Case Report

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A Rare Case of Coexisting Lactating Adenoma and IDC in a Young Woman

Dakhure Sarita*, Shaikh Murtuza*, Fatima Tooba**

*Assistant Professor, ** Professor, Department of Pathology, JIIU's Indian Institute of Medical Science and Research, Warudi, Jalna.

Abstract

Breast cancer diagnosed during pregnancy or 12 months postpartum is referred to as pregnancy associated breast cancer and is reported in 1/3000 pregnancies. Delayed diagnosis is a major issue of pregnancy associated breast cancer.

Lactating adenomas are the most prevalent breast masses seen in pregnant women. Although they are not thought to carry an increased risk of cancer, Hertel et al reported the case of a patient who developed invasive ductal adenocarcinoma in the previous excision site of a lactating adenoma. Geschicker and Lewis reported a lactating adenoma containing an associated infiltrating carcinoma and A Saglam et al reported the case of a lactating woman with coexistent lactating adenoma and invasive ductal adenocarcinoma. We report the same case of a lactating woman with lactating adenoma and invasive ductal adenocarcinoma as components of the same mass.

Keyword: Coexistence; Invasive Ductal Adenocarcinoma; Lactating Adenoma.

Introduction

Most pregnancy-related breast disorders are similar to those in non-pregnant women, however there are some conditions unique to pregnancy and lactation. Due to higher circulating levels of hormones, there is more ductal and lobular growth, increased vascularity and reduction in stroma. This results in significantly increased breast density, which can cause difficulty in clinical and radiological diagnosis of pregnancy and lactation-associated breast masses [1].

Lactating adenomas are benign stromal alterations representing the most prevalent breast lesions in pregnant women and during puerperium; nevertheless, any mass that appears during this period must be carefully evaluated to rule out malignancy. Ultrasound represents the main diagnostic tool for breast lumps during pregnancy because of its accuracy in discrimination between solid and cystic lesions, and its safety due to lack of radiation exposure. Cytologic findings after percutaneous procedures often fail to exclude malignancy due to lactational changes within the breast induced by gestational hormonal milieu.

Corresponding Author: Sarita D. Dakhure, Assistant Professor, Department of Pathology, Indian Institute of Medical Science & Research, Aurangabad-Jalna Road, Warudi, Tq. Badnapur Distt, Jalna-431202 (Maharashtra).
E-mail: drsarita14june@gmail.com

Case Report

A 25 year old multiparous woman came with lump in right breast since one and half year. She also developed lump in right axillary region since one year. She noticed lump in right breast after becoming pregnant, and realized that the lump was growing in size. At the time of presentation she was lactating. Physical examination of right breast revealed, firm, upper outer quadrant, nodular mass, 3 x 2 cm, mobile, appeared well circumscribed. Skin was normal and mass was mobile neither fixed to skin or deeper tissue. Nipple showed milky discharge. The contralateral breast was normal. Single mass was detected in right anterior axillary line. No Lymph Node was felt in left axilla. USG finding shows 32x26x30mms,

heteroechoic lesion with specks of calcification noted at 10 and 1 o'clock position. Similar adjacent, lateral lesion of 15x14mms and hypoechoic lesion of 19x14mms noted below it. Enlarged lymph node noted along anterior axillary tail. FNAC from right breast lump and axillary swelling showed rich cellularity consisting of sheets and clusters of ductal cells with nuclear and cellular crowding, moderate amount of cytoplasm, mildly pleomorphic, enlarged nuclei with fine chromatin pattern and prominent nucleoli. Scatterd bare nuclei and ductal cells seen with vacuolated cytoplasm. Scattered foamy histiocytes and strands of fibrocollagenous stroma seen in background of greasy granular, fatty material. Increased lymphocytic infiltrate seen in aspirate from axillary mass. Possibility of secondary metastasis in right axillary lymph node from right breast was considered on cytology but since nuclear atypia in ductal cells can be seen during pregnancy and lactation, possibility of lactational change in axillary tail was considered as first. So cytological diagnosis of benign breast lesion with lactational change right breast and axillary tail was given and excision biopsy and histopathology of both breast and axillary mass was advised to rule out cause of ductal cell atypia other than lactational change. Then patient underwent exisional biopsy.

We received in histopathology section, a gross specimen consisting of single grey white tissue, with attached fibrofatty tissue of size 4.5 x 4 x 3 cm. Cut surface firm grey white and appeared well circumscribed. Microscopy showed a mass with focally closely packed glands showing adenosis with lactational change. Rest of the mass consisted of pleomorphic enlarged cells arranged in irregular glands, sheets, trabeculae and infiltrating into densely collagenised fibrous stroma. Individual pleomorphic cells showed moderate amount of cytoplasm and enlarged pleomorphic and hyperchromatic nuclei with irregular nuclear membranes. Focal comedo carcinoma in situ pattern also seen. Foci of lactating adenoma and infiltrating ductal cell carcinoma appeared to be colliding with focal intermingling. Histopathological diagnosis of infiltrating ductal cell carcinoma [not otherwise specified] with coexistent lactating adenoma right breast was given.

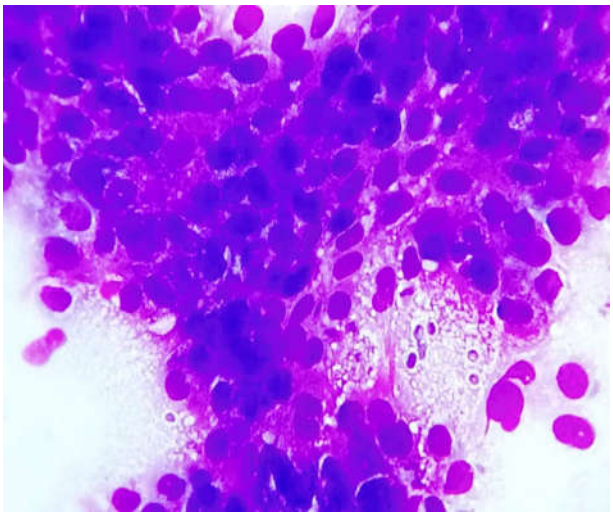

Fig. 1: FNAC of right breast mass showing sheets and clusters of ductal cells with nuclear and cellular crowding, moderate amount of cytoplasm mildly pleomorphic, slightly enlarged nuclei with occasional prominent nucleoli and focally irregular nuclear membranes. (Giemsa: 40x)

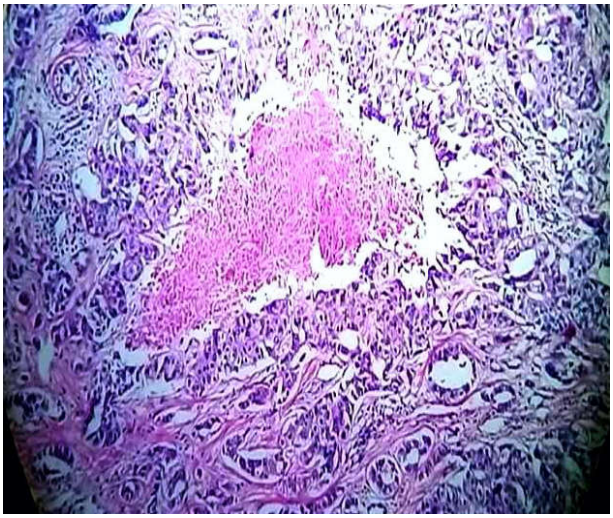

Fig. 2: Microphotograph showing foci of IDC with pleomorphic enlarged cells arranged in irregular glands, sheets, trabeculae and infiltrating into surrounding fibrocollagenous stroma and focal comedo carcinoma in situ pattern. (H & E: 10x)

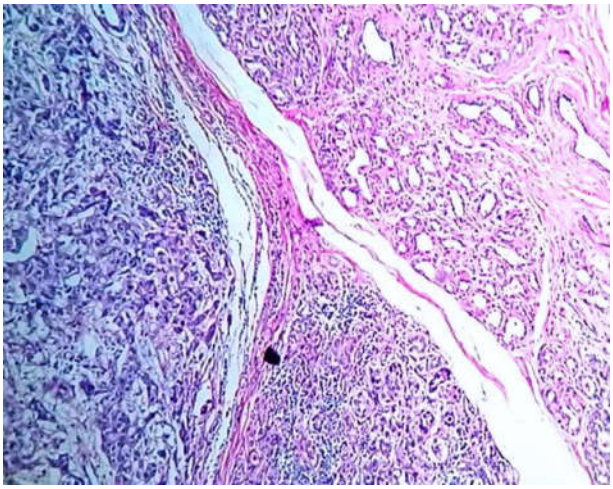

Fig. 3: Microphotograph showing both lactating adenoma [right] and IDC [left] in same mass. (H & E: 10x)

On Immunohistochemistry, malignant ductal cells were negative for estrogen and progesterone receptors and IHC score of 3+ for Her-2/neu oncoprotien was obtained in invasive tumor cells.

Discussion

Pregnancy associated breast cancer is reported in 1/3000 pregnancies. Although rare, it is one of the most common cancers seen in pregnant women [2,3]. Lactating adenomas are most common masses occurring during pregnancy. Whether lactating adenomas represent tubular adenomas with varying histology resulting from hormonal changes brought about by pregnancy and lactation, or are distinct entities is unknown [4].

Lactating adenomas are not thought to be a risk factor for development of carcinoma. However, two cases are reported of lactating adenoma occurring simultaneously with an infiltrative carcinoma and a case report of an invasive carcinoma developing at previous excision site of lactating adenoma [5-7]. These cases question the possibility of malignant transformation of lactating adenomas. In our case, focal areas of transition between the adenoma and the adenocarcinoma could be identified. Our case could simply be a collision tumour with adenocarcinoma arising denovo. But focal areas of transition suggest possibility of adenocarcinoma arising in the setting of and possibly from lactating adenoma.

In A Saglam et al study [7], immunohistochemistry revealed progesterone receptor immunoreactivity in less than 5% of the neoplastic cells. Oestrogen receptor immunoreactivity was lacking and 2+ membranous staining was seen for c-erbB2. These findings correlate with immunohistochemistry findings of present case.

We know that during pregnancy high concentrations of oestrogen, progesterone, and prolactin promote growth of ducts and formation of tubuloalveolar structures as preparation for lactation. Oestrogen and progesterone have long been known to play a well defined role in human breast cancer. Recent evidence suggests that prolactin too has role in human breast cancer [8]. Our patient was breastfeeding therefore had high concentrations of prolactin. Lactating adenomas have been shown to express high amounts of prolactin receptors and excess prolactin has been shown to induce breast cancer in mice.

There are cases of carcinoma arising within tubular adenomas in the literature [9-10]. We cannot rule out the possibility of an invasive carcinoma arising within a lactating adenoma. Clearly, further experience is necessary to resolve the dilemma and determine its prognostic relevance. Until then, our case once again reminds us that women with lactating adenomas should not be neglected and close follow up should be maintained to rule out coexistent carcinoma, even if the chance is very remote.

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