

Original article**PATTERN OF PRESENTATION AND MANAGEMENT OF CA BREAST- A DEPARTMENTAL AUDIT AT REGIONAL CANCER CENTRE OF KASHMIR – AN UNMET NEED OF SENTINEL LYMPH NODE BIOPSY (SNB)**

Ab Wahid Mir, Shah Naveed, Altaf Gauhar Haji, Sheikh Zahoor, Azhar Jan Batoo

Abstract**Introduction /Background /Objective :**

Breast carcinoma is a serious health problem and is among the major health issues in India. SNB is standard of care for pathological staging of cN0 axilla in patients with early breast cancers with low morbidity and without compromising the oncological outcome. The technique could not be performed by us in view of lack of facilities. Our objective was to audit our data of carcinoma breast and to analyse the unnecessary axillary lymph node dissection (ALND) done due to non-availability of facilities for sentinel node biopsy.

Materials and Methods:

We retrospectively analysed the prospectively maintained patient data base of 152 patients with malignant breast lumps treated at a tertiary care teaching hospital in the department of surgical oncology over a period of 4 years. Present study describes the clinicopathological features like age at presentation, clinical stage at presentation and incidence of regional lymph node involvement and distant metastases and breast conserving surgery (BCS) rate among the breast cancer patients at Sher-I-Kashmir Institute of Medical Sciences, a tertiary care centre, of Srinagar Jammu & Kashmir, India.

Results:

Out of 152 patients, 40 patients were subjected to surgery following NACT and 112 patients underwent upfront surgery. Overall N0 axilla was found in 62 (40%) of patients. Among 40 patients of NACT group, N0 axilla was found in 10 patients (25%), while as 112 patients underwent upfront surgery and N0 axilla was found in 52 (46.42%) out of 112 patients.

Conclusion:

Because of lack of Sentinel Lymph Node biopsy (SNB) facilities in our centre, unnecessary axillary lymph node dissection was performed in 46% of patients. Application of SNB technique in this group of patients thus would have reduced the morbidity associated with axillary lymph node dissection and therefore needs to be incorporated as a part of management of breast cancer patients.

JK-Practitioner2021;26(1):28-33**Introduction**

Cancer is one of the most dreaded diseases in the world. Of the 18.1 million new cases diagnosed every year, more than half are from developing countries. According to the latest statistics available, about 10 million people will die annually by the year 2020 due to cancer, and 70% of them from the developing world. The incidence of cancer is rising every year, and this is attributed to the changes in lifestyle and increase in life expectancy^{1,2,3}.

According to Globocan 2018, total number of new cases of female breast cancer diagnosed are 162468 which comprises 27.7% of all female malignancies. As per data published by Global cancer observatory 2018, the breast cancer has highest age standardised incidence (24.7%) and highest mortality rate (13.4%). India, United States and China collectively accounts for almost one third of the global breast cancer

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Key Words:

Breast cancer, Lymph node, Metastasis, Breast conserving surgery, Sentinel lymph node biopsy

burden. Breast carcinoma is a serious health problem and is among the major health issues in India. The surgical management of breast carcinoma has evolved tremendously when breast conserving surgery was first described in 1924, which has become a standard surgical procedure in some institutions of advanced countries⁴. It has a relatively early age presentation in our part of the world⁵. India is facing challenging situation due to 11.54% increases in incidence and 13.82% increase in mortality due to breast cancer during 2008–2012^{6,7}.

The survey carried out by Indian Council of Medical Research (ICMR) in the metropolitan cities during 1982 to 2005 has shown that incidence of breast cancer has almost doubled⁸.

In a study published by Rasool MT et al, carcinoma of the breast was second most common cancer in women in regional cancer centre of Kashmir and comprised of 14.6% of all female malignancies with a median age of 45 years⁹. Sentinel lymph node biopsy technique requires combination of dyes (isosulphan blue, patent blue violet) and Tc99 labelled radiolabelled Sulphur colloid with the use of hand held gamma probe. As the nuclear medicine facilities and dyes are not available in all the centres of India, Methylene blue can be used an alternative with acceptable identification rate of Sentinel lymph node in low resource centres¹⁰. However unfortunately SNB was not performed in our patients.

Material and Methods

It's a retrospective study of prospectively maintained patient data base of 152 patients with malignant breast lumps treated at a tertiary care teaching hospital in the department of surgical oncology over a period of 4 years. A total of 182 patients were operated, but records of only 152 patients could be retrieved. All patients were admitted through outpatient department and were thoroughly examined and investigated. Treatment offered was based on triple assessment and ranged from breast conserving surgery (BCS) to toilet mastectomy depending upon the stage of disease. Core biopsy was performed in all patients to confirm histopathology and for Immunohistochemistry (IHC). Patients with early breast cancer were subjected to upfront surgery in the form of BCS or modified radical mastectomy as per indications and or wishes of the patients. Patients with locally advanced breast cancer were planned for neoadjuvant chemotherapy (NACT) followed by surgery. The group of patients who received NACT and opted for BCS were subjected to surgery before completion of NACT i.e. after four cycles of chemotherapy with continuous monitoring of lump

in order to avoid complete resolution of the lump, as facilities of clip placement was not available at our centre. All the patients underwent axillary lymph node dissection (ALND). The extent of ALND was up to discretion of operating surgeon depending on operative findings of axilla. SNB could not be applied in view of non-availability of the facility. All the patients who underwent BCS received EBRT to breast. The variables studied were recorded on a proforma and analysed on statistical software.

RESULTS

Youngest patient of the series was aged 21 years whereas the oldest was aged 81 years. Median age of our patients is 47 years. T1 lesion was present in 20 patients (13.15%), T2 was the most common T stage present in 92 patients (60.52%), T3 was present in 17 patients (11%) and T4 was present in 23 patients (15.13%). Majority of the cases belonged to N0 (40.70%) overall, 42 patients (27.63%) had N1, 35 patients (23.02%) had N2 and 13 patients (8.55%) had N3 nodal disease. Stage wise distribution of cases reflected that Stage IIA was the most common stage at presentation in 43 patients (28.28%) followed by Stage IIB 28 patients (18.42%), Stage IA had 15 patients (9.86%), Stage IIIA had 25 patients (16.44%), Stage IIIB had 24 patients (15.78%) and Stage IIIC had 12 patients (7.89%) (Table 1). 5(3.28%) patients had metastases out of which all 5 patients had bone metastases at the time of diagnosis and 2 of them had liver metastases. Surprisingly none of our patient was diagnosed to have stage 0 disease. Among BCS group two patients had positive margin, one with focal positivity and another diffuse margin positivity. Left breast was involved in 80 (52.63%) and right breast in 72(47.36%) patients. Lymph node yield in early breast cancer was 14.39 per patient and 10.33 per patient following NACT. Out of 152 patients, 40 patients were subjected to surgery following NACT and 112 patients underwent upfront surgery. Overall N0 axilla was found in 62 (40%) of patients. Among 40 patients of NACT group, N0 axilla was found in 10 patients (25%), while as 52 out of 112 patients who underwent upfront surgery, N0 axilla was found in 52 (46.42%) of patients. Most common histology was infiltrating ductal carcinoma (94.7%) (Table 2). 112 (74%) patients underwent modified radical mastectomy, 35 (23%) patients underwent breast conserving surgery and 5 patients underwent toilet mastectomy. All patients were subjected to Axillary lymph node dissection (ALND) because of lack of facility for Sentinel lymph node biopsy (SNB). Luminal A was the most common molecular subtype, comprising of 87 patients (57%) followed by triple

negative (27 patients 17.70%), Luminal B and Her 2 enriched each with 19 patients (12.5%) (Figure1). Histological grade I was found in 20(13.15%), grade II in 56(36.84%), grade III 41 (26.97%) of patients. Histological grading was not available in 35(23.02%) of patients. Majority of patients had LVI positive disease (53.2%) (Table 3).

Table 1- Depicting Laterality, TNM staging, Surgeries and Grade of Tumour

Characteristic	% (n)
Laterality	
Right	47.3(72)
Left	52.6(80)
TNM	
T1	13.1(20)
T2	60.5(92)
T3	11(17)
T4	15.1(23)
N0	40.7(60)
N1	27.6(42)
N2	23(35)
N3	8.5(13)
M1	3.2(5)
SURGERIES	
MRM	74(112)
BCS	23(35)
Toilet Mastectomy	3.2(5)
GRADE	
I	13.5(20)
II	36.8(56)
III	26.9(41)
NA	23(35)

Table 2- Depicting Histopathology of Breast Tumours

Histology	% (n)
Infiltrating Ductal Ca	94.7(144)
Infiltrating Lobular Ca	0.03 (5)
Medullary Ca	0.01(2)
Mucinous Ca	0.006(1)

Table 3: Depicting LVI and PNI

LVI	%(n)
+ve	53.2(81)
-ve	27.6(42)
LVI	%(n)
NA	29(19.07%)
PNI	
+ve	18.4(28)
-ve	42.1(64)
NA	39.4(60)

DISCUSSION

Breast cancer still continues to be a major killer of women all around the world. The incidence and pattern of this disease differ significantly between developed and underdeveloped countries^{11,12}.

In our study the median age of patients at presentation was 47 years. Raina V et al studied the breast cancer clinical profile in northern India and reported a median age of presentation as 47 years. They further showed that incidence rate in India begins to rise in early thirties of age and peaks at 50-64 years of age. They compared it with data from United States, where peak incidence rate is at age of more than 75 years. This lower age at the time of diagnosis is reported for other cancers also in India, the underlying reasons are not well understood but it is supposed that there is under-diagnosis as well as underreporting of cases in the elderly people¹³⁻¹⁵. Chopra B et al in a study found that there were two peaks in the age group at the time of diagnosis of breast cancer i.e. 41-50 years age group and 51-60 years age group¹⁶.

The peak age group of 41-50 years reflects that the disease affects younger age group in Indian population in comparison with the western world. They also highlighted that data from Delhi in India during 2001 to 2003 as per National Program of Cancer Registry of the Indian Council of Medical Research which showed that among 3777 cases of breast cancer analysed, 44.6% cases were less than 54 years of age. Goel et al and Saxena et al have also reported similar results which further reinforce the fact that there is a rising incidence of breast cancer in younger age groups in the urban population of India¹⁷⁻²⁰. Raina V et al study has reported that 45% patients presented with Stages III and IV of breast cancer disease. Similarly, another study found that 45.7% patients presented in Stages III and IV breast cancer²¹.

Stage Distribution

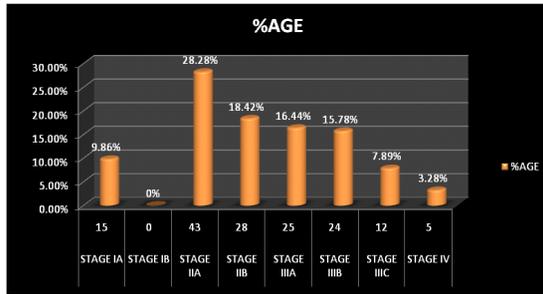


Figure 1

N Group

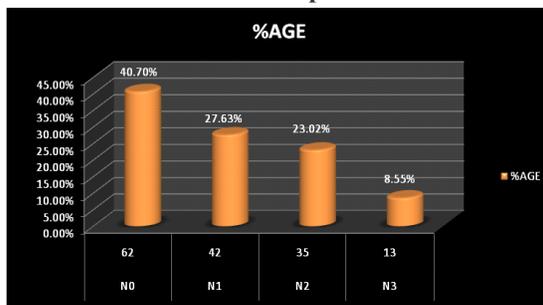


Figure 2

Nodal Yield

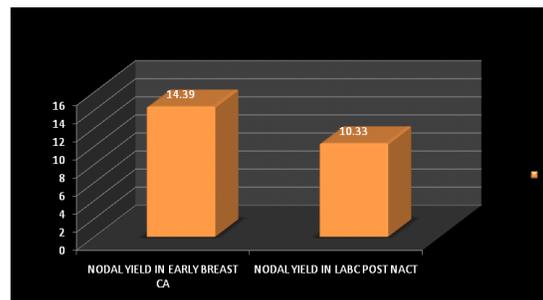


Figure 3

Molecular Sub-Types

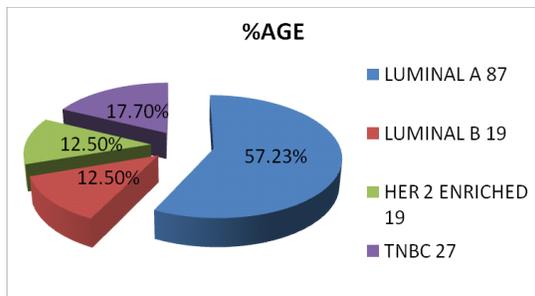


Figure 4

But in our institute, Stage IIA was the most common stage at presentation in 43 patients (28.28%) followed by Stage IIB in 28 patients (18.42%). In our study 25 patients (16.44%) had Stage IIIA and 24 patients (15.78%) had Stage IIIB. Saxena et al in their study observed that Stage IIIB was the most common stage at presentation i.e. in 36.1% cases. Breast conserving rate was low (23%) as compared to western countries in present era where the BCS rate is more than 70%. In a large study conducted by Carlos A et al, a western study, BCS was carried out in 73.3% of patients²². However, our BCS rate is comparable to rest of Indian parts where BCS rate ranges from 38% to 46%²³. In our study left breast was involved in 80 (52.63%) and right breast in 72(47.36%) patients. The average lymph node yield was reported to be 14.39 per patient in patients subjected to upfront surgery and 10.33 per patient in patients subjected to axillary lymph node dissection following neoadjuvant chemotherapy. Kiricuta CI and Tausch J recommended at least 10 lymph nodes for pathological evaluation in a study of 1446 complete axillary dissections in patients with carcinoma breast²⁴. Although observations suggest that nodal yield is low following NACT, but there is no clear data whether NACT influences the nodal yield²⁵. However, in our study the lymph node yield following systemic therapy is 10.33. 10 out of 40 patients who underwent surgery following NACT have pathological complete response (cPR). A study conducted by H Narendra and colleagues found cPR in 36.5% of their patients²⁶. In our study Luminal A was the most common molecular subtype (57%) followed by Triple negative comprising of 17.70%. S Hassan and colleagues found Luminal A in 75% and triple negative in 17.2% of their patients²³.

SNB is standard of care for pathological staging of cN0 axilla in patients with early breast cancers with low morbidity and without compromising the oncological outcome²⁷. The technique could not be performed by us in view of lack of facilities.

Limitations of our study include retrospective hospital-based study with small sample size. So, the findings cannot be generalized over a diverse geographical area. Furthermore, ALND has been performed unnecessarily in at least 46% of patients because of non-availability of SNB facilities which could have been avoided by use of SNB technique.

CONCLUSION

Majority of patients in our part of Asia present with Stage II breast carcinoma. Advanced breast disease is common in younger patients belonging to underprivileged and remote rural areas. The age group in majority of the patients was younger as

compared to Western world and this finding is in line with data from India and other Asian regions. BCS rate is low in our part of the world. Axillary lymph node dissection is being performed unnecessarily in majority of patients because of non-availability of SNB facilities. SNB should be incorporated in to routine practice as and when feasible. Proper counselling regarding BCS is needed. Every woman with operable breast cancer should be offered option of breast conservation if there are no standard contraindications.

Declaration

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