

Research Paper

Signet Ring Cell Carcinoma of Breast-A Rare Case Report.

Medical Science

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ABSTRACT

WHO classified signet ring cell carcinoma under 'mucin producing carcinomas' in 2003. It is a very rare tumor and only few cases have been reported in literature. We report a case of primary signet ring cell carcinoma in a 56 yr old woman. The fine needle aspiration smears show cellular and tumor cells with eccentric, large irregular nuclei with cytoplasmic vacuolation. The case is presented because of its rare incidence.

KEYWORDS : Signet ring cells, Carcinoma Breast.

Introduction :

Saphir in 1941 described for the first time signet ring cell carcinoma as mucin secreting carcinoma and later only very few cases were reported in literature^(1,2).Signet ring cell carcinoma was classified by world health organization in 2003 as mucin producing carcinoma⁽⁴⁾.

Sometimes, few signet ring cells will be seen in infiltrating lobular carcinoma and ductal carcinoma, but only primary signet ring cell carcinoma is seen rarely (3).

Case Report :

A 56 vr old woman came to surgical outpatient department with a lump in the left breast of 4 months duration along with bloody discharge from the nipple since 10 days. On examination, there was a palpable mass of 2.5x2.0 cm in the upper outer quadrant of left breast. It was non mobile and firm. There was no axillary or supraclavicular lymphnode enlargement. Right breast and axilla were normal on examination. General clinical examination revealed no abnormalities detected.

Mammography showed a radio-dense mass of 2.3x1.8 cm in the upper,outer quadrant. Fine needle aspiration cytology was done from the lump in left breast.

The aspirated smears were stained with May-Grunwald Giemsa stain. The smears showed moderate cellularity with clusters of epithelial cells as well as scattered cells also. The nuclei are eccentric and presence of abundant cytoplasm, large irregular nuclei with indentation by cytoplasmic vacuoles in few areas. Coarse chromatin and indistinct nucleoli are seen(Fig1). Necrotic material is seen in the background.

Smears from the nipple discharge showed cystic and hemosiderin laden macrophages. Occasional dysplastic and degenerated cells seen with hemorrhagic background.(Fig2)

Periodic Acid Schiff with diastase showed PAS positive mucin in cytoplasm. (Fig3)

A diagnosis of signet ring cell carcinoma was made and confirmed by trucut biopsy from the lesion. The mass was excised and the patient was given chemotherapy.

Discussion : Signet ring cell carcinoma is a mucin producing tumor which show aggressive lesions with a high risk of metastatic spread (5).It arises from invasive lobular carcinoma as well as from infiltrating ductal carcinoma (2,4,6). The occurrence of features of signet ring cell carcinoma is from 2% to 4.5% of breast cancers, cut a pure form of signet ring cell carcinoma is very rare^(2,3).

Usually cellular smears and the cells are seen as loose or discohesive clusters with large eccentrically placed nuclei, which are displaced to the edge by intracytoplasmic mucin. All these features are present in this case.

In this case, MGG stained smears showed plasmacytoid cells in appearance with eccentric nuclei and slightly basophilic cytoplasm along with perinuclear halo. So, PAS and PAS with diastase staining was done to confirm the presence of mucin. Number and percentage of signet ring cells is important in prognostic point of view. More than 10% signet ring cells seen in stage 1 infiltrating lobular carcinoma indicates poor prognosis⁽⁷⁾.

To differentiated signet ring cell carcinoma of the breast from metastatic signet ring cell carcinoma from other sites, Gross cystic disease fluid protein-15(GCDFP-15) can be used as a sensitive marker of signet ring cell carcinoma of breast. It is useful even to diagnose metastatic signet ring cell carcinoma of mammary origin ⁽⁹⁾.

Signet ring cell carcinoma is to be separated from other breast cancers as it have poor prognosis.⁽⁸⁾ Patients with signet ring cell carcinoma are more elderly and present with advanced stage of disease. They metastasizes to serosa, GIT, urinary tract and spleen, besides the more usual sites such as stomach, endometrium and cervix (10).

Differential diagnosis : Signet ring cell carcinoma of breast to be differentiated from clear cell carcinomas, mucinous carcinomas and secondaries from other sites. It is customary to differentiate from these tumors, otherwise treatment options and the prognosis varies considerably.

Conclusion: Primary signet ring cell carcinoma is a rare tumor and a cytological diagnosis is very rare. It is an aggressive carcinoma with a high risk of metastasis and bad prognosis.



Fig.1 : Smears show clusters of epithelial cells with eccentric, large irregular nuclei and abundant cytoplasm with vacuolation. (MGG X 400)



Fig.3 : Cells with diastase resistent PAS positive mucin. (PAS X 400)



Fig.2: Smear from the nipple discharge shows cystic and hemosiderin laden macrophages along with few dysplastic and degenerated cells. (MGG X 400)



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