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Original Research Article

Secretory Carcinoma of Breast in Elderly Patient: A Case Report

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Abstract

Introduction: Secretory breast carcinoma (SBC) is a rare variant of invasive breast carcinoma comprising less than 0.015% of invasive breast cancers. It is identified by its distinct histomorphology owing to the copious intra- and extracellular secretory material seen on histologic analysis.

Case Report: A 72-year-old female presented to surgical OPD with a complaint of a recurrent palpable mass in the left breast. She first noticed the lump in her upper inner quadrant of her left breast with pain and nipple discharge, in 2015 when on fine needle aspiration was diagnosed with low-grade carcinoma of the breast. The patient did not consent to excision and was treated conservatively. FNAC was again repeated in 2018 which showed ductal carcinoma of papillary type. Now patient complains of an increase in the size of the lump with pain. Only a single palpable lymph node was identified on physical examination. On ultrasonography, there were multiple dilated ducts with heterogenous hypoechoic mass measuring approximately 32x20x10 mm in the upper inner quadrant of the left breast suggestive of intraductal papilloma or carcinoma. The tumor is mainly comprised of microcysts and glandular structures that contained secretory material in their lumen. At high magnification, the tumor cells were mostly medium-sized with round and oval nuclei and inconspicuous nucleoli generally contained abundant cytoplasm and were vacuolated or eosinophilic granular in appearance. A preliminary diagnosis of secretory carcinoma was made. PAS and D-PAS stains were performed. The secretions and cytoplasm stained positive with PAS and were also D-PAS positive. Immunostaining for ER / PR / HER2 was negative. Based on microscopic findings, special stains and triple-negative status, the diagnosis of secretory carcinoma was approved.

Conclusion: In this report, we reported an elderly patient with recurrent secretory carcinoma of the breast which remained dormant for more than 7 years without any distant metastasis and the patient survived with only symptomatic treatment. Although secretory carcinomas as shown in this case tend to recur and should be treated with surgical options whenever not contraindicated.

Keywords: Breast Carcinoma, Histomorphology, Palpable Lymph, Eosinophilic Granule

Introduction

Secretory carcinoma of the breast (SBC) is a rare variant of invasive breast carcinoma comprising less than 0.015% of invasive breast cancers. In the year 1966, McDivitt and Stewart described it for the first time [1]. This tumor is frequently seen in children and adolescents, which is why it is known as "juvenile carcinoma." It is less frequently seen in the elderly population. In the year 1980, Tavassoli and Norris [2] reported a series of 19 cases of juvenile carcinoma, including adults with a median age of 25 years, and proposed the term 'secretory carcinoma which was established thereafter. It is identified by its distinct histological picture owing to the copious intra- and extracellular secretory material seen on histologic analysis. Secretory breast carcinoma is described in both men and women ranging from 3 to 86 years old [2-4]. Due to its low incidence (0.015% of all breast cancers) [3] and unique pathologic features, the diagnosis of SBC can be initially difficult to make. SBC is usually associated with a good prognosis.

Case Report

A 72-year-old female presented to surgical OPD of our institute with the complaint of a recurrent palpable mass in her left breast. She first noticed the lump in the upper inner quadrant of her left breast with pain and nipple discharge, in 2015 when on fine needle aspiration was diagnosed with low-grade carcinoma of the breast. The patient did not consent to excision and was treated conservatively. FNAC was again repeated in 2018 which showed ductal carcinoma of papillary type. No patient complained of an increase in the size of the lump with pain. Family history was not significant for breast cancer. She was anemic and other routine blood investigations were not significant. The initial physical exam revealed a tender, lump in the upper inner quadrant. Only a single palpable lymph node was identified on physical examination. The right-side breast was unremarkable on examination. On ultrasonography, there were multiple dilated ducts with heterogenous hypoechoic mass measuring approximately 32x20x10 mm in the upper inner quadrant of the left breast suggestive of intraductal papilloma or carcinoma. An ultrasound-guided core needle biopsy was performed and sent to our department. The tissue was fixed in 10% buffered formalin overnight and processed as per protocol. The sections were stained with hematoxylin and eosin stain and examined.

The tumor is mainly comprised of microcysts and glandular structures that contained secretory material in their lumens. At high magnification, the tumor cells were mostly medium sized with round and oval nuclei and inconspicuous nucleoli generally contained abundant cytoplasm and were vacuolated or eosinophilic granular in appearance. [Image 1] A preliminary diagnosis of secretory carcinoma was made. PAS and D-PAS stains were performed. The secretions and cytoplasm stained positive with PAS and were also D-PAS positive. [Image 2,3] Immunostaining for ER / PR / HER2 was negative. Based on microscopic findings, special stains, and triple-negative status, the diagnosis of secretory carcinoma was approved.

The patient was started on chemotherapy and was on treatment till the time of writing the case report.

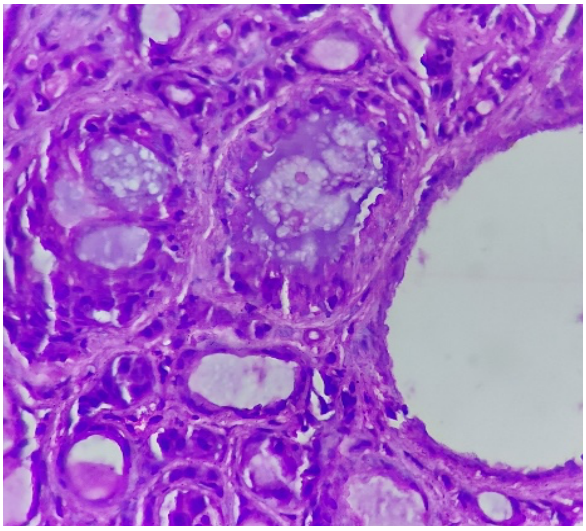

Figure 1: Section showing bland looking nuclei with inconspicuous nucleoli with intracellular and extracellular secretions (H&E, 40x)

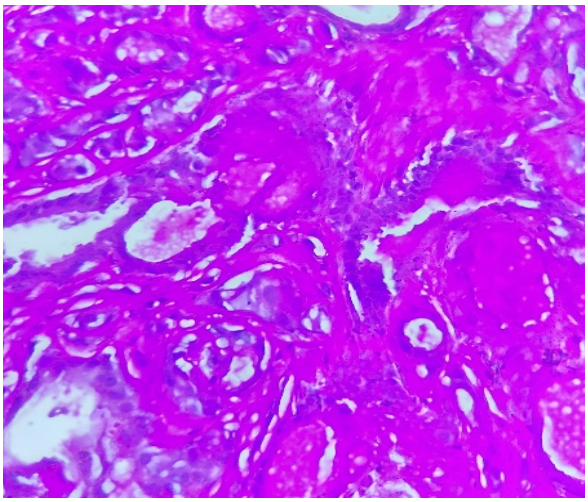

Figure 2: Showing secretions stained positive for PAS stain. (PAS, 40x)

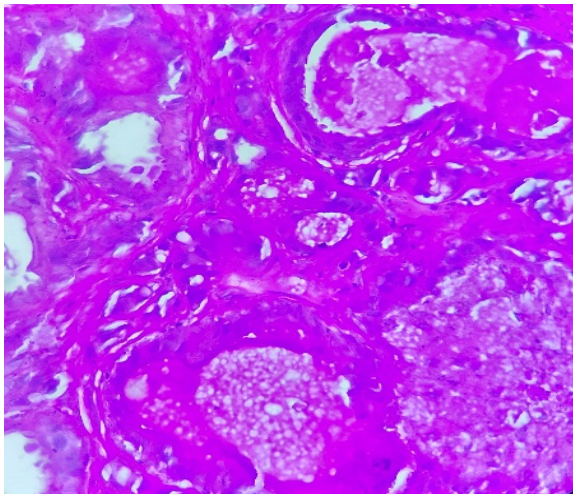

Figure 3: Showing secretions stained positive for diastase-PAS stain. (D-PAS, 40x)

Discussion

One of the rare tumours of the breast, secretory breast carcinoma accounts for less than 0.015% of all breast cancers [3] with a female to male ratio of 6:1 [1]. SBC which was initially thought to be affecting only juvenile females now is known to occur in adult patients also As shown in our case the diagnosis initially, on radiology and fine needle aspiration may be elusive. Common clinical presentation of this tumor is slow and progressively growing, well-circumscribed, painless, and palpable breast mass that can occur anywhere in the breast however the most common site is the upper outer quadrant of the breast [5]. On microscopic examination, secretory carcinoma breast may show solid, tubular, and microcystic structures composed of cells that produce copious extracellular and intra-cellular eosinophilic secretory material which is also intensively positive for periodic acid Schiff stain. The tumor cells show low-grade features, the cells are small to medium in size with oval to round nuclei with scanty mitotic activity, and abundant eosinophilic granular cytoplasm. Sometimes, a papillary pattern can also form the dominant architecture of the tumor. On immunohistochemical staining, the tumor cells are positive for S-100 and negative for her2, ER, and PR i.e., these tumors are triple-negative [6-8]. In our case, the tumor showed very slow growth progression and remained dormant for a long period of 7 years after the first presentation, with no history of chemotherapy or any curative surgical intervention. Microscopically the tumor showed areas of cystically dilated spaces filled with PAS-positive secretions with medium bland-looking nuclei with inconspicuous nucleoli.

Secretory carcinoma of the breast usually has a favourable prognosis. However, some cases may present with distant metastases. On literature review, till now 14 cases of SBC are reported with distant metastasis. These cases have an age range between 8 years and 73 years with a mean age of 36 years. The most common sites of metastasis were the lung in 9 cases, bones in 4 cases, and liver in 4 cases, with the other metastatic sites being the skin in 2 cases, kidney, mediastinum, pancreas, and pleural in 1 case each. Case fatality was reported in eight cases due to metastatic secretory carcinoma. The mean survival in cases of secretory carcinoma is reported to be 74.6 months [9,10,11]. As reported by Hoda et. al. [10], they did not find any characteristic clinical or pathological features of secretory carcinomas, such as the age of the patient, location of the tumor, radiological findings, the status of axillary lymph, surgical treatment of with chemotherapy, and the status of ER, PR and HER2 expression to indicate the ability of this tumor to metastasize to distant organs. Tavassoli and Norris [2] in their work, suggested three features of SBC, first tumor size of <2 cm, second age of patient <20 years at initial diagnosis, and well-circumscribed margins may show favourable prognosis. In our case, we did not have any of the three features, unfortunately.

Due to the very few reported cases of secretory carcinoma, no consensus on the treatment is available. However many authors suggest surgery as a primary modality of treatment due to the reported recurrence of tumours [12]. In our case, the patient has refused surgical treatment and was started on chemotherapy as per protocol and was surviving and undergoing treatment at the time of writing the report.

Conclusion

In this report, we reported an elderly patient with recurrent secretory carcinoma of the breast which remained dormant for more than 7 years without any distant metastasis,

and the patient survived with only symptomatic treatment. Although secretory carcinomas as shown in this case tend to recur and should be treated with surgical options whenever not contraindicated.

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