RESEARCH COMMUNICATION

Carcinoma of the Male Breast: a Study of 141 cases from Northern Pakistan

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Abstract

Carcinoma of the male breast, histologically identical to that seen in females, is a rare malignant epithelial tumour. We retrospectively studied 141 cases of male breast carcinoma diagnosed during a ten year period (1992-2001). These tumours comprised 0.7% of all cancers, 1.1% of all malignancies in males and 5.9% of all breast carcinomas in both genders. A male to female ratio of 1:16 was observed. The peak incidence was in the age group between 50-60 years and majority of the patients were below 60 years. Most of the patients presented with a painless lump and infiltrating ductal carcinoma was the main histological type. While compared with our previous similar analysis, a highly significant increase ($p<0.0001$) was found for total numbers of breast carcinoma in both sexes and total number of malignancies in males.

Key Words: Male breast cancer - clinical presentation - frequency

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Introduction

Carcinoma of the male breast is a rare disease and in western literature it is reported as, less than 1% of all breast cancers (La Vecchia et al.,1992). A high incidence, in a lower average age, with disease presentation in more advanced stage is reported in native Africans and Indians (Ihekwaba,1994; Jamal,2001; Vaizey et al.,1999). Predisposing factors include family history (in first degree female and male relatives), hormones (particularly high estrogen and prolactin levels), radiation exposure, hereditary factors and diseases associated with hyperestrogenemia like cirrhosis of the liver or genetic syndromes, such as Klinefelter disease (D' Avanzo et al.,1995; Sasco et al.,1993; Koc et al.,2001). Mostly such patients are in their late sixties and a palpable lump is the main presentation. Infiltrating ductal carcinoma is the main histological type reported in world literature. We here studied breast carcinoma cases occurring in males registered in our pathology based tumour registry over a period of 10 years (1992-2001), to establish there has been any change in the pattern from our similar previous analysis (Jamal et al.,1994).

Materials and Methods

Biopsy or mastectomy specimens were received at the Histopathology Department of the Armed Forces Institute of Pathology, Rawalpindi, Pakistan from various military and civil hospitals. All histologically diagnosed malignant tumours of male breast were entered into the pathology based tumour registry. The study included all breast carcinoma cases diagnosed from January 1992 to December 2001, a total of 141 . Basic epidemiological data regarding each case was collected from the patients directly or from their attending doctors. Adequate representative tissue sections from the breast lesions were taken as described (Rosai, 2004). The material was processed under standardized conditions for paraffin embedding. Histological characterization of tumours was performed according to the WHO classification (Tavassoli et al.,2003), while the microscopic grading of Bloom and Richardson (Nottingham modification) was adopted (Bloom et al.,1957). The Chi-Square test was used for statistical analysis.

Results

During the study period a total of 21,168 malignant tumours were reported, 12,584 in males and 8,584 in females. Carcinoma of male breast constituted 0.7% of all malignancies and 1.1% of all malignant tumours in males. During the period 2,235 malignancies of female breast were recorded. So the male to female ratio was 1:16 and carcinoma of the male breast comprised 5.9% of all breast malignancies in both genders.

The age range was 23-85 years. The majority of the patients (58%) were below 60 years of age, with the peak incidence between 50-60 years of age. Information regarding clinical presentation was available for 109 patients. The

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Table. Signs and Symptoms at Presentation (n=109)

	Clinical presentation	No	Percentage
1	Painless lump	75	68.8
2	Ulceration of skin	18	16.6
3	Painful/tender lump	6	5.5
4	Nipple changes*	10	9.2

* including ulceration, retraction and discharge

majority (68.8%) presented with a painless, mostly self-detected lump, followed by presentation as ulcerated skin, painful or tender lump and nipple changes (see the Table). In all of our patients the tumour was unilateral. The left breast was more frequently affected (65%).

In the majority of our patients (78%), the tumour size was more than 3.0 cm in contrast with Western data (Prechtel et al., 2003). Histologically, infiltrating ductal carcinoma predominated (92%). One patient had invasive papillary carcinoma and five cases were labeled as undifferentiated.

The results of the present study were compared with a similar previous study on the same population, over a period of 10 years (1980-1989). After taking in to account the annual growth rate and increase in population, the p-value was calculated against observed frequency and expected frequency of total breast carcinomas as well as total male malignant tumours. A highly significant two-tailed p-value ($p<0.0001$) was found for both parameters.

Discussion

Malignant tumours of the male breast are a rare occurrence and account for less than 1.0% of all breast cancers in both genders (La Vecchia et al.,1992). In the present study we have found them to make up 5.9% of all breast malignancies. A higher male to female (M:F) ratio of 1:16 has been found as compared to M:F ratio of 1:100 to 1:110, reported in Western studies (Hidson and Smart.,1974). Similar results have been reported in another study from Pakistan and in a few observations from underdeveloped countries as well as in black males (Bhagwandin,1972; Ojara,1978; Parkin et al., 1997). The disease also appears to be increasing, as a significantly increased registration of the disease was observed as compared to our previous analysis of male breast carcinoma in the same set up (Jamal et al.,1994). It is said that majority of such patients are seen after 60 years of age (Goss et al.,1999), but in our study >58% of the patients were below 60 years of age. So not only is the disease becoming more frequent but it also affects a slightly younger age group in our population.

The exact aetiology of the disease is unknown but some factors in common with those of females, have been implicated, like family history, hormones, radiation exposure (D' Avanzo et al., 1995; Sasco et al., 1993; Koc et al., 2001). Particular factors for males, like testicular disease, gynaecomastia, late puberty and infertility are also thought to be associated with an increased risk (Sasco et al.,1993; Petridouet al.,2000; Thomas et al.,1992). Hormonal factors qnd particularly high estrogen and prolactin are important and in a case control study, higher serum and urinary estrogen levels were observed (Nirmul et al.,1983; Rebeiro et al.,1980). Hepatic damage leading to hyperestrogenemia has also been implicated in some studies (Sorensen et al.,1998). Viral hepatitis and chronic liver diseases are becoming increasingly rampant in our population (Ahmed et al.,1997; Barrera et al.,1996). The possibility of this factor having aetiological role in our set up needs to be looked in to.

Clinical presentation, side of involvement, and histological type was similar to that reported in other observations but the size of the tumour at the time of presentation was > 3.0 cm in most of our cases, in contrast to western studies (Prechtel et al., 2003).

The data from this study shows that carcinoma of the male breast may be increasing in our population. Population based studies are required for confirmation of this finding.The possibility of its association with chronic liver diseases or otherwise, and determination of other etiological factors require extensive further case control studies.

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