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Case Report

Tubulo- lobular carcinoma: a rare mixed invasive carcinoma of breast

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ABSTRACT

Tubulo-lobular carcinoma is a rare variant of invasive carcinoma of breast, exhibiting the features of both tubular and lobular component. It accounts for about 1% of mammary carcinomas. Study report a case of 39-year-old female with lump in the left breast for 6 months. Histopathologically it was diagnosed as tubulo-lobular carcinoma of breast. Hence histopathology plays an important role in diagnosis and treatment of mammary carcinomas.

Keywords: Apocrine changes, Lobular carcinoma, Tubular carcinoma

INTRODUCTION

Tubulo lobular carcinoma (TLC) is a rare variant of invasive lobular carcinoma of breast with both ductal and lobular pattern. Fisher et al, reported only 24 cases of tubulo-lobular carcinoma among 1665 invasive cancer breast in the National Surgical Adjuvant Cancer Breast review.[1] They described this tumor as those with small tubules of tumor cells along with cords of cells in a linear arrangement typical of lobular carcinoma. Because this tumor has both features of tubular carcinoma as well as lobular carcinoma but with a poorer prognosis compared to tubular carcinoma it was determined as a variant of lobular carcinoma rather than a variant of ductal carcinoma. We report a case of tubulo-lobular carcinoma described for the first time in our institute over a period of 5 years in a 39-year-old female patient.

CASE REPORT

A 39-year-old female presented to the surgical out - patient department with complaints of lump in the Left breast since 6 months. It was insidious in onset and painless. There was no significant past and family history. On examination, the lump measured 4x3 cm in the upper outer quadrant of the left breast.

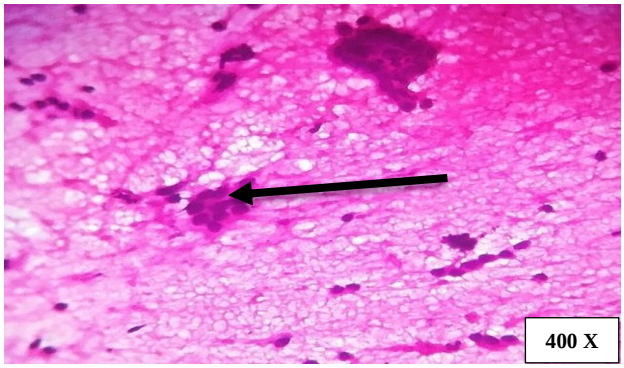

Figure 1: FNAC picture showing both ductal and lobular components (Arrow shows single file pattern). H and E stain x 100.

Right breast was unremarkable. Fine needle aspiration cytology was done from the left breast swelling which showed both monolayered and tightly cohesive sheets of benign ductal epithelial cells and background showed myoepithelial cells; apart from these normal benign

ductal epithelial cells, there were also clusters of ductal epithelial cells with a slight degree of dis-cohesiveness, exhibiting moderate nuclear atypia with focal cribriform pattern. Hence, the differential diagnoses of atypical ductal hyperplasia and atypical lobular hyperplasia was given (Figure 1).

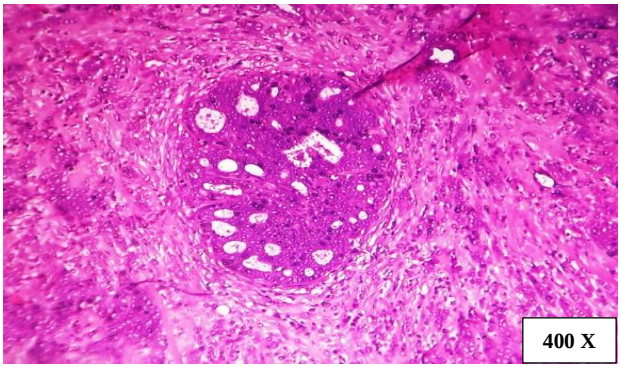

Figure 2: Focal area shows DCIS - cribriform pattern in between the lobular and tubular pattern (H and E stain, x 100).

Excision biopsy was done and histopathology showed a neoplasm composed of round to oval cells arranged in cribriform pattern (Figure 2), cords and tubules along with single file pattern infiltrating the surrounding stroma (Figure 3).

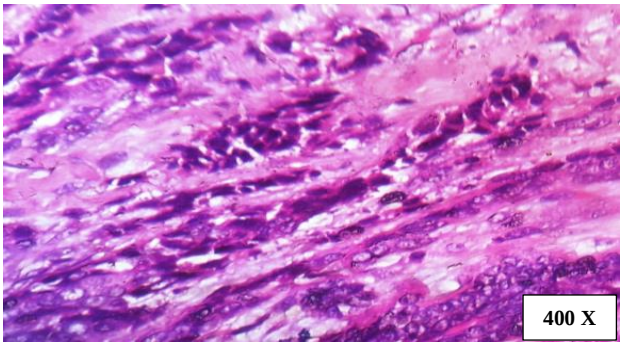

Figure 3: Shows tumor cells arranged in single file pattern infiltrating the stroma (H and Ex400x).

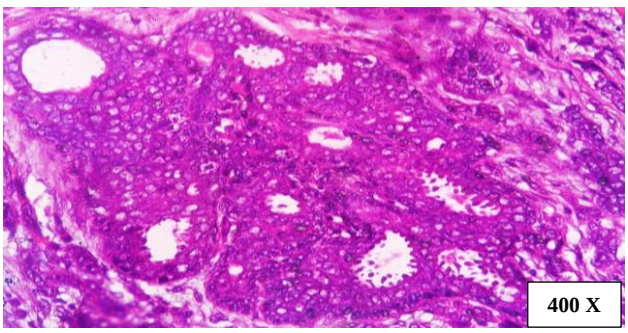

Figure 4: H and E picture showing apocrine snouts.

Apocrine snouts are seen in the ectatic ducts lined by atypical ductal cells Figure 4. Immunohistochemistry was carried out for estrogen receptor (ER) and progesterone receptor (PR).

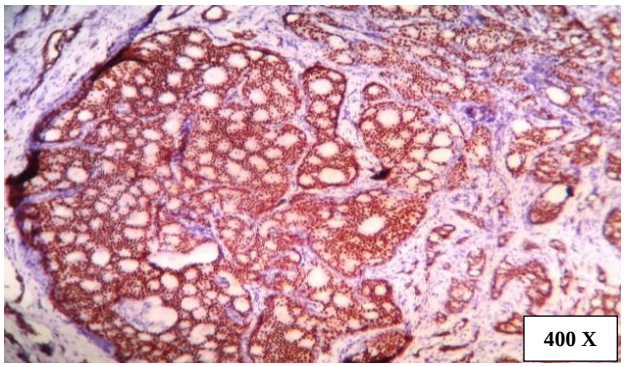

Figure 5: IHC Picture of ER - 100 % positivity in ductal and tubular elements.

Tumor cells showed 100% positivity for both ER and PR (Figure 5 and 6). With the above histopathological and immunohistochemical findings, a diagnosis of Tubulo-lobular carcinoma was given.

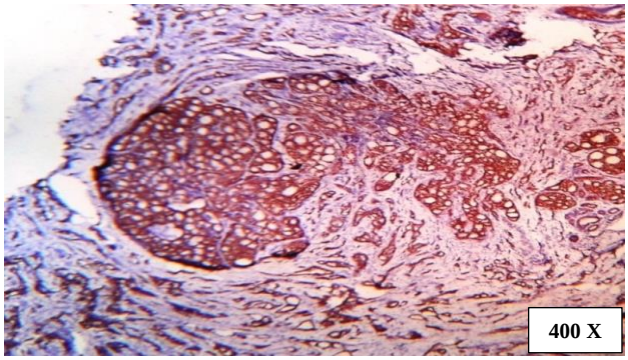

Figure 6: IHC Picture of PR-100% positivity in both elements.

DISCUSSION

Invasive lobular carcinoma constitutes 5-10% of the mammary neoplasia. Lobular carcinomas are well known for their higher incidence of contralateral primary tumors with multicentric disease. In 1977, Fisher et al in their study on 1665 mammary carcinomas, characterised all the neoplasms and concluded that the neoplasms showing features of both tubular and lobular carcinoma are characterised as a tubular variant of lobular carcinoma. He also concluded that Tubulo-lobular carcinoma accounts for 1% of all breast cancers. The mean size of these tumors range from 0.3cms -2.5 cms. Recent WHO 2012 classification included tubulo-lobular carcinoma under invasive lobular carcinoma. These tumors are also multifocal compared to pure tubular carcinomas.[1]

Wheeler et al in their study exclusively on 27 cases of Tubulo-lobular carcinomas have observed that the mean age of patients diagnosed with this subtype of tumor was 60 years. In our study, we diagnosed this case at a very

younger age group. Also, in their study, they have observed that the mean size of the tumor was 1.4cm and 4% of the cases presented bilaterally. In their study, they found that these tumors were multifocal in 19% of cases.[2]

Histopathologically TLC demonstrates mixed feature of both tubular and lobular carcinoma. The tumor displays an admixture of tubules and cords arranged in a diffuse, targetoid pattern. The neoplastic cells are uniform, with small round nuclei and inconspicuous nucleoli. Ductal carcinoma in situ (DCIS) and lobular carcinoma in situ (LCIS) may be seen in up to 50% cases. It was observed that Lobular carcinoma in situ is commonly associated with tubulo-lobular carcinoma rather than ductal carcinoma in situ. Immunohistochemistry reveals strong positivity for ER and PR. These tumors are generally found to be Her2 negative. Both tubules and cords express E-cadherin. These tumors are also found to be reactive for High molecular weight keratin in 50% of cases. Also, these tumors exhibit membranous positivity when stained with α, β and X-catenin compared to the cytoplasmic reactivity in lobular carcinomas for β and X-catenin.[1,4,5]

Esposito et al in their study on the immunohistochemical characteristics of 19 cases of TLC observed that all the cases showed positivity for ER, PR and E-Cadherin. Also, they observed that these TLC tumors exhibited complete membranous staining with both α and β catenin compared to the cytoplasmic expression observed in lobular carcinomas.[3]

The main differential diagnosis for TLC is Tubular carcinoma and Mixed ductal and lobular carcinoma. They are differentiated from each other by histopathological features. In tubular carcinoma, the tubules are larger and more angulated, the characteristic lobular component is not observed. In Mixed ductal and lobular carcinoma, each component (Infiltrating Ductal Carcinoma and Infiltrating Lobular Carcinoma) will show different E-cadherin reactivity patterns, whereas in TLC all the components share the same E-cadherin expression. The prognosis of TLC is favourable with 10-year survival.

CONCLUSION

Tubulo-Lobular Carcinoma is a rare variant of breast carcinoma. This case is being presented here for its rarity and to highlight that the histological classification plays an important role in the prognosis and management of the patient. Since, TLC is considered a variant of Lobular carcinoma, screening of the non-lesional breast is essential to identify bilaterality.

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