CASE REPORT – OPEN ACCESS

International Journal of Surgery Case Reports 20S (2016) 8–11

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Male breast cancer, clinical presentation, diagnosis and treatment: Twenty years of experience in our Breast Unit

A. Sanguinetti[a], A. Polistena[b], R. Lucchini[a], M. Monacelli[c], S. Galasse[a], S. Avenia[d], R. Triola[a], W. Bugiantella[b], R. Cirocchi[b], F. Rondelli[b], N. Avenia[b]

[a] S. Maria University Hospital, Terni, Italy
[b] University of Perugia, Italy
[c] Perugia University Hospital, Italy
[d] Medical School University of Perugia, Italy

ARTICLE INFO

Article history:
Available online 26 February 2016

Keywords:
Male breast cancer
Genetics
Therapy
Surgery
Radiotherapy
Chemotherapy
Hormonal treatment

ABSTRACT

BACKGROUND: The male breast cancer (MBC) is a rare and represents less than 1% of all malignancies in men and only 1% of all breast cancers incident. We illustrate the experience of our team about the clinico-pathological characteristics, treatment and prognostic factors of patients treated over a period of twenty years .

RESULTS: Forty-seven patients were collected 1995–2014 at the Breast Unit of the Hospital of Terni, Italy. The average age was 67 years and the median time to diagnosis from the onset of symptoms was 16 months. The main clinical complaint was sub areolar swelling in 36, 76% of cases. Most patients have come to our attention with advanced disease. The histology of about ninety percent of the tumors were invasive ductal carcinoma. Management consisted mainly of radical mastectomy; followed by adjuvant radiotherapy and hormonal therapy with or without chemotherapy. The median follow-up was 38 months. The evolution has been characterized by local recurrences; in eight cases (17% of all patients). Metastasis occurred in 15 cases (32% of all patients). The site of bone metastases was in eight cases; lung in four cases; liver in three cases; liver and skin in one case and pleura and skin in one case.

CONCLUSION: The male breast cancer has many similarities to breast cancer in women, but there are distinct functions that need to be appreciated. Future research for a better understanding of the disease should provide a better account of genetic and epigenetic characteristics of these forms; but, above all, epidemiological and biological cohorts numerically more consistent.

1. Introduction

Even if rarely, breast cancer (BC) affects men. To date, in Western countries, male breast cancer (MBC) is <1% of all breast tumors and <1% of all cancers in men [1–3]. Its incidence is approximately one case per 100,000 man-years [4]. Recent epidemiological studies suggest that the incidence of MBC is increasing by 1.1% per year [1,2]. MBC incidence is generally low compared with the female BC (FBC), but there is substantial variation between countries. The highest overall rates adjusted for age occur in Israel (1.08 per 100,000 person-years), while the rates are the lowest in South-east Asia, particularly in Thailand (0.14 per 100000 person-years) [4]. The reason for this variability is to be found mainly in the genetic susceptibility for the population. Common factors BC risk, such as genetic, hormonal and environmental factors, are involved in the pathogenesis of BC in women as in men. The main predisposing factor MBC is a positive family history (FH) of BC. Patients with a positive first degree FH have a 2.0 times greater risk, which increases to more than 5.0 times with the number of affected relatives and relatives of the first onset, thus suggesting an important role of genetic factors in the risk of MBC [5]. From an epidemiological point of view, the male breast cancer MBC is similar to the female postmenopausal and, in general, treatment MBC follows the same indications postmenopausal FBC. However, the clinical and pathological features of MBC do not exactly match those of the FBC and this would explain why mortality rates and survival are significantly lower in male than in female patients [6]. And now estimated that up to 10% of all the MBCs are hereditary forms caused by germline mutations in inherited well identified susceptibility genes BC. With their mutation frequency and extent of

E-mail addresses: alessandrosanguinetti@gmail.com, sanguinettiale@gmail.com (A. Sanguinetti), apolis74@yahoo.it (A. Polistena), robertalucchini@alice.it (R. Lucchini), massimo.monacelli@gmail.com (M. Monacelli), sergio.galasse@gmail.com (S. Galasse), stefano_avenia@libero.it (S. Avenia), atriolaroberta@gmail.com (R. Triola), walterbugiantella@alice.it (W. Bugiantella), roberto.cirocchi@unipg.it (R. Cirocchi), rondellif@hotmail.com (F. Rondelli), nicolaavenia@libero.it (N. Avenia).

http://dx.doi.org/10.1016/j.ijscr.2016.02.004

their impact in BC susceptibility, these genes can be divided into "high penetrance", "moderate penetrance" genes and "low penetrance". Mutations in two genes leading BC high risk, BRCA1 and BRCA2, occur infrequently in the population, but give it a high risk of BC for the individual [11,7]. The moderate risk of BC is determined by genetic variants associated with BRCA1/2 pathways in DNA repair. These variations occur in <1% of the population, and their contribution to the risk of BC is <5% [12,8]. Recently, has been identified third class of low penetrance susceptibility alleles. The low penetrance, however, makes their function of onset of the disease still barely comprehensible. Doubtless, BRCA1 and BRCA2 are the major susceptibility genes in high-risk families. In cases MBC, BRCA2 mutations are much more common than BRCA1. These are responsible for 60–76% of MBC occur in high-risk families, while the frequency of BRCA1 mutations varies from 10% to 16% [13,9,14,10]. The vast majority of BRCA1/2 mutations are truncating mutations; however, it was also identified a large number of missense variants. At present, there is no evidence of a correlation between the position of the mutation in the BRCA1 or BRCA2 gene and the risk of MBC. BRCA1/2 polymorphic variants may also be associated with an increased risk of BC [16,11,18,12]. Interestingly, as there is an association between the variant BRCA2 N372H and the risk of MBC in young men [19,13]. Specific mutations in BRCA1 and BRCA2 show high frequency in specific countries or ethnic groups, in particular, genetically isolated populations; This would explain the higher incidence (>2% in total) in the Ashkenazi Jewish male population than the general population of the United States [20,14,21,15]. Recently were studied specific BRCA-associated phenotypes otherwise identified in MBC [31,16]; it was discovered that most of the MBC BRCA1-related are negative HER2 (HER2), and grade 3 tumors show high proliferative activity. In the study that we propose, we evaluated the clinical pathological characteristics, biological and genetic implications, treatment and prognosis of cases of MBC treated in the Breast Unit of the Hospital "Santa Maria" of Terni in a period of about twenty years.

2. Patients and methods

2.1. Clinical data

It was performed analysis regarding cases of MBC treated in twenty years in a single center. Inclusion criteria were male patients >18 years with localized breast cancer, locally advanced or metastatic. We excluded from the study patients who had no follow-up after initial diagnosis. All the diagnosis of breast cancer had preoperative histological confirmation; tumoral staging was performed with the 2007 edition of the TNM classification. The tumor histological classification was performed using the Scarff-Bloom and Richardson (SBR) system histology. Immuno histochemical analysis to determine the estrogen (ER) and progesterone receptor (PR) status was performed using standard procedures on 4 micron paraffin sections of tissue samples stained with the monoclonal antibodies 6F11 and 1A6 for ER and PR, respectively. 10% nuclear staining was considered a positive result. The description of the clinical data was produced in percentage or in terms of mean and median ± standard deviation. Survival was calculated using the Kaplan Meier method, and for the evaluation of the relationship between the explanatory variables was used the program® XLSTAT—Kovach Computing Services. Anglesey, Wales. UK. The treatment of each patient was determined by the medical staff of the Breast Unit, while the consent, signed by all the patients, was approved by the Multidisciplinary Oncology Group and by the Ethics Committee of the Hospital.

3. Results

3.1. Clinical features

Forty-seven patients at the Breast Unit of the Hospital "Santa Maria" in Terni, Italy, with a diagnosis of breast cancer between January 1995 and December 2014 were retrospectively analyzed and evaluated in terms of general characteristics and survival. The average age was 62 years (range 32–91 years). Family history of breast cancer (HF) was observed in four cases. The main symptom was a solid sub areolar mass in 36 cases, 76%. The tumor was associated with gynecomastia in two cases (4%). Paget's disease was found in one case (2.5%). The median time for the consultation was 28 months (range: 3–48 months). According to the TNM classification, tumors were classified as T1: 4 cases (9%), T2: 9 (18.5%), T4 and T3, 25 and 9 cases, respectively, 52.5% and 20%. In 27 patients (57.2%), locally advanced disease was classified as N1, while in 25.2% of cases (12 patients) was classified as N2. Fourteen patients (30%) is presented with metastatic disease already. He was diagnosed with invasive ductal carcinoma (IDC) in 45 cases (95%); for the two remaining cases this was infiltrating ductal carcinoma with Paget's disease of the breast (2.5%) and infiltrating lobular carcinoma (ILC) (2.5%). According to the classification Scarff-Bloom–Richardson grade II or III was predominant (82% of cases). Axillary lymph nodes containing metastases (N+) in 79.4% of cases (39 patients). In addition, hormonal receptors were evaluated in twenty-three cases. Both estrogen receptor (ER) and progesterone receptor (PR) were positive in 67% (31 patients).

4. Treatment

Thirty-four patients (71%) were treated with radical mastectomy (RM), while the modified radical mastectomy (MRM) was performed in three cases; in the other three cases was performed simple mastectomy (SM), without lymph node dissection, and in only one case was performed lumpectomy. In six patients (13%) was determined only palliative treatment. All patients received adjuvant therapy after surgery. Twenty-three patients of thirty-four patients received radiation therapy; the median dose delivered was 50 Gy to the breast, chest wall and regional lymph nodes. Chemotherapy (anthracycline-based protocol, AC60 or FEC 100) was given in the neoadjuvant situation in two cases, in adjuvant situation in nine cases. Delivery chemotherapy increased second special stage and axillary lymph node involvement. Nine cases receive in palliative. Hormone therapy was delivered in twenty patients adjuvant situation: tamoxifen alone in 20 cases, Tamoxifen with orchiectomy in one case. Six patients received palliative. Table 2 summarizes the methods of treatment according to the TNM stage. During the median follow-up of 38 months (3–168 months); evolution has been characterized by local recurrences in eight cases (17% of all patients). Metastasis occurred in 15 cases (32% of all patients). The site of bone metastases was in six cases; lung in four cases; liver in two cases; liver and skin in one case and pleura and skin in one case. The 5 and 10 year overall survival (OS) rates were 63% and 55%.

5. Discussion

Male breast cancer has many similarities to breast cancer in women, but there are distinct functions that need to be appreciated. In recent years, there has been an increase in the incidence of this disease. Review of Surveillance, Epidemiology and End Result data (SEER) indicate an increased incidence of male breast cancer, from 1.0 per 100,000 men in the late 1970s to 1.2 per 100,000 men from 2000 to 2004 [1,2] ; this value of incidence has increased steadily,