



Male Breast Cancer Diagnosis and Treatment at Tertiary Cancer Center in Nepal

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Abstract

Background: Male breast cancer diagnosis and treatment at a B.P. Koirala Memorial Cancer Hospital (BPKMCH)

Method: Male breast cancer patients diagnosed and treated at BPKMCH, Triple Assessment (Clinical examination, pathological examination, Radiological evaluation).

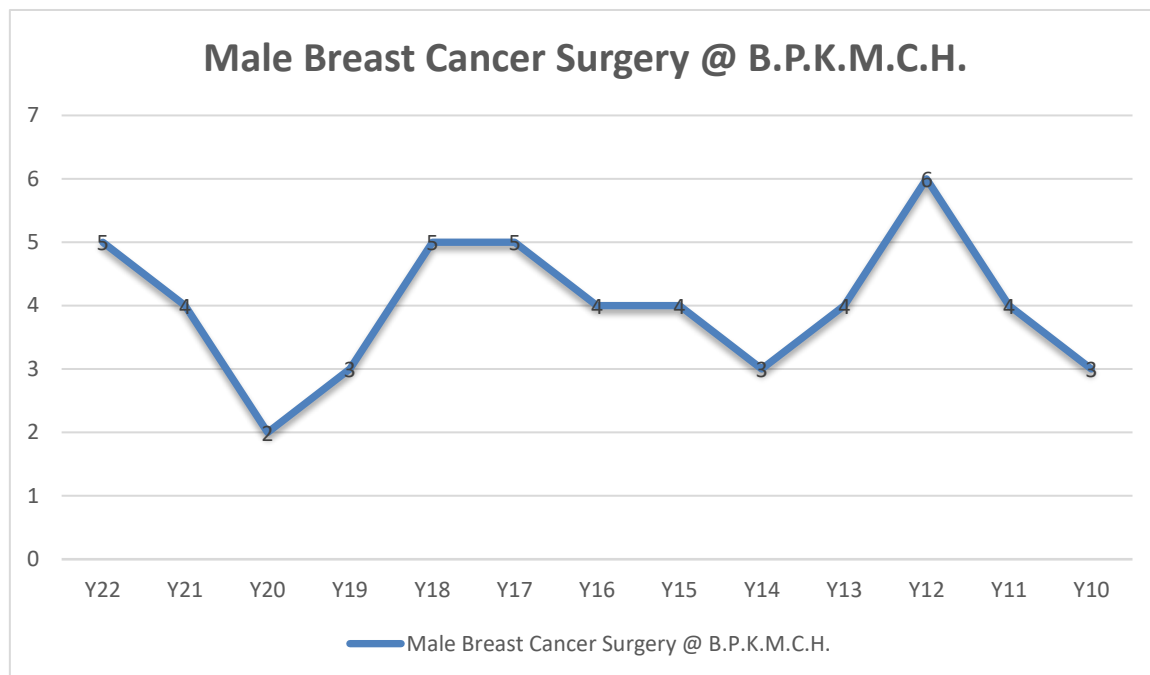
Results: Most patients present with advanced stage invasive breast carcinoma, not other specified types with E.R. (Estrogen Receptor) positive, P.R. (Progesterone Receptor) positive, HER2 (Human Epidermal Growth Factor) Negative, Ki67 – Low. Male individuals often experience delayed presentation for the evaluation of breast lumps, primarily due to a lack of awareness regarding male breast cancer. This lack of knowledge contributes to delayed diagnosis and treatment initiation.

Introduction

Breast cancer is a highly prevalent disease that is limited to the female sex, male breast cancer accounts for less than 1% of all breast cancers(1). The infrequency of breast cancer in men has created difficulties in accurately characterizing the disease and defining optimal therapy for men diagnosed with breast cancer(2).

Traditionally, male breast cancer was thought to be similar to post-menopausal female breast cancer, but emerging evidence suggests that male breast cancer may be different.

Anatomic and hormonal differences allow a more comprehensive understanding of locoregional control and hormonal influences (estrogen receptor, progesterone receptor, human epidermal growth factor, Ki67) with a more limited spectrum of endogenous and exogenous estrogen stimulation in men (1). The incidence of male breast cancer steadily increases with age (3).



Discussion

Male breast cancer is an uncommon condition that poses distinctive difficulties in its diagnosis and treatment. To ensure the best possible management, a multidisciplinary approach is crucial. The diagnosis of male breast cancer requires a high index of suspicion, as the disease is often diagnosed at a later stage than female breast cancer (2). Treatment typically involves surgery, chemotherapy, radiotherapy, and hormone therapy, depending on the tumor's characteristics (4). The use of these treatment modalities in male breast cancer is similar to that in female breast cancer. (5)

Clinical assessment:

The most common symptom of breast cancer is a painless subareolar mass that is readily apparent on physical examination (6). Which is present alone or with axillary lymph nodes. B.P. Koirala Memorial Cancer Hospital has observed a higher incidence of male patients with breast cancer masses located on the right side compared to the left side.

Due to the smaller size of breast tissue in males, the involvement of the nipple, characterized by nipple retraction and skin ulceration, is observed early in the progression of the malignant process. Additionally, men with breast cancer commonly present with axillary lymph node involvement more frequently than women. Special types of breast carcinomas can occur in male as in females. In rare cases, male breast cancer can present as an occult primary with lymph nodes metastases.

Risk factors for male breast at BPKMCH elicited on history taking is Smoking, Alcohol, Gynecomastia. However, there is no association of high fat diet, socio economic status, or hormone therapy. Poor awareness among general population and primary health care providers regarding male breast cancer most patients present at an advanced stage with axillary metastasis.

Radiological assessment

Breast ultrasound shows malignant lesions as solid / cystic mass with irregular margin and architectural distortion with loss of normal fat-parenchyma. FNAC and CNB are mandatory to confirm malignancy. Ultrasound is also used for examination of axillary lymph nodes, supraclavicular, infraclavicular and internal mammary lymph nodes.

Pathological Assessment

Fine-needle aspiration cytology results showing the presence of cancerous cells may indicate ductal carcinoma in situ rather than invasive cancer, Opting for a core biopsy is preferable over a fine-needle biopsy as it offers a definitive diagnosis of invasive breast cancer. Furthermore, core biopsy offers a tissue sample comparable to that of open biopsy without requiring a formal surgical procedure.

The confirmation of diagnosis and determination of breast cancer subtype requires histological examination. Male breast cancer usually appears as either invasive ductal carcinoma (IDC) or ductal carcinoma in situ (DCIS), which is similar to female breast cancer (6). To help with treatment decisions, immunohistochemistry (IHC) can identify the hormone receptor status, including estrogen and progesterone receptors, and the human epidermal growth factor receptor 2 (HER2) status (3).

Histopathology

The most prevalent type of male breast cancer is invasive ductal carcinoma, accounting for more than 90% of cases(7). Other types of male breast cancer, from most to least common, include ductal carcinoma in situ, adenocarcinoma not otherwise specified, invasive papillary carcinoma, medullary carcinoma, mucinous carcinoma, inflammatory carcinoma, phyllodes tumor, leiomyosarcoma, Paget's disease, and lobular carcinoma(7). Male breast tissue does not form lobules unless exposed to high levels of estrogen. Lobular carcinoma only accounts for 1.5% of invasive cancers and has been reported in males with Klinefelter's syndrome and in genotypically normal males with no history of estrogen exposure(1). Ductal carcinoma in situ represents 10% of male breast cancer cases, with most being papillary carcinomas. Male breast cancer types are similar to those in females, with invasive carcinomas of no special type being the most common subtype, followed by invasive papillary carcinoma and invasive micropapillary carcinomas. Male breast cancers are more likely to be hormone receptor-positive than female breast cancers, and the most common phenotype is the luminal subtype. BRCA2 mutations are found in 4-40% of male breast cancers, and these cancers show a significant association with HER2 over-expression and negative PR, which may contribute to more aggressive behavior if the tumor is also high grade (7).



Male Breast Cancer Post 3 NACT

Management protocol at BPKMCH:

Diagnosis: The first step in managing male breast cancer is an accurate diagnosis. This involves a physical examination, imaging tests such as ultrasound, and a biopsy to confirm the presence of cancer cells in the breast tissue.

Surgery: In most cases, removal of the affected breast tissue is done for male breast cancer. This may involve removing the entire breast or removing the breast tissue along with the underlying adhered muscles with primary tumor. Axillary Lymph nodes Level -I and Level -II are removed.

Chemotherapy: Locally advanced male breast cancer receives NACT (neoadjuvant chemotherapy) for downstage of tumor for feasibility of surgery. ACT (adjuvant chemotherapy) 6 to 8 cycles is given to most of the patients. TAC regimen is followed at BPKMCH.

Radiation therapy: After surgery, radiation therapy is recommended to patients with pathological node positive results, to destroy any remaining cancer cells and reduce the risk of recurrence. Radiation therapy typically involves 40 Gray radiation to the chest area over 3 weeks. Total 15 fraction of radiotherapy is given.

Hormone therapy: Male breast cancer is often hormone receptor-positive, meaning the cancer cells have receptors for estrogen and progesterone. Hormone therapy drugs, tamoxifen 20mg once a day is prescribed for a period of 5 Years.

Follow-up and surveillance: Regular follow-up visits and monitoring are essential after the initial treatment. This may involve physical examinations, imaging tests, blood tests, and other diagnostic procedures to ensure early detection of any recurrence. At BPKMCH we advise patients to follow-up every 3 months for the first 3 years and then every 6 months for 2 years, and yearly afterward.

Conclusion

Male breast cancer diagnosis should involve a systematic and organized approach similar to that used for female breast cancer. It is important to give careful attention and thorough evaluation to breast complaints, particularly in high-risk individuals, in order to avoid misdiagnosis. Greater public awareness is needed to encourage men to seek medical care for breast changes. The most typical clinical presentation is a firm mass

located behind the nipple in the breast of a man in his sixties, which is deemed suspicious after ultrasonography, and is most frequently diagnosed as stage II or III invasive ductal carcinoma after FNAC / CNB. Routine surveillance and follow-up should be mandatory to detect any early recurrence. All male breast cancer patients should receive SERM (Tamoxifen 20 mg OD) for 5 Years.

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