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Original Research Paper

Pathology

A RARE CASE REPORT OF PRIMARY NEUROENDOCRINE CARCINOMA OF BREAST

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ABSTRACT we report a case of 51 year old lady, presented with complaints of hard lump in the right breast.On clinical examination lump of size 4x3cms in outer lower quadrant was noted. Ultrasonographic imaging showed evidence of 3x2cms ill defined hypoechoic lesion with spiculated margins and microcalcifications. Trucut biopsy was done and histopathological report was given as Suspicious for malignancy which was followed by modified radical mastectomy with axillary clearance. Histopathological examination and Immunohistochemistry(IHC) was done.

KEYWORDS : Neuroendocrine carcinoma, Breast, Imaging, IHC.

INTRODUCTION-

Neuroendocrine carcinomas are rare malignant tumors, which in most of cases, are located in the lungs and gastrointestinal tract(1). The reported incidence of the rare neuroendocrine breast tumors comprises 2–5% of all breast carcinomas. The World Health Organization categorized these tumors as a subtype of invasive breast cancer based on endocrine feature

The present report describes clinical , sonographic and histopathological findings in a case of primary neuroendocrine breast carcinoma in a 51-year-old woman.

Case report: We report a case of 51 year old lady, who presented with complaints of hard lump in the right breast. Clinical examination showed a lump measuring 4x3cms in outer lower quadrant of the right breast. Ultrasonographic imaging showed evidence of 3x2cms, ill defined hypoechoic lesion with spiculated margins and microcalcifications.

Considering the imaging characteristics of the mass and the patient's age range Ultrasonography-guided percutaneous Trucut biopsy was performed which on histopathological examination showed cells arranged in sheets ,individual cells showed pleomorphism with irregular and hyperchromatic nucleus and prominent nucleoli. The report was given as Suspicious for malignancy. Modified radical mastectomy (MRM) with axillary clearance was performed.

Macroscopic examination: MRM specimen measuring 13x12.5x3 cm with nipple areola complex and axillary tail measuring 9x5x1 cm (Fig:1). Cut section showed grey white tumor area measuring 3.5x2x1.5cm and 10 lymph nodes were isolated.

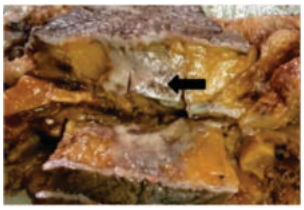

Fig:1 Gross picture grey white tumor area pointed by an arrow.

Microscopic examination of the mass revealed malignant cells arranged in diffuse and trabecular pattern(Fig:2). The cells showed mild cellular and nuclear pleomorphism, finely granular, salt and pepper chromatin, eosinophilic cytoplasm (Fig-3). Few mitotic figures were seen. Tumor tissue was surrounded by lymphocytic infiltrate and no evidence of lymphovascular invasion was noted.

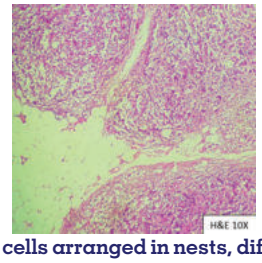

Fig:2 Tumour cells arranged in nests, diffuse and trabecular pattern(H&E 10X)

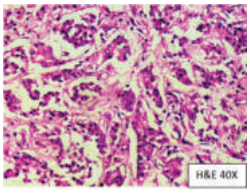

Fig:3 nuclear pleomorphism with salt and pepper chromatin.

Immunohistochemistry with chromogrannin(fig-4) and synaptophysin (fig-5) confirmed the diagnosis of neuroendocrine carcinoma.

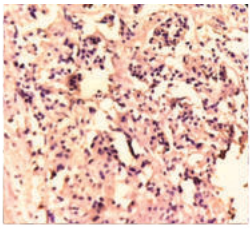

Fig-4 Nests of tumour cells expressing >50% of chromogranin immunoreactivity.

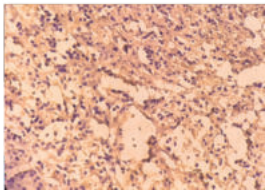

Fig-5 tumour cells expressing >50% of synaptophysin immunoreactivity.

In order to rule out a possible extramammary location of neuroendocrine carcinoma, thoracic, abdominal and pelvic computed tomography (CT) was performed, but no other lesion was detected.

DISCUSSION-

Neuroendocrine tumours(NETs) primarily located in the breast is an extremely rare entity. NETs represents <1% of all breast carcinomas. They commonly originate from the gastrointestinal tract, pancreas, and lungs. The subclassification ranges from well-differentiated to poorly differentiated tumors. In 2012, the World Health Organization classified neuroendocrine breast carcinomas in the class of rare epithelial tumors and were subdivided into well differentiated neuroendocrine tumors, poorly differentiated neuroendocrine carcinomas (small cell carcinomas), and carcinomas with neuroendocrine differentiation. According to WHO, neuroendocrine carcinoma is a tumor with positive immunoreactivity to neuroendocrine markers in at least 50% of tumor cells. [2]

The cases of primary neuroendocrine breast carcinoma described in the literature refer mostly to women in the age range between 40 and 70 years(3) and there are some few cases described in male individuals(4).

Thorough clinical evaluation, extensive radiological imaging coupled by nuclear scans and comprehensive pathological immunohistochemical analysis maybe required to reach the uncommon diagnosis of primary neuroendocrine breast carcinoma.

Some invasive breast cancer may acquire neuroendocrine morphology features with positive markers.

PET/CT, CT scan and MRI maybe helpful tools in aiding diagnosis.

Despite the reported poor outcomes, the standard management plan is no different from invasive breast cancer. Similar guidelines apply to the surgical options being breast-conserving surgery or mastectomy [5-6]. Adjuvant treatment regimens are generally based on immunohistochemistry. [7]

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