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A Case of Malignant Adenomyoepithelioma of the Breast

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ABSTRACT. *A case of malignant adenomyoepithelioma (MAME) of the breast was analyzed retrospectively. Postoperative pathological examination of immunohistochemical staining of paraffin sections showed that MAME of the breast expressed myoepithelial cellmarkers such as CK5/6, p63, and SMMHC. These results formed the basis of the definitive diagnosis, and the patient was given 4 cycles ofTC chemotherapy. The patient did not have signs of organ recurrence or metastasis after 9 months of follow-up. MAME of the mammary gland is a rare malignant tumor. Detection of the myoepithelial markers by immunohistochemistry is a gold standard for definite diagnosis.*

KEYWORDS: *breast; breast malignant tumor; malignant adenomyoepithelioma; myoepithelial markers.*

1. Clinical Data

Malignant adenomyoepithelioma (MAME) is a relatively rare type of tumor, accounting for only 1% of primary breast cancer cases.

The patient, a 68-year-old female, was admitted to the hospital in March 2018 due to a neoplasm in the left breast tumor present for 2 months. At that time, the size of the tumor was approximately 1.5 cm neoplasm, which later gradually increased to 3.0 cm with mild tenderness. Molybdenum target X-ray photography of the left breast visualized an oval mass shadow, approximately 28.3×27.6mm located at 11 o'clock direction. The mass exhibited a partially rough border and irregular stripes of calcification. It was classified as BI-RADS 4B. Breast color Doppler ultrasound demonstrated the presence of hypoechoic nodules with calcification in the left mammary gland. The ultrasound confirmed the BI-RADS category 4B.

On March 14, 2018, a core needle biopsy was performed. Pathologic examination indicated invasive ductal carcinoma. Immunohistochemical (IHC) evaluation yielded the following results: ER: 10% weakly+, HER-2: 2+, E-cadherin: +, P120: +, CK5/6: +, EGFR: ++, PR: -, CK34βE12: -, P53: -, and KI-67: 30%.

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These findings supported the diagnosis of invasive ductal carcinoma. FISH for HER-2 was also performed, with a negative result.

On March 21, 2018, a successful modified radical surgery of the left breast was performed. Pathologic examination of paraffin sections identified a malignant AME in the left breast. The malignant region was 0.9 cm long and 0.7cm wide. By IHC, it was ER and PR negative, with glandular epithelium positive for CK8/18, and myoepithelium positive for CK5/6, P63p63, SMMHC, and S100. The Ki67 labeling index was 30%. Neoplasms were not found in the nipple, skin, and basal soft tissue; 3. without the metastasis of regional lymph nodes metastasis (0/25): (level 1)0/17; (level 2)0/7; (Between Pectoralis major and pectoralis minor): 0/10.

After the surgery, the patient was treated with TC chemotherapy (4 doses of Paclitaxel Liposome, 150mg/m ²and Cyclophosphamide, 600mg/m ²). The patient has been followed up for more than 9 months and is generallyingoodcondition, withoutsignsoftumorrecurrenceormetastasis.

2. Discussion

In the presented case, the mass extended into the surrounding tissue, and the cells and nuclei showed pleomorphism. A small amount of tissue was obtained by core needle biopsy, and pathologic evaluation was performed using frozen sections, which, however, did not provide a definite diagnosis. MAME should be distinguished from malignant myoepithelioma, low-grade adenosquamous cell carcinoma, papillary sarcoma, and metaplasia. The MAME may express myoepithelial markers of the basal cells such as CK5/6, p63, and SMMHC, but are negative for ER, PR, and Her-2. Thus, the phenotype features correspond to the basal-like breast carcinoma[1].

Currently, the amount of research data and relevant clinical experience available for comparison is limited. It has been suggested that the treatment should involve a simple mastectomy, extended resectionor breast-conserving surgery with ensuring a safe resection margin and performing local radiotherapy. The simple mastectomy combined with a sentinel lymph node biopsy (SLNB) is the surgical protocol of choice[2]. Another study proposed the treatment of the MAME of the breast by expanded tumor resection combined with SLNB and modified radical mastectomy. In the presence of metastasis, radiotherapy and chemotherapy should be performed. While postoperative radiotherapy is similar to breast-conserving radiotherapy, chemotherapy depends on tumor diameter, immunohistochemistry results, and the number of lymph node and distant metastases. Given that the ER and PR tend not to be expressed in the breast MAME, the endocrine therapy is no longer recommended[1, 3]. In the present case, modified radical mastectomy and 4 rounds of TC chemotherapy were adopted. MAME may appear organ recurrence and metastasis. The diameter of the MAME tumor inthe breast was larger than 2cm, with a strong ability to invade the surrounding tissues [4]. The major route of cancer metastasis is via blood circulation, and the primary target organ is the lung[5], while lymphatic metastasis is rare.

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In the current case, the breast molybdenum target X-ray photography and color Doppler ultrasound indicated 50-95% probability of breast malignancy. The preoperative biopsy indicated invasive ductal carcinoma. The diagnosis of MAME was confirmed by postoperative pathological examination of myoepithelial markers by immunohistochemistry on paraffin sections. The simple mastectomy combined with SLNB is the preferred surgical method, and postoperative systemic chemotherapy is recommended because of the high degree of malignancy and tendency tometastasize.

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