ABSTRACT

BACKGROUND

Breast carcinoma is a heterogeneous disease. It is the most common malignant tumor and the leading cause of carcinoma death in women. It accounts for 23% of all cancers in women globally. Infiltrating ductal carcinoma is the most common type of invasive breast carcinoma (75–80% of all mammary invasive carcinomas). Functional lymphatics at the tumor margins are responsible for lymphatic metastasis. Ability of the tumor to invade the adjacent tissue has been proposed to be an important prognostic factor in many recent articles. The prognostic significance of adipose tissue invasion at the tumor margins has not been evaluated fully. Marginal ATI may lead to a larger contact area between cancer cells and the peritumoral functional lymphatic endothelium increasing the chances for lymphovascular invasion. Present study is intended to evaluate the adipose tissue invasion at tumor margins, lymphovascular invasion and its prognostic significance in carcinoma breast.

METHODS

The present study was a prospective study conducted at the Department of Pathology, Madurai medical college during the period of July 2015 to July 2017. A total sample of 100 cases of breast cancers, diagnosed as invasive ductal carcinoma NOS were analyzed during this period. Clinical and morphological details of cases were recorded according to the proforma which included patients name, age, biopsy number, clinical history, investigations and treatment
done, gross description, histological factors, hormone receptor status, st. gallens, 10 year survival rate prediction by PREDICT. The observations were compared with other studies and inferences drawn.

RESULTS

In this study conducted on 100 cases, 74% cases showed presence of ATI. Out of the total cases of adipose tissue invasion 49% belonged to the age group of 41-60 years. 54% cases of adipose tissue invasion had Bloom-Richardson grade – II. 58 case out of 100 showed lymph node metastasis. 48.6% of node positive cases had adipose tissue involvement. Statistically significant association was found between these factors (p value : 0.0060). 25% cases with adipose tissue invasion showed positivity for estrogen receptor and showed a significant association with p value 0.0151. No statistical correlation was observed between progesterone receptor status and adipose tissue invasion. 100% cases of ATI belonged to average to high risk group according to St Gallen criteria. Case without ATI showed a higher mean 10 year survival rate compared to cases with ATI. 45% of the present study cases studied showed lymphovascular invasion.

CONCLUSION

Cases which are positive for ATI showed significant increase in lymphnode metastasis and a lower 10 years survival rate. Thus its presence indicates tumour aggressiveness and adverse outcome. Marginal adipose tissue invasion and lymphovascular invasion can be used together as a prognostic
marker to predict the tumor aggressiveness and to formulate therapeutic strategies. More studies and investigations are required for substantiating the significance of ATI and its influence in the prognosis of breast cancer.

**KEYWORDS**

Breast carcinoma, ATI – Adipose tissue invasion, LVI – Lymphovascular invasion