consideration for characteristics of primary tumors that make nodal involvement likely. The evolving role of sentinel lymph node biopsy must include factors which modifying tumor behavior like the grade, ER status, Her2 neu status and Cerb 2 will have an influence on the prediction of Axillary Lymph node involvement. In these patients, a limited ALND or should identify characteristics of primary tumors predictive of lymph nodal metastases. In addition to identifying patients at low risk of axillary metastases, we conducted a study to identify characteristics of primary tumors highly associated with axillary lymph node metastases by comparing various demographic and tumor characteristics against nodal status. Methodology: 288 cases of the axillary dissection specimens of all infiltrating duct carcinoma cases who underwent MRM in Government Medical College, Thrissur for 5 consecutive years were studied (n=256). Pathology was interpreted by a select group of Pathologists and then reanalyzed by another set to avoid bias. Various other aspects were studied including age distribution, histology, tumor size and nodal status. Analysis was done using SPSS 26 software.

Results: The mean age of the study population was 50.58 years. The most common histopathological type encountered was Invasive ductal carcinoma – NOS (89.58%). Most of the patients (78.29%) belonged to T2 stage, with most patients (76.39%) having 1-3 nodes involved. On analysis, a significant association between T status (T2, T3) and N status (p = 0.001) was found. However, there was no significant correlation between age against tumor size or nodal status (p = 0.528, and p = 0.614 respectively).

Conclusions: This study found that while tumor size is independently can predict the amount of axillary lymph node metastasis especially in T2 and T3 tumors, there is no significant predictor value for age in predicting the nodal status or tumor size in invasive ductal carcinoma. However, the factors which modifying tumor behavior like the grade, ER status, Her2 neu status and Cerb 2 will have an influence on the prediction of Axillary Lymph node involvement that offers further scope of prospective research.

ABSTRACT

Background: As breast cancer remains a major fraction of cancer cases worldwide, the options for minimalizing postoperative morbidity and mortality remain an area for ardent research and improvement. The ability to identify patients at low risk of axillary metastases, would be of great value in limiting extensive axillary dissection which causes significant morbidity, thereby improving the postoperative quality of life amongst patients. We conducted a study to identify characteristics of primary tumors highly associated with axillary lymph node metastases by comparing various demographic and tumor characteristics against nodal status.

Methodology: 288 cases of the axillary dissection specimens of all infiltrating duct carcinoma cases who underwent MRM in Government Medical College, Thrissur for 5 consecutive years were studied (n=256). Pathology was interpreted by a select group of Pathologists and then reanalyzed by another set to avoid bias. Various other aspects were studied including age distribution, histology, tumor size and nodal status. Analysis was done using SPSS 26 software.

Results: The mean age of the study population was 50.58 years. The most common histopathological type encountered was Invasive ductal carcinoma – NOS (89.58%). Most of the patients (78.29%) belonged to T2 stage, with most patients (76.39%) having 1-3 nodes involved. On analysis, a significant association between T status (T2, T3) and N status (p = 0.001) was found. However, there was no significant correlation between age against tumor size or nodal status (p = 0.528, and p = 0.614 respectively).

Conclusions: This study found that while tumor size is independently can predict the amount of axillary lymph node metastasis especially in T2 and T3 tumors, there is no significant predictor value for age in predicting the nodal status or tumor size in invasive ductal carcinoma. However, the factors which modifying tumor behavior like the grade, ER status, Her2 neu status and Cerb 2 will have an influence on the prediction of Axillary Lymph node involvement that offers further scope of prospective research.

KEYWORDS

CARCINOMA BREAST, INFLTRATING DUCT CARCINOMA, TUMOUR SIZE, AXILLARY LYMPH NODE METASTASIS.
RESULTS
The age distribution statistics revealed that major bulk of the tumors fell into the age group of 40-50 and 50-60 accounting for 30.5% and 27.43% respectively.

Approximately 18% of the tumors belong to patients below 40 years. The mean age group of the patients was 50.58yrs the youngest patient was 27 years and the eldest 80 yrs old. (Table 1). Of the 288 patient who were included in the study 256 patients belonged to Invasive ductal carcinoma. Not otherwise specific accounting to 89.58% of the tumors. 3.13% (9/288) infiltrating lobular carcinoma. The next common type was medullary carcinoma which accounted for 2.08% of the total tumors. Analyzing the histological variants it was found that the most common type was Infiltrating duct carcinoma (89.58%) (Chart 1) which were analyzed for tumor nodal correlation. (N= 256 Cases)

Since this study is done mainly on MRM specimens most of the patients 78.29% (202) belonged to T2 stage. T3 tumors accounted for 15.63% (45) patients and T1 6.94% and less than 1% of the tumors belonged to T4 stage. T4 tumors were so not included in the analysis of the relation.

The natal status distribution was as follows in the entire data with 76.39% of patients had 1-3 nodal involvement, 15.63% of patients had 4-6 lymph nodes involved N3 and more in less than 2% of the specimens. (chart 2)

On analyzing the relationship between the pT and pN status to interpret whether T status can predict the chance of involvement of N and the N status was analysed using the Chi-Square test using SPSS software version 26 the following results were obtained (Table 2) The value shows there is a significant association between T status and N status as the chi square test was significant (0.001).

| Table 2 Tumor Size * Nodal Status Crosstabulation (P Value 0.001) |
|---------------------------------|-------------------|-----------------|------------------|-----------------|-----------------|
| NODAL STATUS                   | Total             | p Value         |
| TUMOR SIZE                     | No   | N1   | N2   | N3   | Total |
| T1                             | 0    | 4    | 3    | 0    | 16    | 0.001          |
| T2                             | 43   | 93   | 48   | 18   | 202   |                |
| T3                             | 2    | 14   | 16   | 6    | 38    |                |
| Total                          | 54   | 111  | 67   | 24   | 256   |                |

On analyzing the correlation using SPSS Version 26 we could not find a significant association of age being an independent predictor for predicting the T Status. (p Value 0.528) Similarly we also analyzed the correlation between Age and N status independent analyzing whether age is an independent predictor for involvement of Nodes and the N status. On analyzing the correlation between the N status and Age using statistical methods using SPSS software version 26 there was no significant association 0.614 (Sig:0.05)

DISCUSSION:

Axillary node involvement is the most significant and durable prognostic factor for women with breast cancer. This is especially true for women with T1 cancers because nodal metastases double the risk of distant disease and influence therapeutic decisions. Axillary lymph node involvement is found in 21% to 42% of patients with T1 lesions. (9, 10) Variability in the incidence of nodal metastases is related to the number of lymph nodes removed and the histopathology methods used to find metastases. The identification of characteristics of the primary tumor that are associated with nodal metastases might cause the surgeon to perform a more extensive axillary dissection and the pathologist to use methods of examining the nodes that increase the likelihood of finding metastasis disease.

The risk of involved nodes increases with increasing tumor size as depicted by many series but no studies are reported the same in India. The incidence of LN metastasis is quoted as Three percent to 11% of T1a, 13% to 17% of T1b, and 26% to 35% of T1c have lymph node metastases, irrespective of the presence or absence of lymphatic invasion. (11,12)

when we our data using Chi-square test there was a significant association between the T and N values. The increase in the size of primary tumour directly predicts the chance of involvement of axillary lymph nodes and also the N status independently in T2 and T3 tumours substantiating the above study on T1 tumours.

As tumors increase in size, they are more likely to exhibit both lymphatic invasion and positive lymph nodes. One might speculate that tumor size predicts nodal disease simply because it also predicts lymphatic invasion, which remains occult because of pathologic sampling issues. Thus, larger tumors may predict node positivity because of occult histologic lymphatic invasion.

In our study, 24% of women younger than 40 had involved nodes. We did not find an independent association of age and the N status. This study of invasive breast cancers found that tumor size, is independently associated with axillary lymph node metastasis in the NOS type of infiltrative ductal carcinoma.

The independent association of age with lymph node metastases and, in other studies, with poor prognosis has not been explained by the association of age with other prognostic variables. These results suggest that surgeons and pathologists should be diligent and thorough in searching for lymph node metastases in young patients with large tumors.

T2 breast cancer had a higher probability to metastasize to axillary lymph nodes compared to T1 stage tumours. There are various other factors determines the axillary LN involvement as Gurjeet Kaur, MMed (Path) from University Sains Malaysia Penang Malaysia highlights the independent predictor value of the Tumour size to the axillary involvement but there are various other factors which influence that and thus the over all survival. In their study about 50% of infiltrating ductal carcinomas was poorly differentiated (grade 3) with a tendency of higher grade tumours to metastasize to axillary lymph nodes. This suggests that histologic grade would be a valuable prognostic factor in breast cancer. However other reports show conflicting and inconclusive results which at the moment does not support the addition of histologic grade into the AJCC staging system for breast cancer (13).

Many studies did not find any significant correlation between nodal positivity and ER, PR or c-erbB-2 status in invasive breast cancers of <2 cm size. (14). A negative relationship between ER and c-erbB2 expression has been reported in other studies as well but this could not be substantiated in our study as we did not consider these factors as well.

This study of invasive breast cancers found that tumor size, is independently associated with axillary lymph node metastasis in the NOS type of infiltrative ductal carcinoma and this study is presently continued to assess the confounding variables which can influence the nodal metastasis in carcinoma breast.

CONCLUSION:
This study of invasive breast cancers found that tumor size, is independently associated with axillary lymph node metastasis in the NOS type of infiltrative ductal carcinoma. that the study shows a
significant correlation between Tumor size and the Axillary Lymph node status independent of other factors. There was no significant predictor value for age in predicting the Axillary Nodal status and Tumor size. However, the factors which modifying tumor behavior like the grade, ER status, Her2 neu status and Cerb 2 will have an influence on the prediction of Axillary Lymph node involvement that offers further scope of prospective research.

REFERENCES