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Intracystic papillary carcinoma of the breast in a male patient: Case report

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Abstract

A case of a 49-year-old man with a malignant intracystic tumor of the breast is presented. There was swelling in the left breast with a diameter of 3x4 cm in the central quadrant. After obtaining a core needle biopsy (CNB) from the intracystic change, the diagnosis of DCIS (Ductus Carcinoma *in situ*) was confirmed. Further testing, by immunohistochemical methods, X-ray of the lungs, and sonography of the abdomen were performed, and showed no secondary lesions. Bone scintigraphy was also performed, which showed no bone lesions, while levels of the tumor markers CA15-3, CA 19-9, and CEA1 were normal. Based on these findings, a modified radical mastectomy was performed, resulting in the diagnosis of intracystic papillary carcinoma with a ductal invasive carcinoma of the size 0.3 cm. In the 5 nodes found in the axillary dissection, no metastasis was identified. The tumor was classified, according to the TNM tool, as pT1a pNo Mo St IA. There were no recurrences during a 7-month postoperative follow-up. The patient is receiving ongoing antihormonal therapy: Anastrazole (1 mg/day). In tumors found in the mammary region in men, the possibility of malignant lesions should be kept in mind, especially in patients with a positive family history.

Keywords: Male breast carcinoma, Intracystic papillary carcinoma

Introduction

Male breast cancer (MBC) is a cancer in males found in their breasts. Males account for less than 1% of new breast cancers with about 20,000 new cases being diagnosed worldwide each year. Currently, one in every 800 men is estimated to develop this cancer during their lifetime.[1,2] Here, we report a case of intracystic papillary ductal carcinoma of the breast in a 49-year-old male patient.

Case Presentation

This report presents the case of a 49-year-old man with a malignant intracystic tumor of the breast treated surgically. A year ago, he noticed a rust-colored sero-mucoid discharge from the nipple of the left breast. The patient had a family history of cancer, his mother had been diagnosed with breast cancer and his father with prostate cancer. The patient was also being treated for type 2 diabetes mellitus.

We observed a swelling in the left breast with diameter 3x4 cm (Figure 1). This was analyzed further using sonography, which showed anechoic change with internal infiltrations 24 x 16 mm and 15x14 mm that did not cross the cyst wall (Figure 2). We then performed a biopsy of the intra-cystic change using a core needle, leading to the diagnosis of DCIS (Ductus Carcinoma *in situ*). Laboratory results for biochemical parameters revealed glucose, cholesterol and total protein. (Table 1). Immunohistochemical testing revealed the following: Estrogen receptor positive (3+), Progesterone receptor positive (3+), HER-2/neu negative, Ki-67: 15%.

Bone scintigraphy showed no osteoblastic lesions but 1 L5 lumbar vertebra post-operative lesion. An echocardiogram of the abdomen showed no secondary lesions on the liver, spleen or abdominal cavity. A chest X-ray did not show any secondary lesions, while sonography of the abdomen was also free of lesions. We also found an elevated level of the tumor markers CA15-3: 107 U/mL (Reference values <26 U/mL). This was round to be reduced 6 months following the treatment, with a value within the reference range (CA 15-3: 24.4 U/mL).

Based on the tests mentioned earlier, the patient underwent a modified radical mastectomy, which resulted in the diagnosis of intracystic papillary carcinoma along with invasive ductal carcinoma measuring 0.3 cm (as shown in Figure 3). The histological and nuclear differentiation was classified as Group 2, and there were up to 10 mitoses per 10 high-power fields. The overall histological grade of the tumor was 2, and there were no signs of metastatic deposits in five examined lymph nodes. The tumor was staged as pT1a pN0 M0, corresponding to stage IA. During the 7-month postoperative follow-up, there were no noticeable recurrences. The patient is currently receiving antihormonal therapy in the form of Anastrazole at a dose of 1 mg per day.

Figure 1: Swelling on left breast, 3x4 cm on central quadrant.

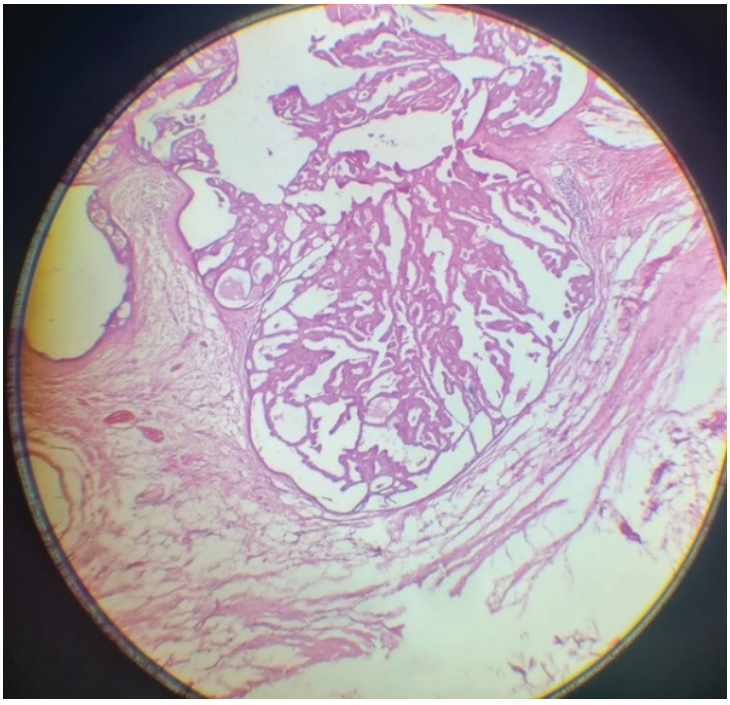
Figure 2: Anechogene changing and inner infiltration.

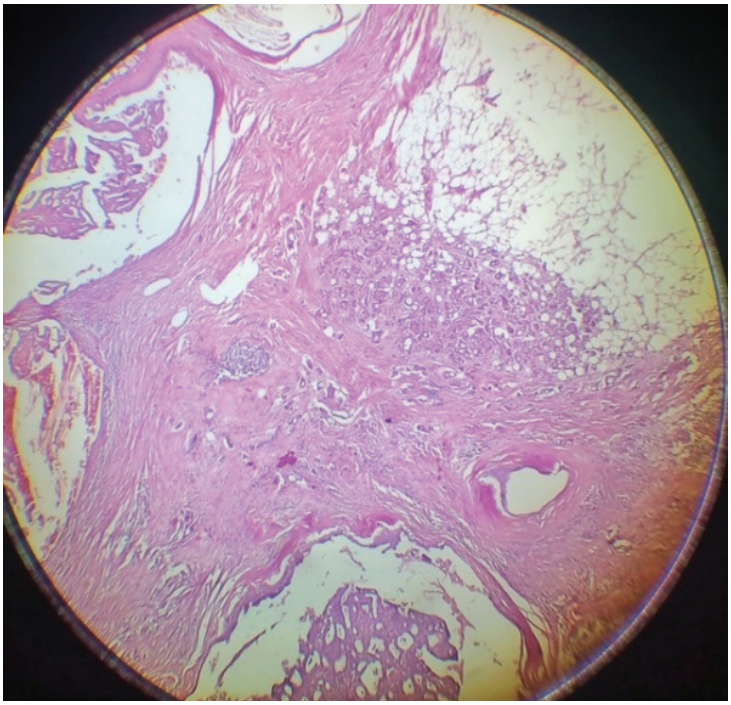
Table 1: Biochemistry results.

Test	Result	Reference Range
Glucose	9.46 mmol/L	4.40 - 6.00
Cholesterol	7.77 mmol/L	3.60 - 5.70
Triglyceride	1.79 mmol/L	0.45 - 1.81
Urea N	5.03 mmol/L	1.70 - 8.30
Creatinine	108.1 micromole/L	53.0 - 115.0
T Bilirubin	6.3 micromole/L	3.4 - 20.4
D Bilirubin	0.74 micromole/L	0.00 - 5-10
ALT GPT	22 U/L	3 - 41
AST GOT	21 U/L	2 - 37
Alkaline Phosphatase	53 U/L	43 - 115
GGT	24 U/L	3 - 55
Albumin	51.7	35.0 - 52.0
T Protein	84.4 g/L	64.0 - 83.0
LDH P	308 U/L	230 - 460
Iron	16.6 micromole/L	11.6 -31.3
CRP	0.0 mg/L	0.0 - 6.0

Figure 3: Macroscopic view of the specimen showing papillary intracystic breast carcinoma.

Figure 4. Histologic view -Intracystic changes with invasion on 12 and 2 o'clock





Discussion

Intracystic papillary carcinoma of the breast in males is a very rare disease. Intracystic papillary carcinoma (IPC) is a rare form of breast cancer, accounting for 0.5–1% of all breast cancers. It typically occurs in older women and has an excellent prognosis. The reported 10-year survival rate for IPC is 100%, and the recurrence-free survival rate is 96% and 77% at 2 and 10 years, respectively.[3]

A relatively higher incidence for IPC has been reported in male patients with a relatively higher incidence range

of 5-7.5 % has been reported in men.[4–6] The majority of males diagnosed with Male Breast Cancer (MBC) have no identifiable risk other than increasing age, and the average age of diagnosis is 71 years old.[7] Breast cancer in men is usually detected as a hard lump under the nipple and areola. The main treatment options include chemotherapy, radiation, and surgery. Possibly as a result of lower awareness of the risk of breast cancer, and a related tendency not to seek early diagnosis and treatment, men have a higher breast cancer mortality rate than women.[8] Fine-needle aspiration cytology (FNAC) and core-needle biopsy (CNB) are usually performed, however, false negative results are observed relatively frequently in cytological tests.[9] In the reported case, we performed CNB to sample the rich biopsy material, but were unable to confirm invasion preoperatively.

There are no clear guidelines in IPC management. Grabowski et al. confirmed that surgery is the most commonly used treatment.[4] In our case, radical modified mastectomy with axillary dissection was performed. It is important to note that we did not have the means to perform a sentinel lymph node biopsy. The most common type of breast cancer seen in men is invasive ductal carcinoma, which constitutes approximately 90% of all male breast cancers. Other types of breast cancer in males can be medullary, papillary, and lobular. Ductal carcinoma *in situ* is not commonly found due to a lack of awareness and stigmas related to MBC. This then leads to delayed diagnosis and poorer outcomes for the patients. IPC has been divided into three subgroups, which seem to correlate with the prognosis: IPC alone, IPC plus DCIS, and IPC with invasion.[6]

In our case, IPC was found with invasive ductal carcinoma, with a dimension of 0.3 cm. Malignant progression in IPC is relatively rare, with the majority of cases having a good prognosis; there is no difference in prognosis between non-invasive and invasive types.[10,11] If there is non-invasive ductal carcinoma outside the cyst wall or micro-invasive carcinoma in the interstitial tissues, radiation therapy and pharmacotherapy are usually performed, but these therapies for IPC have not been extensively evaluated.[12] In our case, because the wall of the cyst was not invaded, five lymph nodes were found without metastases, and the case was hormone receptor-positive, the oncologist decided to only prescribe Anastrazole postoperatively. Seven-month follow-up showed no locoregional recurrences.

Conclusion

In the tumors found in the mammary region in men, the possibility of malignant lesions should be kept in mind, especially in patients with a positive family history.

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