

Case Report**OPEN ACCESS**

Mucinous carcinoma with axillary lymph node metastasis in a male breast: A case report

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Abstract

Context: Pure mucinous carcinoma of the male breast is an extremely rare neoplasm. It is characterized by a lower incidence of metastatic nodal involvement and a higher survival rate than invasive ductal carcinomas. **Case Report:** We report the case of a 75-year-old male who presented with a retroareolar mass of the right breast. The patient underwent radical mastectomy including right axillary lymph node dissection. The tumor was well demarcated and had a friable consistency with a gelatinous appearance. Histologically, the diagnosis of pure mucinous carcinoma with lymph node metastasis was performed. After surgery, the patient received chemotherapy, radiotherapy, and hormone therapy (Tamoxifen). The patient remained free of disease for 36 months after surgery. **Conclusion:** Pure mucinous carcinoma of the male breast is a very rare tumor; in which axillary nodal disease is exceptional.

Keywords: Mucinous carcinoma, male breast cancer, axillary lymph node metastasis.

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Introduction

Mucinous carcinoma represents a small distinctive subgroup of breast cancer. It accounts for 1–7% of breast malignancies [1], and it is an exceptionally rare tumor in men [2]. Histologically, mucinous carcinoma can be classified as pure or mixed. In general, pure mucinous carcinoma is accompanied by a significantly better prognosis and low axillary lymph node metastases [1].

Pure mucinous carcinoma of the male breast is an extremely rare histological subtype of malignancy. About 12 cases of pure mucinous carcinoma of the male breast were reported in the literature [2- 5]. To our knowledge, we describe the second case of pure mucinous carcinoma with axillary lymph node metastasis in a male breast.

Case Report

A 75-year-old man with no medical history presented with a mass located below his right retroareolar region of

2 months duration. There was no reported history of family breast cancer. On physical examination, bilateral gynecomastia was observed and the patient had a mobile, well-circumscribed, round mass in the right retroareolar region. It was 4 cm in diameter. There was evidence of clinical right axillary lymphadenopathy. The rest of the physical examination was normal; particularly, there were no abnormal findings in the left breast. Ultrasonography breast showed a lobulated and hypo-echoic lesion with well-defined margins on the right retroareolar region (Fig. 1).

Preoperative examination, consisting of thorax X-ray, ultrasound of the abdomen, and isotope bone scan was within normal limits. Excisional biopsy and frozen section analysis confirmed the malignant nature of the mass. A right radical mastectomy, including right axillary lymph node dissection was performed. Macroscopic examination showed a well circumscribed mass with friable consistency and mucoid texture. Microscopically, the diagnosis was based on the presence of tumor cells which arranged in nest, tubular

and solid patterns and floated in abundant extracellular mucin (Fig. 2). The neoplastic cells expressed progesterone but not estrogen receptor, but they did not express HER 2/neu. Axillary lymph node metastasis was noted within two nodes (Fig. 3). The diagnosis of pure mucinous carcinoma with lymph node metastasis was performed. After surgery, the patient received chemotherapy and radiotherapy; he also received hormonotherapy (Tamoxifen). The patient is still free of recurrence 36 months after surgery.

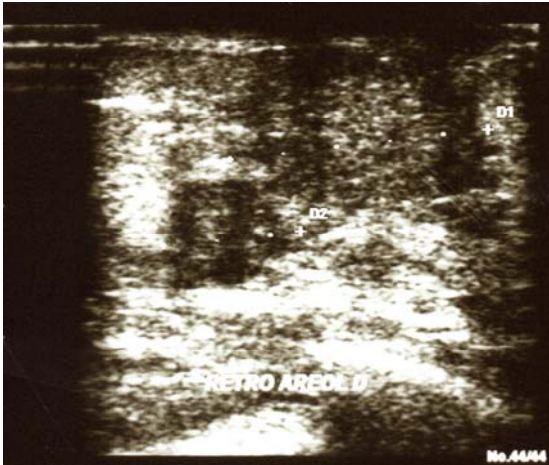


Fig. 1 Ultrasonography breast: lobulated and hypo-echoic mass in the retroareolar region.

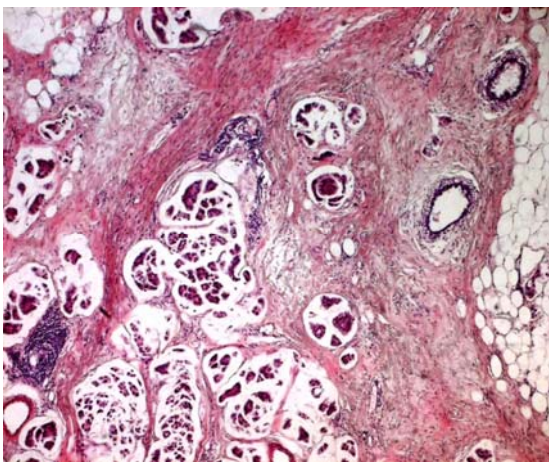


Fig 2 Large mucin pools around tumor cell nests (HE x 40).

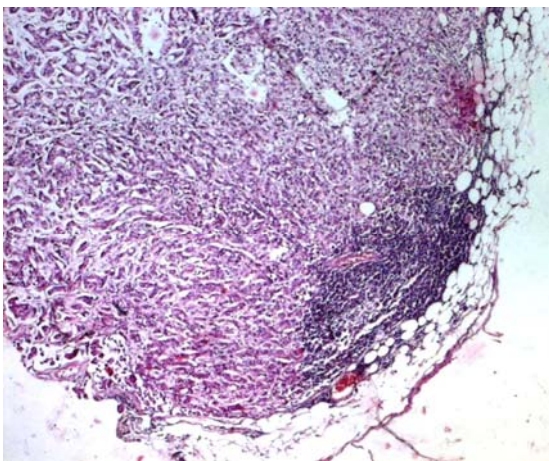


Fig. 3 Lymph node metastasis (HE x 40).

Discussion

Male breast cancer is a rare disease that accounts for less than 1% of all cancers in men and less than 1% of all diagnosed breast cancers [6]. The most frequent types (about 90%) were invasive ductal carcinomas [7]. Pure mucinous carcinoma of the male breast is an extremely rare neoplasm accounting for less than 2% of male breast carcinomas; it is slightly more uncommon in men than in women. Histologically, mucinous carcinoma can be classified as mixed or pure forms. The latter is characterized by variable amounts of extracellular mucin surrounding tumor cells. Mucinous tumors, with invasive areas not surrounded by mucin, are considered as a mixed mucinous carcinoma [2]. The prognosis for pure mucinous carcinoma was much better than for mixed. About 12 cases of pure mucinous carcinoma of the male breast were reported in the literature [2-5]. Pure mucinous carcinoma usually presents as a round and well circumscribed lesion on the mammography. On breast ultrasonography, the tumor has well defined margins, and it is iso-echogenic relative to the fat surrounding the breast tissue [8, 9]. In general, pure mucinous carcinoma is accompanied by a better prognosis and a low rate for axillary lymph node metastases [1]. To our knowledge, this is the second reported case of pure mucinous carcinoma with axillary lymph node metastasis in a male breast [2].

The incidence of lymph node metastasis of pure mucinous carcinoma was very low [1, 10]. The presence of abundant extracellular mucin may act as a barrier and diminish the tumor cell burden in mucinous carcinoma at the invasive margins [2]. Axillary nodal disease is rare in pure mucinous carcinoma and correlates with certain factors as a younger age, aneuploidy, high nuclear grade, and negative estrogen receptor status. Tumor size did not correlate with axillary metastasis [11]. In our case, although the patient was a 75-year-old man and nuclear grade was low, lymph node metastases were developed.

The standard treatment of male breast cancer is modified radical mastectomy combined with axillary lymph node dissection. However, some authors suggest that axillary nodal dissection may be unnecessary in pure mucinous carcinoma because of the very low incidence of axillary nodal metastases [10]. Sentinel lymph node biopsy may help identify the need for axillary dissection.

Although lymph node metastasis of pure mucinous carcinoma is rare, it is important to perform careful clinical examination when the primary breast mass is suspicious for mucinous carcinoma because the presence of lymph node metastasis define the proper choice of therapeutic strategy.

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