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MALE BREAST CANCER - CASE REPORT AND BRIEF REVIEW

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Abstract
Male breast cancer is rare. It accounts for 0.2% of all cancers, and 1% of all breast cancers.

Most patients present late for several reasons, including the absence of early signs and symptoms, and reduced awareness of the existence of such pathology among patients and physicians. Reporting this case from among the Saudi population, we tried to observe any differences in clinical manifestation from those reported in the literature, and aimed to increase the value assigned to male breast as a source of pathology among patients and physicians as well.

Key Words: Breast carcinoma, male, Saudi population, clinical presentation, diagnostic and therapeutic modalities.

Introduction

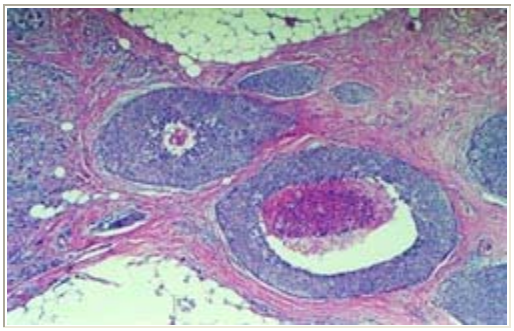
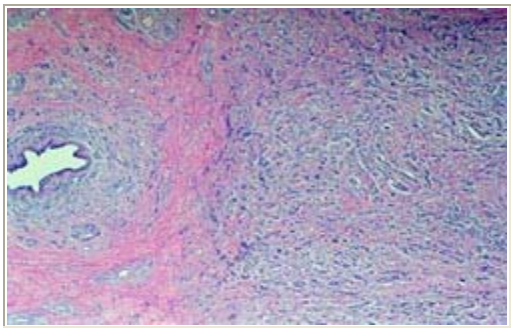
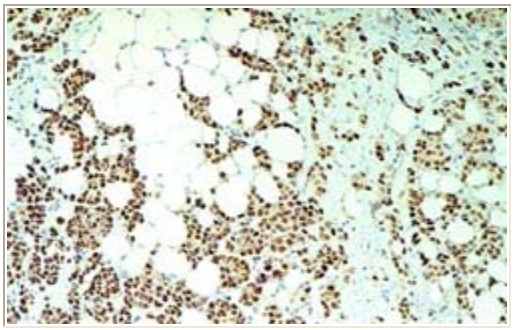
The epidemiology of male breast carcinoma in the Kingdom of Saudi-Arabia and the region is not known. However, it accounts for less than 0.1% of male cancers worldwide, and usually presents late in life at a more advanced stage.Risk factors have been basically attributed to old age, genetic, endocrine factors or exposure to radiation or female hormones.Decreased awareness of the existence of such a disease among male patients and physicians leads to its late presentation, when the majority of cases are invasive with distant metastasis and subsequently carry poorer prognoses. Specific mammographic characteristics of male breast cancer do exist, yet fine needle aspiration and surgical biopsy confirm the diagnosis and delineate the proper treatment modalities. Treatment modalities depend on the stage of the disease at presentation.

Presenting a case of male breast cancer among male Saudi population and reviewing related literature, we aim to highlight the importance of increased awareness towards the existence of such disease among the Saudi population, and to observe any differences in clinical manifestation from those reported in literature.

Case Report

A seventy eight year old Saudi male presented to our outpatient clinic with left breast pain of two month's duration. Examination revealed a 2 x 1 cm hard medial sub-areola tender mass with irregular borders almost fixed to underlying structure. This was associated with mild left nipple retraction and a 1 x 1 cm non-tender left axillary node. The mammography report noted: 'A 1.5 cm stellate mass of left breast consistent with carcinoma. Two small lymph nodes present at left upper outer quadrant, one dense in craniocaudal view and may be involved with metastasis.' Carcino-embryonic antigen (CEA), liver function tests, calcium, prostatic specific antigen, right upper quadrant ultrasound and chest x-ray were reported as normal. A fine needle aspiration revealed findings consistent with invasive carcinoma. The patient underwent modified left radical mastectomy with right axillary sampling.

Histopathological examination of the tumor revealed infiltrating ductal carcinoma, moderately differentiated (Grade 2 according to Modified Scarff- Bloom-Richardson grading system). There were cords and nests of malignant epithelial cells embedded within dense collagenous stroma; some are surrounding normal non-neoplastic ducts (Figure 1). In addition, there were foci of intraductal comedo carcinoma featuring dilated ducts lined by malignant epithelial cells with central necrosis (Figure 2).

Figure 1: Foci of intraductal comedocarcinoma feauturing dilated ducts filled by malignant epithelial cells with central necrosis.	
Figure 2: Cords and nests of malignant epithelial cells embeded with dense collagenous stroma;some are surrounding normal non-neoplastic ducts.	
Figure 3: Immunohistochemical staining of tumor cells showed strongly positive nuclear staining for estrogen receptors.	

Immunohistochemical staining of tumor cells showed strongly positive nuclear staining for estrogen and progesterone receptors (Figure 3) and negative staining for HER-2neu protein over-expression. Histological examination of the left axillary nodes showed that three of the seven lymph nodes dissected from the axilla were harboring deposits of metastatic ductal carcinoma. The other four lymph nodes showed findings consistent with dermatopathic lymphadenopathy.

The patient's course a few months after the operation remained uneventful. Patient one month back at age of 80 years; two years after being diagnosed and treated was admitted with diagnosis of mild dehydration due to poor feeding and managed supportively and discharged home. During his hospitalization metastasis work up included Chest-x ray, ultrasound of liver, liver function tests, CBC and calcium were negative.

Discussion

There is no comprehensive data on male breast cancer in Saudi Arabia or in the Middle East, however, the American Cancer Society estimates that in the year 2001, 1500 new cases of male invasive breast cancer will be diagnosed in the USA. Breast cancer is 100

times more common in women than in men. It accounts for < 1% of male cancers. It usually occurs in men of advanced age and is often detected at a more advanced state.

Genetics, exposure to radiation, endocrine problems and history of benign breast lesions are common risk factors in both men and women. Specifically to men, however, risks also include old age, high socio-economic status, exposure to female hormone (patients with prostatic cancers on Estrogen treatment), and patients with reduced testicular function (Kleinfelter's Syndrome, mumps orchitis, and undescended testicles).

Patients with hyperprolactinemia and/or gynecomastia have also been associated with male breast cancer, though to lesser extent.

A painless lump beneath the areola, usually discovered by the patient himself, is the most common presenting symptom in patients with male breast cancer. Cancer size is usually less than 3 cm in diameter and usually associated with nipple retraction, discharge, and fixation of breast tissue to skin and muscles. Breast pain occurs less frequently, and approximately 50% of men with breast cancer have palpable axillary lymph nodes.

Mammography detects 80-90% of patients with breast cancer who present with suspicious masses. Mammographic characteristics of male breast cancer are sub-areola and eccentric to the nipple. According to Appelbaum et al, "Margins of the lesions are well defined, calcifications are rarer and coarser than those occurring in female breast cancer"6. Fine needle aspiration and surgical biopsy in high-risk patients will confirm the diagnosis and provides an indication about potential response to hormonal treatment. Though male breast cancer represents only 1% of all breast cancers, 80-90% of cancers are infiltrating (invasive) ductal carcinoma, mostly because of delayed diagnosis. This type of cancer breaks through the duct wall and invades surrounding fatty tissues. The early stage of the disease is ductal carcinoma in situ; cancer is confined and limited to ducts. Paget's disease of the nipple, lobular carcinoma and sarcoma are far less common in male breast cancers compared to female.

The presence of cancer cells in axillary lymph nodes through tissue diagnosis delineates the extent of spread of disease. Distant metastases include bone, lung, lymph node, liver and brain involvement. Radical mastectomy with subcutaneous reconstruction is the most frequently used procedure, while simple mastectomy remains limited to patients either with good prognosis and/or to those patients with very poor prognosis and at high risk for extensive surgery. Hill et al, reported an overall five year and ten year survival rate in patients with localized disease to 86% and 64% respectively. With positive lymph nodes, the five and ten year survival rate decreased to 73% and 50% respectively.

Radiation therapy is used for patients with localized disease and a high risk for surgery, but it is given more often to alleviate symptoms in patients with advanced disease. Patients with extensive metastatic disease are treated by hormonal manipulation where two thirds of these patients respond to hormonal therapy. Chemotherapy is another alternative mode of treatment.

Ablation treatment has been successful in some cases. Orchidectomy is the initial procedure in this option, due to the relatively good response and relatively decreased side effects and complications. If this is not successful, adrenalectomy and hypophysectomy show comparable results. These therapies lead to tumor regression, relief of symptoms and an increase in the survival rate. Finally, additive hormonal therapy; synthetic estrogen (DES) Diethylstilbestrol showed relative effectiveness in one study.

Male breast cancer, though very rare, does exist. Efforts to increase awareness among patients and physicians will lead to earlier presentation, and therefore diagnosis before spreading to the axilla and other organs. Like the majority of cancers, male breast cancer can be cured or controlled if diagnosed and treated properly at its early stages. Clinical presentation of our Saudi male patient resembled those reported in literature. However, conclusions regarding therapeutic modalities and related prognosis need further larger studies.

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