



INCIDENCE OF SHOULDER DYSFUNCTION AND LYMPHEDEMA IN OPERATED CASES OF AXILLARY SAMPLING AND COMPLETE AXILLARY DISSECTION IN PATIENTS OF EARLY BREAST CANCER IN A TERTIARY CARE HOSPITAL IN SOUTHERN RAJASTHAN REGION OF INDIA

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ABSTRACT

Background: Among all cases of breast cancer more than 30% cases are diagnosed in early stage and considered early breast cancer. In these cases axillary lymph node metastasis is evaluated by complete axillary lymph node dissection followed by histopathology. It is an essential and gold standard process in the diagnosis, evaluation and treatment of any stage of breast cancer. Axillary sampling may be an alternative procedure with lesser post-procedural complications and better patient outcome. **Methods:** Study included 134 females with early breast cancer, divided into two groups, group 1 of axillary sampling and group 2 of complete axillary lymph nodes dissection. Both groups were followed up for clinical features of lymphedema and shoulder dysfunction. **Results:** Out of 134 cases, 76 were included in group 1 and 58 in group 2. Majority of cases belongs to para-menopausal age group. No association of menopausal status was observed in both groups. Significant difference is observed between both groups for development of symptoms of lymphedema and shoulder dysfunction. **Conclusions:** Our study will help surgeons to decide the selection of axillary sampling over complete axillary lymph node dissection for the patients of early breast cancer.

KEYWORDS : Early breast cancer, axillary sampling, complete axillary lymph node dissection.

INTRODUCTION

Among all cases of breast cancer more than 30% cases are diagnosed in early stage and considered early breast cancer [1]. In these cases axillary lymph node metastasis is evaluated by complete axillary lymph node dissection followed by histopathology. It is an essential and gold standard process in the diagnosis, evaluation and treatment of any stage of breast cancer. Complete surgical removal of axillary lymph nodes may improve the survival time of patient and reduced the morbidity [2].

It also helps in determining the right treatment protocol after finding the exact details of the number of positive lymph nodes. Complete axillary lymph node dissection may results in various clinical manifestations including pain, numbness and infection in arm and chest wall, swelling and lymphedema, restricted shoulder movement and shoulder dysfunction, rarely Stewart-Treves syndrome and lymphangio-sarcoma may present. Increased incidences of these signs and symptoms, choice of complete axillary lymph node dissection as a surgeon is quite challenging now days [3-6]. There are many studies in past have measured morbidity from complete axillary lymph node dissection [6, 9-11].

Axillary sampling may be an alternative procedure with lesser post-procedural complications and better patient outcome [7]. In Axillary sampling only few suspicious lymph nodes are removed to examine for the presence of metastasis [8].

The aim of the present study was to compare the incidence of the shoulder dysfunction and lymphedema in patients underwent complete axillary lymph node dissection and axillary sampling.

MATERIAL & METHODS

Study Design – Cohort Study, Hospital based Study

Place of study –

This study was conducted in general surgery department at Ameswine flu OPD, ward and ICU at American international institute of medical sciences, Udaipur, Rajasthan, during year 2022 & 2023 which included Southern region of Rajasthan (Udaipur, Chittorgarh, Bhilwara, Rajsamand, Dungarpur, Banswara, Pratapgarh districts).

Sample Size -

This study included 134 female patients of 20-65 year age group who were diagnosed with early breast cancer between Jan 2022 to December 2023.

Study Population –

This study included 134 female patients of 20-65 year age group who were diagnosed with early breast cancer between Jan 2022 to December 2023.

Inclusion Criteria :

Patient with unilateral disease, clinical stage I and II, only new cases and willing to participate in study were included in study.

Exclusion Criteria :

Patients less than 20 years and more than 65 years age, with bilateral disease, with disease recurrence, with co-morbidities and refusal to participate were excluded in the study.

Selection of Complete axillary lymph node dissection and axillary sampling was depending upon tumor size, tumour site, clinical symptoms and patient's desire.

Patients were divided Into two groups:

Group 1. Patients who underwent Axillary sampling. Total 76 patients were included in this group.

Group 2. Patients who underwent Complete axillary lymph node dissection. Total 58 patients were included in this group.

All surgeries were performed in a one surgical unit. In the post operative period all patients were provided physiotherapy support to perform the arm exercises to maximize the range of shoulder movements.

Patients were given adjuvant treatment depending upon the size of tumor, lymph node positivity, type of surgery, hormone receptor and menopausal status.

Data Collection –

The patients were followed up in OPD after completion of their adjuvant treatment. During their follow up visits they were examined and interviewed regarding signs and symptomatology on a 5-point likert scale. On the likert scale scores of 1–2 indicated mild symptoms, 3–4 indicated moderate symptoms and 5 indicated severe symptoms.

Correlations between symptoms were determined by logistic regression.

Data was entered in a standardized pre-structured questionnaire including the demographic and clinical data of patients like age, residence, menopausal status, clinical signs & symptoms, duration of symptoms, clinical staging and HPE report [size, type and grade of tumor, number of lymph nodes removed, number of lymph nodes positive for metastasis], histo-pathological stage, receptor positivity status and adjuvant treatment received.

Ethical issues –

Ethical clearance from ethical committee has been obtained prior to beginning of study

Data Analysis –

Data was analysed by using excel sheet and SPSS. Single t test was used to compare the difference between both groups.

RESULTS

Out of 134 patients of early breast cancer, 76 & 58 patients were included in group 1 and group 2 respectively. All patients were between 20 and 65 years, mean age of all 134 patients was 46.45 ± 10.54 years.

Majority of patients 51 (38.05%) fall in 41-50 years age group (Chi square, p value < 0.05). Mean age and standard deviation in group 1 and group 2 are 46.95 ± 11.07 years & 45.81 ± 9.95 years respectively [single t-test, p value = 0.5396, not significant]. (Table 1)

Table 1: Age wise distribution of cases of both groups

S. No.	Age Group (in years)	Group 1 (n = 76)		Group 2 (n = 58)		Total (N = 134)
		n	(%)	n	(%)	
1.	20 -30	6	7.89%	4	6.90%	10
2.	31-40	16	21.05%	12	20.69%	28
3.	41-50	25	32.89%	26	44.83%	51 (38.05%)
4.	51-60	20	26.32%	13	22.41%	33
5.	>60	7	9.21%	3	5.17%	10
Total		76 (56.71%)		58 (43.29%)		134 (100%)
Mean		46.95 years		45.81 years		p value
SD		11.07 years		9.95 years		0.5396

In our study, 60 [44.78%] patients were premenopausal and 74 [55.22%] were post menopausal.

In group1, pre menopausal patients were 33 [43.42%] and postmenopausal patients were 43 [56.58%] while in group 2, menopausal patients were 27 [46.55%] and postmenopausal patients were 31 [53.45%]. This difference was not statistically significant (Fischer's test, p value 0.7295). (Table 2)

Table No. 2 Menopausal status of cases of both groups

S. No.	Menopausal status	Group 1		Group 2		Total		P value
		No.	%	No.	%	No.	%	
1.	Pre-menopausal	33	55.00	27	45.00	60	100	0.7295
2.	Post-menopausal	43	58.11	31	41.89	74	100	
	Total	76		58		134	100	

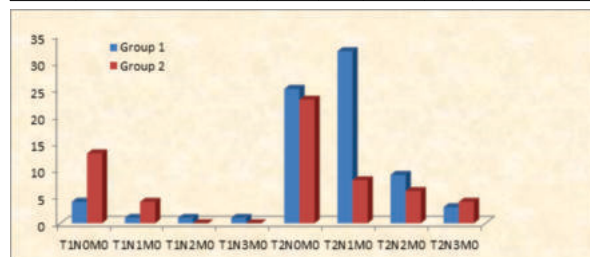


Figure No. 1 Distribution of subjects according to TNM staging (n=134)

Table No. 3(a) Distribution of patients according to signs and symptoms

Symptoms	Likert scale	Group 1 (n = 76)		Group 2 (n = 58)		Total (N = 134)	
		Number	(%)	Number	(%)	Number	(%)
Lymph-edema	0	51	67.11	34	58.62	85	63.43
	1	17	22.37	6	10.34	23	17.16
	2	5	6.58	10	17.24	15	11.19
	3	3	3.95	6	10.34	9	6.72
	4	0	0.00	2	3.45	2	1.49
	5	0	0.00	0	0.00	0	0.00
p value < 0.05							
Shoulder Dysfunction	0	59	77.63	41	70.69	100	74.63
	1	12	15.79	5	8.62	17	12.69
	2	4	5.26	8	13.79	12	8.96
	3	1	1.32	4	6.90	5	3.73
	4	0	0.00	0	0.00	0	0.00
	5	0	0.00	0	0.00	0	0.00
p value < 0.05							

Table No. 3(b) Distribution of patients according to signs and symptoms

Symptoms	Severity	Group 1 (n = 76)		Group 2 (n = 58)		Total (N = 134)	
		Number	(%)	Number	(%)	Number	(%)
Lymph-edema	Mild	68	89.47	40	68.97	108	80.60
	Moderate	8	10.53	16	27.59	24	17.91
	Severity	0	0.00	2	3.45	2	1.49
p value < 0.05							
Shoulder Dysfunction	Mild	71	93.42	46	79.31	117	87.31
	Moderate	5	6.58	12	20.69	17	12.69
	Severity	0	0.00	0	0.00	0	0.00
p value < 0.05							

Data of symptoms of both groups with likert scale was mentioned in **Table No. 3(a)** and restructured according to mild, moderate and severe rating in **Table 3(b)**. Mild symptoms of lymphedema were seen in 108 cases (68 cases in group 1 while 40 cases in group 2) (statistically significant, p value < 0.05). Mild symptoms of shoulder dysfunction were seen in 117 cases (71 cases in group 1 while 46 cases in group 2) (statistically significant, p value < 0.05). Moderate to severe symptoms of lymphedema was seen in 26 cases (8 cases in group 1 while 18 cases in group 2) (statistically significant, p value < 0.05). Moderate to severe symptoms of shoulder dysfunction was seen in 17 cases (5 cases in group

1 while 12 cases in group 2) (statistically significant, p value < 0.05).

DISCUSSION & CONCLUSION

In present study it is found that majority of cases of early breast cancer belong to para-menopausal age group (38.05% cases in age group 41-50 years age group, p value < 0.05) which was a significant finding of our study. No mean age variation was observed in both the groups.

In our study no association with menopausal status for the selections of group has been observed.

Our study findings suggest that incidence of lymphedema and shoulder dysfunction are lower in group 1 that belongs to patient underwent axillary sampling in compare to group 2 that belongs to patient underwent complete axillary lymph node dissection.

Acknowledgements

Author acknowledge the help of Dr. Yogesh Kumar Singhal, Associate Professor, Department of community medicine of American international institute of medical sciences, Udaipur, Rajasthan, India

Declarations

Funding: None

Conflict of interest: Not declared

Ethical approval: Yes

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