

Case Report

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Male breast cancer: Report of 2 cases

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Abstract

Male breast cancer (MBC) is a rare neoplasm and diagnosed in less than 1% of all malignant tumors [1]. It also accounts for less than 1% of all breast cancers. It has been estimated that it affects around 1/100000 men per year [2]. However, the frequency of diagnosed MBC has been steadily increasing over past few decades [3]. The risk of developing breast cancer in men within a population is about 125 lower when compared to breast cancer in women [4]. The male breast cancer may also appear bilaterally, although it is extremely rare (0,5-2,5% of all MBC) [5].

There is a lack of research based on large groups of patients of prospective studies due to the rare occurrence of male breast cancer, hence each study seems to increase the knowledge on this subject matter. The two cases of patients described by us are part of the discussion.

Keywords: Male, Breast cancer, BRCA1.

Introduction

Both patients were operated after performing proper diagnostics. Initial diagnosis – carcinoma invasivum was obtained on the basis of histopathological examination of the sample obtained by core needle biopsy. According to anamnesis, the breast cancer was diagnosed in families of both patients – one concerning the daughter and another one affecting the mother. Moreover, death because of stomach cancer was stated in one patient's family. Information about patients, performed examinations and provided treatment is presented in the table (Table 1).

The first patient currently has survived 28 months without symptoms indicating recurrence of cancer. He received a radio-

therapy at the Oncological Department (50 Gy) and is currently taking Tamoxifen. The second patient lives for 14 months, however due to dementia, he has not undergone the adjuvant therapy, neither the patient nor the family agreed, although he remains under observation.

Discussion

Most of the information about male breast cancer comes from the observation of small groups of patients described retrospectively and very often with different outcomes. A meta-analysis of 2992 patients showed that the average men undergoing surgical intervention because of MBC was 65 years old. Furthermore, male breast cancer is usually diagnosed in its early stages [6,7].

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Table 1: Characteristics of males diagnosed with breast cancer.

Factor/ No		1	2
Age (years)		79	75
Family history		daughter – breast cancer; father – stomach cancer	mother – breast cancer
Comorbidities		Arterial hypertension, Diabetes Mellitus	Arterial hypertension, Prostatic hyperplasia, Senile dementia
Physical examination		Palpable tumor mass localized within area of areola of right breast	Palpable tumor mass localized within a papilla of right breast
BMI		29,4	31,2
Diagnosis		USG, BGI (Carcinoma)	USG, BGI (Carcinoma)
Operation		Maddena (20.12.2017)	Maddena (26.02.2019)
Histopathological diagnosis		Invasive carcinoma NST G3 (Fig.1)	Invasive Carcinoma NST G2
Size [mm]		15x15x27 (Fig.2)	15x10x10
Papilla		Infiltration present 0,5 cm under the papilla	Retropapillary area, involving $\frac{3}{4}$ of papilla, not reaching the skin
Lymph nodes/metastases		10/0	8/3
Histopathological examination	Mitotic Index	12/10 HPF	4/10 HPF
	ER	(+++) 100%	(++)
	PR	(+++) 100%	(+++)
	Her-2	negative	negative
	Ki 67	approx. 30%	approx. 10-12%
Type		Luminal B	Luminal A
Genetic mutations		BRCA2	Not examined
Discharge from the hospital		5 th day	13 th day
Adjuvant treatment		6 weeks of radiotherapy in $D_c=50$ Gy/g chest wall area + Tamoxifen	Did not agree for further treatment
TNM classification/ Stage of cancer		T2N0M0 / II A	T1N1aM0 / II A

Both our patients with tumor stage of IIA confirm already available reports.

Factors contributing to the increase of risk of developing MBC are family and genetic predisposition, the use of endogenous sex hormones or gonadal dysfunction (mumps over 20 years old, testicular irreplacability) as well as underwent chest radiotherapy. It should be emphasized that men with positive family history in relation to first degree relatives who were diagnosed with breast cancer have a 2-5 times higher risk of developing MBC. About 15-20% of men treated for breast cancer have a positive family history [8-11]. This fact has been confirmed by both patients operated by us. It is also assumed that patients with BMI exceeding 30 kg /m² have the higher risk of developing breast cancer as well [12]. Additionally, ionizing rays and high ambient temperature are taken as risk factors.

Male breast cancer is usually diagnosed late – in the seventh and eight decade of life [6,11], what has been also confirmed by our patients. Most often, MBC is manifested as a painless nodule in the retroareolar region as we have seen in both patients. The pain is reported extremely rarely likewise the observation of papillary discharge, relatively skin ulceration is seen sporadically.

The clinical and pathological characteristics of breast cancers is not the same within men and women what brings the explanation of the significantly shorter survival and high mortality rate among men when compared to women. Over 95% of malignant tumors treated in a group of 2992 men showed the presence of estrogen receptor (ER+) and 86% revealed progesterone receptor (PR+). Most cancers (73%) have been diagnosed at early stage (I or II). The dominant histological character is cancer without a special type as it was recognized in nearly 90% of patients. All these features were confirmed by our patients [6,12].

Invasive ductal cancer (IDC), also known as infiltrating ductal carcinoma with positive ER+/PR+ receptors and HER2 negative expression is the most common type of breast cancer in men. Hereditary mutations include 4-40% of men [13,14]. While hereditary breast cancer BRCA1 and BRCA2 are associated with a significantly higher risk of developing among men, the effect of other mutations such as PALB2 and CHEK2 is not as obvious [16]. It has been documented that the risk of male breast cancer associated with the presence of the BRCA1 mutation is 1-5% whereas 5-10% with the presence of the BRCA2 mutation in comparison [13].

Although the appearance of the mutation is dependent on many ethnic and environmental factors, the most common mutations among the male breast cancer are: BRCA2 (47%), CHEK 2 (31%) PALP 2(7%), BRAC1 (9%) and ATM (4%) [15].

The therapeutic approach to the male breast cancer is similar to that which is performed among women in post menopausal period [9]. Particularly, topical treatment is based on surgery and radiation therapy. However, there are studies indicating that radiation therapy does not improve long-term effects [10].

As early as 10-15 years ago, the overall 5-year survival of men treated for breast cancer, depending on its stage, was 78,67,49 and 19%, respectively. On the other hand, the analysis carried out in 2016 showed a significant improvement, especially at early tumor stages, in means of the long-term results – 88,75.7,61 and 17,7%, correspondingly. That kind of improvement in long-term results

concerning MBC treatment is due to beneficial effect of modern hormone therapy application to those tumors which revealed presence of estrogen and progesterone receptors [6,17]. A meta-analysis indicates that males affected by breast cancer presenting ER+ have about 30% lower risk of death due to this disease [8]. Other authors do not observe such correlations, however indicate that such risk seems to be comparable in both groups of patients after 7.5 years [8,10].

The histopathological grade (G) may be considered as independent negative prognostic factor [8,9].

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