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Male breast cancer – actuality of our days

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ABSTRACT

Coming from a female patient's point of view, breast cancer is a hard to bare diagnosis. But what about the male patient? Although is very rare, male breast cancer does exist, and in the majority of cases, it is diagnosed in a very advanced stage with minimal curative possibilities. The critical medical education in our country along with the absence of a well structured national screening program are both provocative factors for the existence of this kind of disease.

This work is based upon a retrospective study on 976 patients (919 females and 57 males) who were diagnosed and requiring medical treatment for mammary neoplasm between 2008-2013 under the auspices of the Surgery Clinic inside the Clinical and Emergency District Hospital of Constanta.

From all the patient's anamnestic common elements like smoking, liver diseases, stress, radiation exposure, family antecedents that are related to the actual suffering, we can draw a latigeneral instalation pattern of cancer. This study is meant to point out the similarities and especially the differences between the specialised bibliography and the collected information from the existing pathology concerning the age incidence, the type of neo formation, the location, histo-pathologic diagnosis, the types of surgical procedures and also to make evident the causes producing delay in starting the surgical treatment with visible consequential effects on both surviving and the quality of life.

Keywords: male breast cancer, epidemiology, surgical treatment, 'quality of life'

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Introduction

Cancer of the male breast is a rare disease, accounting for less than one percent of cancer in males as well as less than one percent of all breast cancer. Although the first description of male breast cancer was made by an English surgeon, John of Aderne, in 1307 and was followed subsequently by case reports by such notables as Ambroise Pare and Fabricius Hildanus in the sixteenth and seventeenth centuries[1], large series were not reported until well into the twentieth century.

Material and Method

The debate is rely on an retrospective study achieved on a group of 57 patients diagnosed with breast tumour pathology between 2008-2013 into Surgery Clinic of County Emergency Hospital Constanta.

This group of patients was submitted to an statistic analyse beeing analysed a series of parameters, the results beeing presented into the tables and graphics below.

Results

Table I – distribution over years in the study cases

Year of study	2008	2009	2010	2011	2012	2013	TOTAL
Total no. of admissions in clinic	4132	4134	5728	3704	3566	3480	24744
Total no. of surgical interventions	4443	3639	3978	4539	4279	3531	24409
No. of breast cancers	1.59%	1.86%	2.11%	2.37%	1.37%	1.81%	1.86%
	71	68	84	108	59	64	454
No. of breast tumors	1.45%	2.0%	1.5%	3.13%	1.87%	4.16%	2.30%
	60	86	86	116	67	145	560

Fig. no. 1 - distribution over years in the study cases

Table IIA - No. of cases of tumors and breast cancers in 6 years

Breast cancers 2008..2013	28 – 49.13%
Breast tumors 2008..2013	29 – 50.87%
Total no. of man breast cancer	57

Table IIB - No. of cases over years

	Tumors %	Breast cancers %
2008	6.66%	4.69%
2009	4.65%	8.07%
2010	4.65%	6.58%
2011	5.17%	7%
2012	3%	1.89%
2013	5.51%	11.48%
Total	5.17%	6.16%

Fig. no. 2 - No. of cases over years

Table no. III - No. of cases by age

Age	No. of tumors	Percentage	No. of breast cancers	
<20	2	6.89%	1	3.57%
21-30	4	13.79%	2	7.14%
31-40	4	13.79%	0	0
41-50	8	27.58%	8	28.57%
51-60	7	24.13%	7	25%
61-70	3	10.34%	6	21.42%
>70	1	3.44%	4	14.28%
TOTAL	29	100%	28	

Fig. no. 3A - No. of tumors by age

Fig. no. 3B - No. of breast cancers by age

Fig. no. 4 - No. of cases by breast location

Table no. V – Types of surgical procedures

	Surgical types	No. of cases	%	Diagnostic	Surgical types	No. of cases	%
Breast Cancer	Modified radical mastectomy with lymphadenectomy, type Madden	17	60.71 %	TUMORS	Tumorectomy	17	58.62 %
	Paleative mastectomy	7	25%		Subcutaneous mastectomy	12	41.37 %
	Tumorectomy	4	14.28 %				
Total no. of breast cancers		28	100%	Total no. of tumors		29	100%

Table no. IV - No. of cases by breast location

Location	Tumors	Breast cancers	Total
Right side	9 (31.03%)	11(39.28%)	20(35.08%)
Left side	17(58.62%)	16(57.14%)	33(57.89%)
Bilateral	3(10.34%)	1(3.57%)	4(7.01%)
Total	29	28	57(100%)

Fig. no. 5A – Types of surgical procedures on breast cancers

Fig. no. 5B – Types of surgical procedures on tumors

Figure No. 6: Male breast cancer - right breast

Disucssion

Male breast cancer occurred in approximately 0.7 percent of the cases of breast cancer in the United States in 1987.[2] This incidence has changed little over the past 20 years.[3] In Manchester, England, a 0.7 percent incidence was reported, unchanged from the previous report in 1977.[19] Higher rates are reported in blacks, including 2.4 percent among West Africans in the report by Ajayi et al.[4] and a three percent incidence in black males by Nirmul et al.[5] An unusually high incidence is reported in Zambia, where 15 percent of all breast cancer is in males.[6] In Virginia, there is a disproportionately higher percentage of male breast cancer in black males (24 percent) in comparison with black females (16 percent).[7]

Estimated new cases and deaths from breast cancer (men only) in the United States in 2008 are: new cases - 1,990 and deaths - 450.

The incidence of breast pathology in males as part of the group was 5.62% (57 males on the whole of 1014 patients).

The analyse depend on the type of pathology points out the following dates: malignant pathology had an incidence of 6.16% (28 males of 454 cases with breast cancer) and benign one was 5.17% (29 males on the whole of 560 cases).

The values of breast cancer incidence on males in the last 6 years as part of the group from Surgery Clinic of Emergency Hospital Constanta are mush high comparative with dates from special literature (over 6 times high - 6.16% than 1%).

Male breast cancer presents at an older age than that found in females, with the average age at presentation being 63.6 years. It is quite rare in young males, with only seven cases reported in patients younger than 26 years.[8] A higher incidence of breast cancer has been reported among Jewish males and is suggested by a higher rate in Israel than in the United States.[9] Information regarding familial incidence is sparse.[10] Bilateral breast cancer in males occurs in about two percent of all cases.

From the point of view of distribution depending on age it's noticed that half of cases integrate oneself with the interval 41-60 years, the allocation is valid for the benign pathology and also for the malignant pathology.

Worthy of mentioning are the 3 cases with breast cancer diagnosed on the patients in age under 30, case that are seldom official announced on the world project.

This tendency appearance of breast cancer at smaller ages is supported also by the maximum top of incidence from the point of view of age as part of analysed group, which is about 50 years, comparative with average age of 63.6 years official announced in special literature.

Testicular hormonal factors appear to have a prominent role in male breast cancer.[11] There is a twentyfold increased incidence of Klinefelter's syndrome in male breast cancer patients, and recent information suggests a breast cancer risk of three percent among males with Klinefelter's syndrome.[12] The complication of mumps infection in males 20 years of age or older carries an increased risk of breast cancer, though other viral infections do not impart an increased risk.[6] A history of infectious orchitis was found in eight percent of 53 males with breast cancer, in contrast to only two percent with gynecomastia and none in colon cancer patients.[13] Although clinical gynecomastia has been observed in association with male breast cancer in some series (these are largely uncontrolled data), microscopic gynecomastia was identified in 42 percent of male breast cancer cases by Heller et al.[14] and 27 percent by Scheike et al.[16] There is no histological evidence of progression from gynecomastia to cancer, however, as gynecomastia is fairly common in normal adult males and little convincing evidence relates gynecomastia to male breast cancer.[17]

Occupational hazards may exert an effect. A review of the occupations of males with breast cancer show a higher frequency of chronic work exposure to heat in steel mills, blast furnaces, and rolling mills, which suggests that increased environmental temperatures may have a suppressive effect on testicular function, possibly potentiating the development of breast cancer.[6]

From the point of view of origin environment it's noticed the prevailing of urban environment compare with rural one, valid aspect for both types of pathology. Related with origin environment, the evaluation of life conditions reveals into a percentage of 10% the presence of alcohol and smoking consumption.

The significance of estrogens in male breast cancer has been considered. An increase urinary excretion of estrogen has been reported in male breast

cancer patients by Dao et al.,[18] although this is denied by Ribeiro,[19] who analyzed endogenous hormonal profiles in 31 male breast cancer patients and found no significant difference from controls. In his study, though there were modest but not significant increases in estradiol-17(3 and testosterone ($p = 0.11$), there were more distinctive increases in luteinizing hormone (LH) and follicle-stimulating hormone (FSH) ($p = 0.06$). More study is needed to provide a definitive answer to this question.

The development of breast cancer after radiation therapy for childhood cancer has been reported, and survivors of such treatment should be observed regularly.[21] The incidence of increased second primary cancer in males with breast cancer has been reported.[22] In a review of male breast cancer, the Virginia Tumor Registry has documented second malignancies in 11.2 percent of male patients with breast cancer.[7] The increased incidence of second malignancies may be related to age and environmental exposure (many of the lesions are cutaneous), as well as dietary factors (some series have increased frequencies of colorectal cancer).

Male breast cancer is commonly detected when it presents as a palpable mass. Public awareness of male breast cancer is leading to detection at an earlier stage. Other signs suggestive of male breast cancer include ulceration and nipple discharge, which should prompt immediate investigation. Diffuse unilateral or bilateral enlargement of the breast in the adolescent, though of concern for the individual and possibly suggestive of a systemic disorder, is rarely caused by breast cancer. Unilateral and bilateral enlargement in the young adult may be associated with a testicular tumor, and the testicles should be examined carefully in a male presenting with breast enlargement.

In the elderly male, breast enlargement should also be evaluated carefully to rule out breast cancer. Previous or coexisting diseases, testicular tumors, or medications can also cause unilateral or bilateral breast enlargement in the male.

Male breast cancer usually presents as a firm sub-areolar mass that is nontender. Tenderness is associated more commonly with gynecomastia. The distinction between a benign and malignant mass in the male breast is usually obvious. Although carcinoma is generally found in the elderly male, it has

been reported in the young male. Tissue evaluation is essential should the mass persist or if there is concern regarding possible malignancy.

Mammography is of limited use in the male because of the technical difficulty in obtaining the study. In obese males with large breasts and in some patients with gynecomastia, mammography has been a useful diagnostic procedure. The fatty breast is easy to penetrate, and the glandular pattern in gynecomastia is readily identified. Calcifications similar to those found in females have been identified in males with breast cancer. Evaluation of the opposite breast is essential in males with carcinoma of one breast. Ultrasonography has not been as beneficial as mammography in identifying male breast cancer.[23]

Galactograms performed on males with a nipple discharge have aided in localization of the abnormal ductal area when no mass is palpable. [24] Fine needle aspiration may help to distinguish between carcinoma and gynecomastia. In doubtful cases, however, a negative fine needle aspiration for cytology does not rule out carcinoma, and an open biopsy should be performed.

Estrogen and progesterone receptor studies should be performed on all males with breast cancer. Fresh tissue should be given to the pathologist at the time of biopsy, as additional tissue may not be available later. Male breast cancer receptor studies have revealed a high level of receptor activity in as many as 80 percent of the cases.[1, 19]

PATHOLOGY - Male breast cancer is ductal in origin. Lobular carcinoma is extremely rare, although one case has been reported involving a patient with Klinefelter's syndrome.[16] Infiltrating ductal carcinoma makes up 85 percent of cases, whereas intraductal carcinoma and papillary carcinoma are each found in approximately five percent of cases.[14] Tubular and colloid carcinoma are uncommon, and sarcoma is rarely reported.[25] Paget's disease does occur and is similar pathologically to that in females. Microscopic gynecomastia has been reported in up to 40 percent of cases, whereas clinical gynecomastia is rarely associated with male breast cancer. [17]

Analysing the location of tumoral pathology at males it's noticed the clear prevailing of location at the level of left breast (60%) with values almost equal for malignant and benign pathology.

Figure No. 7 : Male breast cancer - right breast

TREATMENT OF PRIMARY BREAST CANCER- Primary standard treatment is a modified radical mastectomy with axillary dissection. The central location of the tumor and the proximity of the tumor to the pectoral muscles led to the radical mastectomy with axillary dissection as the treatment of choice for male breast cancer.[3] In recent years, however, a modified radical mastectomy or a simple mastectomy with postoperative radiation therapy has been advocated.

Figure No. 8 : Mastectomy with axillary lymphadenectomy

Surgical intervention most used for the treatment of breast cancer was performed by radical changed mastectomy Madden type with under arm lymphadenectomy into a percentage

over 50% and for benign pathology most often was put into practice the tumorectomy and hypodermic mastectomy.

Figure No. 9 : Left subcutaneous mastectomy

The survival after treatment for male breast cancer has been reported significantly worse than in female patients with breast cancer, especially if positive nodes are present.[14,19,26] Other studies found no difference in survival when patients were considered by stage.[1, 22]

The Virginia Tumor Registry contains 154 analytical cases of male breast cancer from 1970 to 1984. The overall 5-year survival was 37.8 percent for blacks compared with 70.78 percent for whites. At each stage, a decreased survival for black males was evident when compared with whites. Similar survival data were evident for black females in the Virginia Tumor Registry. More data are needed for an analysis of the significance of this finding. The overall 5- and 10-year survival for patients with male breast cancer was 78 percent and 59 percent, respectively with negative nodes and 59 percent and 27 percent with positive nodes. The majority of cases were treated with some form of mastectomy, with the trend away from the Halsted radical; some lumpectomies are recorded. The local recurrence rate after surgical treatment of male breast cancer has been reported to be as high as 20 percent to 26 percent,[1, 22] prompting increased use of postoperative radiation therapy. Although adjuvant radiation did not affect survival, the local recurrence

rate was reduced.[19,22,27] Possibly the high local and regional recurrence rates are related to the central location of the tumor and the intimate proximity of the tumor to the underlying muscle and chest wall in the male in comparison to the female breast.

ADJUVANT THERAPY - In men with node-negative tumors, adjuvant therapy should be considered on the same basis as for a woman with breast cancer since there is no evidence that response to therapy is different for men or women.[28]

In men with node-positive tumors, both chemotherapy plus tamoxifen and other hormonal therapy have been used and can increase survival to the same extent as in women with breast cancer. Currently, no controlled studies have compared adjuvant treatment options. Approximately 85% of all male breast cancers are estrogen receptor-positive, and 70% of them are progesterone receptor-positive.[29] Response to hormone therapy correlates with presence of receptors. Hormonal therapy has been recommended in all receptor-positive patients. Responses are generally similar to those seen in women with breast cancer.[30]

Conclusion

Male breast cancer is an uncommon disease with an incidence that has remained fairly stable.

We need further investigation to establish plausible explanation of the higher incidence of breast cancer detected for the masculine population form Constanta District than the global incidence of male breast cancer.

The tumor presents as a mass and is of the

ductal type pathologically.

Treatment is by simple or modified mastectomy with the use of postoperative radiation therapy to reduce local recurrence in high-risk patients.

There appears to be a higher local recurrence rate in males, possibly because of central location of the tumor and the closer proximity of the tumor to underlying muscle and chest wall.

Overall survival rates for node-negative patients correspond favorably with those of females, but survival in node-positive male patients appears worse, suggesting a need for adjuvant therapy in that group.

The role of adjuvant therapy has not been determined, but the use of tamoxifen may be beneficial in node-positive patients.

Adjuvant chemotherapy in high-risk patients needs to be explored. The effectiveness of chemotherapy is less known, but early studies suggest a response similar to that in female breast cancer patients.

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