

Asynchronous Bilateral Male Breast Cancer. A Rare Case Report

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Abstract

We describe a rare case of asynchronous bilateral carcinoma of the mammary glands in a 66-year-old man. The patient was admitted to the Department of Dermatology and Venereology due to exacerbation of chronic eczema. During the examination, a 3×2-cm tumor with retraction of the mamilla was found in the right mammary gland. Mastectomy and regional lymphatic dissection were performed. Histological examination showed invasive ductal carcinoma, ER (+) 70%, PR (-), HER2 (-). Treatment included chemotherapy, radiotherapy, and hormone therapy. Three years later, the patient reported a lump in the left breast. The presence of a tumor formation was confirmed by mammography and ultrasound examination. A radical mastectomy with regional lymphatic dissection was performed. Histological examination showed invasive ductal carcinoma of the mammary gland, ER (3+) 80%, PP (2+) 60%, HER2 (+++), and Ki67 (+) 80%. Treatment with chemotherapy and radiation therapy was carried out. Five years after diagnosis of the second carcinoma, the patient is in a good general condition. Regardless of its rarity, the described case should draw doctors' attention to this pathology. Assessment of risk factors and periodic breast examination in men would allow early diagnosis, timely treatment, and better prognosis of the disease.

Keywords

male breast carcinoma

INTRODUCTION

The incidence of male breast cancer (MBC) is less than 1% of all mammary carcinomas and less than 1.5% of all carcinomas in men. Compared to women, MBC has the following features:^[1-11]

- It is diagnosed at a later age – the mean age for men is 67 years, and for women – 62 years.
- It is diagnosed at a more advanced stage; the time between the appearance of the first symptoms and the diagnosis is usually 6 to 10 months. In more than 40% of men, the disease is diagnosed in stage III or IV.
- Invasive ductal carcinomas are seen in 90% of cases. Invasive papillary carcinomas are less frequent and are 2 times more common in men than in women.

Cases of ductal carcinoma *in situ* have also been reported.

- 80%-90% of carcinomas in men are positive for estrogen and progesterone hormone receptors compared to 60-70% in women. The expression of human epidermal growth factor receptor 2 (HER2) in men is low and is observed in only 5% of cases. Four percent of male patients are triple negative (estrogen receptor, progesterone receptor, and HER2 negative).
- They have a higher mortality rate. The 5-year overall survival was 73% in men versus 83% in women, and the 10-year survival was 52% in men versus 69% in women.
- Metastatic breast lesions are possible in men (e.g., in prostate carcinoma) and must be differentiated from primary carcinomas.

The risk factors for the development of MBC we discuss are as follows:^[2,4,6-9]

- Advanced age – the risk increases with age.
- Marital status – never married and patients with hormonal infertility are at increased risk.
- Previous breast pathology – e.g. gynecomastia.
- Previous pathology of the testicles – e.g. undescended testicle, orchitis, orchiectomy.
- Family history of mammary gland carcinoma or other carcinomas – it is present in 20-30% of men and increases the risk more than three times.
- Genetic factors – the presence of BRCA2 genetic mutation in the family. It occurs in 4%-40% of men with MCB and increases the risk more than 80 times.
- Presence of Klinefelter syndrome (47, XXY) – in these men, there is an increased production of estrogens. The incidence of Klinefelter's syndrome in men with breast carcinoma is 7.5%.
- Increased levels of estrogens associated with obesity, liver cirrhosis, and thyroid gland dysfunction, as well as with exogenous hormone therapy (prostate carcinoma treatment) and transsexual patients (male to female).
- Occupational hazards – working in a hot environment, exposure to exhaust fumes, electromagnetic and ionizing radiation.

The clinical picture of breast cancer in men is similar to that in women. In the majority of cases (75%), patients consult a doctor because of a painless lump in the breast area. Other symptoms such as mammary involvement with pain, redness, sloughing, retraction, discharge, and rarely ulceration are sometimes observed.^[2,4,6,9]

The diagnosis is based on the clinical examination, ultrasound examination, mammography, and biopsy. Mammography has a sensitivity of 92%-100% and a specificity of 90%. Ultrasound is useful for detecting enlarged lymph nodes in the axillary region (in over 50% of cases at diagnosis).

Treatment for MBC is similar to that for women and includes surgery, chemotherapy, radiation therapy, and hormone therapy.

The prognosis depends on the size of the tumor, involvement of the lymph nodes, histological stage, and hormone receptor status. The risk of death is higher in patients with tumors larger than 2 cm, affecting more than three lymph nodes, histological stage II-III, and in ER/PR negative tumors.^[2,4,6,8]

In this communication, we describe a rare case of asynchronous bilateral mammary carcinoma in a man.

CASE REPORT

A 66-year-old man was admitted again to the Clinic of Dermatology and Venereology due to aggravated chronic eczema. During history taking, the patient reported the appearance of a painless 'bump' in the right breast, about 5-6 months old, which was slowly growing. Examination re-

vealed an enlarged right mammary gland with retraction of the mammilla. A tumor formation measuring 3x2 cm with an uneven surface and fused with the surrounding tissues, as well as a slightly enlarged, movable lymph node in the right axilla, were palpated. (Fig. 1) After discharge, the patient was referred to a surgery clinic. The ultrasound examination of the right mammary gland revealed a retro mammillary heterogeneous tumor formation reaching the pectoral muscle and single enlarged lymph nodes in the axillary region. Right mastectomy and regional lymphatic dissection were performed. Histological examination showed evidence of invasive ductal carcinoma in places with a mucinous appearance. Seven lymph nodes were examined without evidence of metastases. Immunohistochemistry showed: ER (+) positive 70%, PR (-) negative., HER2 (-) negative. A diagnosis of *Ca. gl. mammae dextra* was made. The patient underwent six courses of chemotherapy with farmarubicin, endoxan, and symptomatic agents, followed by radiotherapy to the right chest wall through 2 points (course 50 Gy) and hormonal therapy with tamoxifen.

In September 2016, the patient felt a lump at the base of the left breast. The performed mammography of the left mammary gland established in the upper lateral quadrant the presence of an oval strong shadow with high X-ray density, multi-arc, partially non-sharp contours. There were regional micro calcifications between the shadow and the mammilla with a ductal arrangement, heterogeneous shape, size, and density, some with cast-malignant characteristics. The finding of the ultrasound examination was a solid formation, 12x13x8 mm in size, with a non-uniform hypochoic structure, and uneven resonating contours. In the left axilla, there were single lymph nodes with sizes from 3 mm to 8 mm. The patient was admitted to the Surgery Clinic, where a left radical mastectomy with axillary lymph dissection was performed. Histological examination showed evidence of invasive ductal carcinoma of the mammary gland. The immunohistochemical examination shows: EP (3+) positive 80%, PR (2+) positive 60%, HER2 (+++) positive; Ki67 (+) positive 80%. This histological picture is different from the previous one (2013), which gives



Figure 1. A 3x2 cm tumor formation was palpated in the area of the right breast.

reason to accept it as a new malignancy. A diagnosis of *Ca. gl. mammae sinistra* was made. The patient was treated with six courses of chemotherapy with *zarzio*, *docetaxel*, and symptomatic agents, followed by small-fraction radiation therapy to the left chest wall and adjacent supraclavicular area with linear accelerator photons over four fields to 40 Gy. During the patient's follow-up examinations and tests, pleural effusions without the involvement of the pleura from the underlying disease, volume formations in the lung bases bilaterally, and single axillary and paratracheal lymph nodes were found. Five years after diagnosis of the second carcinoma, the patient is in a good general condition.

DISCUSSION

Bilateral breast cancer is the development of independent primary carcinomas of both mammary glands. The two carcinomas can be diagnosed at the same time or sequentially, and the interval between them can be months to years. In men, simultaneous, so-called synchronized bilateral carcinoma of the mammary glands is more commonly observed. Its incidence is 1-2% of all cases of MBCs.^[1,12-14] The successive, so-called asynchronous bilateral mammary carcinoma in men is reported less frequently.^[15]

The average age at diagnosis is usually between 60-70 years.^[1] The development of a second primary carcinoma may be related to the presence of the mentioned risk factors for men. Cases of synchronous bilateral MBC associated with male hypogonadism, hormonal therapy due to prostate cancer, long-standing gynecomastia, and Klinefelter syndrome have been reported in the literature.^[1]

Certain treatments, such as chemotherapy and radiotherapy, are also thought to increase the chance of developing a second primary carcinoma.^[6] According to some authors, the mere presence of one mammary gland carcinoma in men is already a favorable factor for the development of a second tumor of the same or the other mammary gland, with the risk increasing 30 times. This risk is greater in men under the age of 50 when the first carcinoma was diagnosed. It should also be noted that in 10-16% of men with breast carcinoma, a second primary carcinoma may be seen in another organ such as the prostate gland, lung, colon, rectum, and esophagus.^[7,9,15]

We had the opportunity to observe a rare case of asynchronous primary bilateral carcinoma of the mammary glands in a man. The time between the diagnoses of the two carcinomas is 3 years.

CONCLUSION

Despite its rarity, the described case should draw the attention of doctors to this pathology. Assessment of risk factors and periodic breast examination in men would allow early diagnosis, timely treatment, and better prognosis of the disease.

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Асинхронный двусторонний рак молочной железы у мужчин. Отчёт о редком случае

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Резюме

Описан редкий случай асинхронного двустороннего рака молочных желез у мужчины 66 лет. Больной поступил в отделение дерматовенерологии в связи с обострением хронической экземы. При обследовании в правой молочной железе обнаружена опухоль размером 3×2 см с западением сосочка. Была выполнена мастэктомия и регионарная лимфатическая диссекция. Гистологическое исследование показало инвазивную протоковую карциному, ER (+) 70%, PR (-), HER2 (-). Лечение включало химиотерапию, лучевую терапию и гормональную терапию. Три года спустя пациент сообщил об уплотнении в левой груди. Наличие опухолевого образования подтверждено данными маммографии и УЗИ. Была выполнена радикальная мастэктомия с регионарной лимфатической диссекцией. При гистологическом исследовании выявлен инвазивный протоковый рак молочной железы, ER (3+) 80%, PR (2+) 60%, HER2 (+++) и Ki67 (+) 80%. Было проведено лечение химиотерапией и лучевой терапией. Через пять лет после установления диагноза второй карциномы общее состояние больного хорошее. Несмотря на свою редкость, описанный случай должен привлечь внимание врачей на данную патологию. Оценка факторов риска и периодическое обследование молочных желез у мужчин позволит провести раннюю диагностику, своевременно начать лечение и улучшить прогноз заболевания.

Ключевые слова

рак молочной железы у мужчин
