast and axilla	no of axillary LN with maximum size in cms	Group	TNM Staging	USG Axilla LNs with L/D = < 1.5	USG Axilla showing morphologically malignant lymph nodes	No. of LNs with maximum size in cms	HPE	No. of LNs positive in HPE
1	Gowramma	60	Bangalore	65196	lump in Rt breast and axilla -3m	Upper Outer	NO	YES	solitary lump in Rt breast 6X6cm, firm, mobile, peau d' orange+	1LN, 2X1	Anterior	T4bN1M0	YES	YES	2 LN, 2.4X1.5	invasive ductal CA	3/16 LN
2	Shaheen taj	52	Bangalore	68008	lump in Lt breast -1yr	Upper Outer	NO	YES	solitary lump in Lt breast 12X6cm, firm, mobile, peau d' orange+	nil		T4bN0M0	NO	NO	nil	invasive lobular CA	8/18 LN
3	Susheela bai	47	bidar	68939	lump in Rt breast - 1m, axilla - 15d	Upper Outer	NO	YES	solitary lump in Rt breast 3X3cm, firm, mobile, peau d' orange+	1LN, 3X1	Central	T4bN1M0	YES	YES	multiple,3X1.6	invasive ductal CA	17/28 LN
4	Kamala bai	40	kolkatta	57699	lump in Rt breast 2m	Central	NO	NO	solitary lump in Rt breast 6X7cm, firm, mobile, nipple retraction+	nil	Central	T3N0M0	YES	NO	multiple,3X1.6	invasive medullary CA	0/11 LN
5	Jayamma	59	Bangalore	60947	lump in Lt breast - 6m	Upper Inner	NO	YES	solitary lump in Lt breast 6X6cm, firm, peau d' orange+	1LN, 2X2	Anterior	T4bN1M0	YES	YES	multiple,2.4X2.2	invasive ductal CA	8/20 LN
6	Uma	40	Bangalore	61630	lump in Rt breast - 3m	Upper Outer	NO	NO	solitary lump in Rt breast 4X3cm, peau d' orange+	nil		T4bN0M0	NO	NO	nil	invasive ductal CA	0/22 LN
7	Devarajamma	44	mysore	61176	lump in Lt breast - 6m	Upper Outer	NO	NO	solitary lump in Lt breast 5X3cm, hard, mobile	nil		T2N0M0	YES	YES	1 LN, 2.5X2.2	invasive ductal CA	1/11 LN
8	Rameshwari	35	chennai	50164	lump in Rt breast - 2m	Lower Outer	YES	NO	solitary lump in Rt breast 5X5cm, mobile	nil		T2N0M0	YES	YES	1 LN, 2.1X2.0	invasive lobular CA	17/21 LN
9	Kempamma	68	Bangalore	52508	lump in Lt breast - 8m	Upper Outer	NO	YES	solitary lump in Lt breast 6X8cm, hard, nipple retraction+	nil		T3N0M0	YES	YES	multiple, 2.1X2.3	invasive ductal CA	7/14 LN
10	Nagarathnamma	45	Bangalore	52711	lump in Lt breast - 6m	Upper Outer	NO	NO	solitary lump in Lt breast 5X3cm, hard, mobile	nil		T2N0M0	YES	NO	1 LN, 1.8X2.1	invasive ductal CA	1/11 LN
11	Tabasum	48	Bangalore	55828	lump in Rt breast - 6m	Upper Outer	NO	NO	solitary lump in Rt breast 4X4cm, hard, mobile	1LN, 2X1	Anterior	T2N1M0	YES	NO	1 LN, 2.1X2.3	invasive lobular CA	4/8 LN
12	Shaheeda	60	hindupur	56381	lump in Rt breast - 6m	Upper Outer	NO	YES	solitary lump in Rt breast 7X7cm, hard, mobile	nil		T3N0M0	YES	YES	2 LN, 2.2X1.8	invasive ductal CA	6/16 LN
13	Sunita das	60	kolkata	59617	lump in Rt breast - 2m	Lower Outer	NO	YES	solitary lump in Rt breast 6X6cm, firm, mobile	nil		T3N0M0	NO	NO	nil	invasive ductal CA	0/15 LN
14	Kamalamma	70	Bangalore	70898	lump in Lt breast - 6m	Upper Outer	NO	YES	solitary lump in Lt breast 6X6cm, firm, mobile	1LN, 2X2	Anterior	T3N1M0	YES	YES	1 LN, 1.8X2.3	invasive ductal CA	1/11 LN
15	Thippaka	66	Bangalore	71606	lump in Lt breast - 4m	Upper Outer	NO	YES	solitary lump in Lt breast 4X4cm, hard, mobile	nil		T3N0M0	NO	NO	nil	invasive ductal CA	0/10 LN
16	Kumari	48	hyderabad	64489	lump in Lt breast - 5m	Upper Outer	NO	YES	solitary lump in Lt breast 6X5cm, hard, mobile	3LN, 2X2	Posterior, central	T3N1M0	YES	YES	multiple, 2.1X2.3	invasive ductal CA	4/15 LN
17	Shantharajamma	52	Bangalore	67125	lump in Lt breast - 3m	Upper Inner	NO	YES	solitary lump in Lt breast 3X3cm, hard, mobile	nil		T2N0M0	YES	YES	nil	invasive ductal CA	7/15 LN
18	Bhagyamma	68	Bangalore	76834	lump in Rt breast - 6m	Upper Outer	NO	YES	solitary lump in Rt breast 6X6cm, hard, mobile	1LN, 2X2	Anterior	T3N1M0	YES	YES	multiple, 2.3X1.8	invasive ductal CA	13/22 LN
19	Lakshmi	42	kolar	45583	lump in Lt breast - 1yr	Upper Outer	NO	NO	solitary lump in Lt breast 10X8cm, hard, mobile	2LN, 3X3	Anterior, lateral	T3N1M0	YES	YES	multiple, 2.8X2.6	invasive ductal CA	7/15 LN
20	Vatsalamma	64	ananthpur	51086	lump in Lt breast - 1yr	Upper Outer	NO	YES	solitary lump in Lt breast 10X10cm, hard, mobile, peau d' orange+	3LN, 3X1; 1LN 4X3	Anterior, central	T4bN2aM0	YES	YES	multiple,3X2.2	colloid CA	9/17 LN
21	Vasanthamma	40	Bangalore	51691	lump in Rt breast - 7m	Upper Inner	YES	NO	solitary lump in Rt breast 6X5cm, hard, mobile	nil		T3N0M0	YES	YES	2 LN, 2.1X1.9	invasive ductal CA	2/15 LN
22	Varalakshmi	43	mandya	54744	lump in Lt breast - 1yr	Upper Outer	NO	NO	solitary lump in Lt breast 4X4cm, hard, mobile	nil		T2N0M0	NO	NO	nil	invasive ductal CA	6/15 LN
23	Bibi Jan	45	Bangalore	60423	lump in Lt breast - 2yrs	Upper Outer	NO	YES	solitary lump in Lt breast 10X10cm, hard, mobile	1LN, 3X2; 1LN 4X3	Anterior, central	T3N2aM0	YES	YES	multiple, 2.8X2.5	colloid CA	9/17 LN
24	Shakeela banu	48	Bangalore	64948	lump in Rt breast - 6m	Upper Outer	NO	YES	solitary lump in Rt breast 6X6cm, hard, mobile	nil		T3N0M0	NO	NO	nil	invasive ductal CA	0/10 LN
25	Raziya bi	50	mysore	65565	lump in Rt breast - 3m	Lower Outer	NO	YES	solitary lump in Rt breast 7X5cm, hard, mobile	nil		T3N0M0	YES	YES	1 LN, 1.8X2.3	invasive lobular CA	4/18 LN
26	Mustari Begum	65	Bangalore	66932	lump in Lt breast - 6m	Upper Outer	NO	YES	solitary lump in Lt breast 10X10cm, hard, mobile	1LN, 3X2	Anterior	T3N1M0	YES	YES	2 LN, 2.8X1.8	invasive ductal CA	7/12 LN
27	Seetharani	43	Bangalore	72727	lump in Lt breast - 5m	Upper Outer	NO	NO	solitary lump in Lt breast 2X2cm, hard, mobile	nil		T2N0M0	NO	NO	nil	invasive ductal CA	0/6 LN
28	Maramma	60	belgaum	75521	lump in Lt breast - 2m	Upper Outer	NO	YES	solitary lump in Rt breast 4X4cm, hard, mobile	1LN, 2X1	Anterior	T2N1M0	YES	YES	2 LN, 2.6X2.4	invasive medullary CA	6/14 LN
29	Manjula	50	Bangalore	55722	lump in Lt breast - 2m	Upper Outer	NO	YES	solitary lump in Lt breast 8X10cm, hard, mobile	1LN, 1X1	Anterior	T3N1M0	YES	YES	multiple, 2.8X3.1	Poorly differentiated CA	9/11 LN
30	Lakshmamma	40	hassan	67746	lump in Rt breast - 4m	Upper Inner	NO	NO	solitary lump in Lt breast 5X6cm, firm, mobile	1LN, 2X2	Anterior	T4bN1M0	YES	YES	2 LN, 2.4X1.8	invasive ductal CA	4/16 LN
31	Samreen khan	38	Bangalore	68351	lump in Lt breast - 10m	Upper Outer	NO	NO	solitary lump in Lt breast 10X8cm, firm, mobile, peau d' orange+	1LN, 2X2	Anterior	T4bN0M0	NO	NO	nil	invasive lobular CA	6/18 LN

#	Name	Age	Place	ID	Complaint	Quadrant			Examination	LN		Location	TNM			Multiple	Diagnosis	LN ratio
32	Geetha	47	davangere	72831	lump in Rt breast - 2m	Upper Outer	NO	NO	solitary lump in Rt breast 4X3cm, firm, mobile, peau d' orange+	1LN, 3X2			T4bN1M0	YES	YES	multiple,2 8X1.8	invasive ductal CA	16/22 LN
33	Bathula bi	48	Bangalore	74240	lump in Rt breast - 6m	Upper Outer	NO	YES	solitary lump in Rt breast 5X5cm, firm, mobile, nipple retraction+	nil			T3N0M0	YES	NO	nil	invasive lobular CA	2/11 LN
34	Pauline	78	coimbatore	52248	lump in Lt breast - 6m	Upper Outer	NO	YES	solitary lump in Lt breast 6X6cm, firm, peau d' orange+	1LN, 2X2		Anterior	T4bN1M0	YES	YES	multiple,2 4X2.2	invasive ductal CA	8/20 LN
35	Bhagya	42	Bangalore	57825	lump in Rt breast - 5m	Central	NO	NO	solitary lump in Rt breast 3X4cm, peau d' orange+	nil		Anterior	T4bN0M0	NO	NO	nil	invasive ductal CA	2/10 LN
36	Rathnamma	54	Bangalore	59572	lump in Lt breast - 9m	Upper Outer	NO	YES	solitary lump in Lt breast 6X5cm, firm, mobile	1LN, 2X3		Anterior	T3N1M0	YES	YES	1 LN, 1.6X2.5	invasive ductal CA	3/12 LN
37	Selvi	50	chennai	52078	lump in Lt breast - 2m	Lower Outer	NO	YES	solitary lump in Lt breast 3X3cm,hard,mobile	nil		Anterior	T3N0M0	NO	NO	nil	invasive ductal CA	2/10 LN
38	Yasmeen banu	38	Bangalore	53013	lump in Lt breast - 6m	Upper Outer	NO	NO	solitary lump in Lt breast 5X5cm, hard, mobile	1LN, 2X2		Posterior, central	T3N1M0	YES	YES	multiple, 2 3X2.2	invasive ductal CA	3/12 LN
39	Yashodha	39	Bangalore	53056	lump in Lt breast - 4m	Upper Outer	NO	NO	solitary lump in Lt breast 4X3cm, hard, mobile	nil		Anterior	T2N0M0	NO	NO	nil	invasive ductal CA	5/11 LN
40	Kamala	50	hassan	55087	lump in Rt breast - 6m	Central	NO	YES	solitary lump in Rt breast 5X4cm, hard, mobile	2LN, 3X2		Anterior	T3N1M0	YES	YES	multiple, 2 8X2.5	invasive ductal CA	12/22 LN
41	Ayyamma	57	Bangalore	58047	lump in Lt breast - 1yr	Upper Outer	NO	YES	solitary lump in Lt breast 8X8cm, hard, mobile	2LN, 3X2		Anterior, lateral	T3N1M0	YES	YES	multiple, 2 8X2.5	invasive ductal CA	6/18 LN
42	Latha	43	tumkur	59080	lump in Lt breast - 10m	Upper Outer	YES	NO	solitary lump in Lt breast 8X8cm, hard, mobile, peau d' orange	3LN, 2X3; 1LN 3X3		Anterior; central	T4bN2aM0	YES	YES	colloid CA	7/15 LN
43	Wahida	56	Bangalore	53069	lump in Rt breast- 6m	Upper Outer	NO	YES	solitary lump in Rt breast 5X5cm, hard, mobile	nil			T3N0M0	YES	YES	2 LN, 2.3X2.2	invasive ductal CA	5/15 LN
44	Sabina	52	Bangalore	65355	lump in Lt breast - 8m	Upper Inner	NO	YES	solitary lump in Lt breast 3X4cm, hard, mobile	nil			T2N0M0	NO	NO	nil	invasive ductal CA	4/12 LN
45	Husna banu	58	mysore	71173	lump in Rt breast - 9m	Upper Outer	NO	YES	solitary lump in Rt breast 4X5cm, hard, mobile	nil			T3N0M0	NO	NO	nil	invasive ductal CA	0/11 LN
46	Joycee	60	shimoga	74004	lump in Rt breast - 4m	Upper Outer	NO	YES	solitary lump in Rt breast 6X5cm, hard, mobile	nil			T3N0M0	YES	YES	2 LN, 2.1X2.5	invasive lobular CA	6/18 LN
47	Nalini	54	Bangalore	71911	lump in Lt breast - 4m	Lower Outer	NO	YES	solitary lump in Lt breast 8X10cm, hard, mobile	1LN, 2X3		Anterior	T3N1M0	YES	YES	2 LN, 2.6X2 8	invasive ductal CA	6/14 LN
48	Sharadhamma	66	Bangalore	74681	lump in Lt breast - 6m	Upper Outer	NO	YES	solitary lump in Lt breast 3X2cm,hard,mobile	nil			T2N0M0	NO	NO	nil	invasive ductal CA	0/6 LN
49	Anasuyamma	58	mandya	65296	lump in Rt breast - 3m	Lower Outer	NO	YES	solitary lump in Rt breast 3X4cm,hard,mobile	1LN, 2X2		Anterior	T2N1M0	YES	YES	2 LN, 2.8X2 8	invasive medullary CA	8/12 LN
50	Annapoorna	51	Bangalore	68208	lump in Lt breast - 1m	Upper Outer	NO	YES	solitary lump in Lt breast 6X8, hard, mobile	1LN, 2X2		Anterior	T3N1M0	YES	YES	multiple, 2 8X2 6	Poorly differentiated CA	8/15 LN
51	Nagamma	68	chitradurga	68739	lump in Rt breast - 2m	Upper Outer	NO	YES	solitary lump in Rt breast 6X5cm, firm, mobile	2LN, 3X2		Anterior	T4bN1M0	YES	YES	2 LN, 2.6X1 8	invasive ductal CA	5/15 LN
52	Asha	46	Bangalore	57899	lump in Lt breast - 8m	Upper Outer	NO	NO	solitary lump in Lt breast 8X6cm, firm, mobile, peau d' orange+	nil			T4bN0M0	NO	NO	nil	invasive lobular CA	8/18 LN
53	Susheela	52	Bangalore	50743	lump in Rt breast - 6m	Upper Inner	NO	YES	solitary lump in Rt breast 8X6cm, hard, mobile	1LN, 3X2		Anterior	T3N1M0	YES	YES	multiple, 2 3X2 1	invasive ductal CA	11/22 LN
54	Rajamma	63	Bangalore	61830	lump in Lt breast - 4m	Upper Outer	NO	YES	solitary lump in Lt breast 4X3cm, hard, mobile	nil			T3N0M0	NO	NO	nil	invasive ductal CA	0/10 LN
55	Padma	60	Raichur	61377	lump in Lt breast - 6m	Upper Outer	NO	YES	solitary lump in Lt breast 5X5cm, firm, mobile	1LN, 2X2		Anterior	T3N1M0	YES	YES	1 LN, 2.2X2 3	invasive ductal CA	3/11 LN
56	Yallamma	62	Bangalore	50864	lump in Rt breast - 3m	Upper Outer	NO	YES	solitary lump in Rt breast 7X6cm, hard, mobile	nil			T3N0M0	YES	YES	2 LN, 1.8X2 5	invasive lobular CA	4/18 LN
57	Naganma	66	gulbarga	53509	lump in Rt breast - 9m	Lower Outer	NO	YES	solitary lump in Lt breast 4X5cm, hard, mobile	nil			T3N0M0	NO	NO	nil	invasive ductal CA	2/11 LN
58	Savithramma	60	Bangalore	53733	lump in Lt breast - 2m	Upper Outer	NO	YES	solitary lump in Lt breast 10X8cm, hard, mobile	1LN, 2X2		Anterior	T3N1M0	YES	YES	multiple, 2 8X3 2	invasive ductal CA	9/15 LN
59	Lalitha	47	Bangalore	55635	lump in Rt breast - 2m	Upper Outer	NO	NO	solitary lump in Rt breast 5X4cm, mobile	nil			T2N0M0	YES	YES	1 LN, 2.1X2 3	invasive lobular CA	11/21 LN
60	Arifa	58	chennai	56388	lump in Lt breast - 3m	Upper Outer	NO	YES	solitary lump in Lt breast 6X6cm, hard, nipple retraction+	nil			T3N0M0	YES	YES	multiple, 2.1X2 3	invasive ductal CA	6/15 LN
61	Mahajabeen Banu	62	Bangalore	50127	lump in Lt breast - 8m	Upper Outer	NO	YES	solitary lump in Lt breast 6X6cm, hard, nipple retraction+	nil			T3N0M0	YES	YES	multiple, 2.1X2 2	invasive ductal CA	5/14 LN
62	Sumaiya taj	56	mysore	59227	lump in Lt breast - 2m	Central	NO	YES	solitary lump in Rt breast 4X5cm,hard,mobile	1LN, 2X3		Anterior	T2N1M0	YES	YES	2 LN, 2.6X2 2	invasive medullary CA	8/14 LN
63	Puttarangamma	66	Bangalore	70298	lump in Rt breast - 6m	Upper Outer	NO	YES	solitary lump in Rt breast 5X5cm, firm, mobile, nipple retraction+	nil			T3N0M0	NO	YES	nil	invasive lobular CA	2/11 LN

No.	Name	Age	Place	Hosp. No.	Complaint	Quadrant			Clinical finding	Lymph node	Region	TNM			Outcome
64	Yasmin taj	56	chikmagalur	71206	lump in Rt breast - 6m	Upper Outer	NO	YES	solitary lump in Rt breast 6X8cm, hard, mobile	1LN, 2X2	Anterior	T3N1M0	YES	YES	multiple, 2.3X2.1
65	Shameem begum	54	Bangalore	64289	lump in Lt breast - 6m	Upper Outer	NO	YES	solitary lump in Lt breast 4X3cm, hard, mobile	nil		T2N0M0	NO	NO	1LN, 2.5X2.4
66	Narasamma	62	chikkaballapur	67324	lump in Rt breast - 6m	Upper Inner	NO	YES	solitary lump in Rt breast 5X5cm, hard, mobile	nil		T3N0M0	YES	YES	nil
67	Shailaja	48	Bangalore	76234	lump in Rt breast - 3m	Upper Outer	NO	NO	solitary lump in Rt breast 7X6cm, hard, mobile	nil		T3N0M0	YES	YES	1LN, 1.9X2.3
68	Swapna	47	Bangalore	55675	lump in Lt breast - 1yr	Lower Outer	YES	NO	solitary lump in Lt breast 8X8cm, hard, mobile, peau d' orange+	2LN, 2X2, 1LN 3X3	Anterior, central	T4bN2aM0	YES	YES	multiple, 2.8X2.2
69	Vasanthi	52	hosur	51766	lump in Lt breast - 2m	Upper Outer	NO	YES	solitary lump in Rt breast 3X4cm,hard,mobile	1LN, 2X1	Anterior	T2N1M0	YES	YES	2LN, 2.6X2.5
70	Krishnamma	69	Bangalore	65455	lump in Rt breast - 3m	Upper Outer	NO	YES	solitary lump in Rt breast 6X5cm, hard, mobile	nil		T3N0M0	NO	NO	2LN, 1.8X2.3
71	Mary	53	kolkatta	66543	lump in Lt breast - 1yr	Upper Outer	NO	YES	solitary lump in Lt breast 4X3cm, hard, mobile	nil		T2N0M0	NO	NO	nil
72	Lakshmi devi	67	Bangalore	54332	lump in Rt breast - 6m	Lower Outer	NO	YES	solitary lump in Rt breast 6X6cm, hard, mobile	nil		T3N0M0	YES	YES	2LN, 2.2X2.4
73	Nagamma	70	mandya	65893	lump in Rt breast - 6m	Upper Outer	NO	YES	solitary lump in Rt breast 5X4cm, firm, mobile, nipple retraction+	nil		T3N0M0	NO	NO	nil
74	Chikkamma	63	Bangalore	56998	lump in Lt breast - 2m	Upper Outer	NO	YES	solitary lump in Lt breast 10X8cm, hard, mobile	1LN, 2X2	Anterior	T3N1M0	YES	YES	multiple, 2.8X2.6
75	Venkatamma	65	tumkur	75876	lump in Lt breast - 5m	Central	NO	YES	solitary lump in Lt breast 6X6cm, hard, mobile	3LN, 2X2	Posterior, central	T3N1M0	YES	YES	multiple, 2.1X2.2
76	Girija	53	Bangalore	65778	lump in Lt breast - 7m	Upper Outer	NO	YES	solitary lump in Lt breast 6X4cm, firm, mobile	1LN, 2X2	Anterior	T3N1M0	YES	YES	1LN, 2.5X2.3
77	Kaveramma	67	hassan	59535	lump in Rt breast - 3m	Upper Outer	NO	YES	solitary lump in Rt breast 6X5cm, firm, mobile	nil		T3N0M0	NO	NO	nil
78	Susheelamma	65	Bangalore	65888	lump in Lt breast - 1yr	Upper Outer	NO	YES	solitary lump in Lt breast 10X6cm, firm, mobile, peau d' orange+	nil		T4bN0M0	NO	NO	nil
79	Savithri	54	Bangalore	63887	lump in Rt breast - 4m	Upper Inner	YES	YES	solitary lump in Rt breast 5X6cm, firm, mobile	1LN, 2X2	Anterior	T4bN1M0	YES	YES	2LN, 2.4X1.9
80	Gangamma	66	bijapur	59866	lump in Lt breast - 8m	Upper Outer	NO	YES	solitary lump in Lt breast 8X6cm, hard, mobile	1LN, 3X2	Anterior	T3N1M0	YES	YES	2LN, 2.6X3.1
81	Mangala	58	Bangalore	60266	lump in Rt breast - 6m	Upper Outer	NO	YES	solitary lump in Rt breast 5X6cm, firm, mobile, nipple retraction+	nil		T3N0M0	NO	NO	nil
82	Lalithamma	63	Bangalore	64353	lump in Lt breast - 7m	Upper Outer	NO	YES	solitary lump in Lt breast 5X5cm, firm, peau d' orange+	1LN, 3X2	Anterior	T4bN1M0	YES	YES	multiple, 2.2X2.6

901