

It's Not Just Women - A Case Report of Sporadic Invasive Ductal Carcinoma in a Male

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ABSTRACT

Male breast carcinoma is a type of cancer that affects the breast tissue in men. It is an unusual condition, accounting for an incidence of 1 in 1000,000 male population. The mean age of discovery of male breast carcinoma is approximately 67 years and that of invasive ductal carcinoma is approximately 70 years. Multiple risk factors for male breast cancer including family history of carcinoma of breast, exposure to high levels of estrogen, and certain genetic mutations such as BRCA2 have been associated, but sporadic male breast cancers are much more rare. Treatment options for male breast cancer may include surgery, radiation therapy, and chemotherapy. Early detection and prompt treatment are important for improving outcomes for men with this condition. In this case report, we present a 52 year old male who presented to us 2 years ago complaining of a fungating growth in the left nipple for a year with no family history. Biopsy proved invasive ductal carcinoma and he underwent modified radical mastectomy, and is currently on endocrine therapy. This case report emphasizes the fact that due to the rarity of the condition, it can sometimes be missed. Any lump in the male breast has to be carefully investigated and treated thoroughly to avoid further complications. This case report also proved that men too undergo radical surgeries for breast alongside women for certain conditions.

INTRODUCTION

Male breast cancer (MBC) is a rare phenomenon accounting for about 1% of all breast cancer cases [1, 2]. A study shows that the estimated incidence is one for hundred thousand men in the general population. Though multiple reforms are present for screening and diagnosing breast cancer in women, in men this pathology is generally overlooked. But with newer emerging techniques and reforms, there is a better survival rate for breast cancer. Invasive ductal carcinoma is the most common male breast cancer with a peak incidence at 71 years. This case report is of a 52 years old male with no family history who presented with a sporadic fungating growth of left nipple-areolar region was diagnosed with invasive ductal carcinoma (proven by biopsy), its management and follow-up.

CASE PRESENTATION

A 52 year old male was referred to the Surgery out-patient department with a history of a growth over the left nipple, with swelling in the left axilla for 2 years. Swelling of the nipple was insidious in onset, gradually progressing with no sudden increase in size, nipple distortion was present. It was not associated with pain, fever or local rise in temperature, trauma, nipple discharge, skin changes, chest pain, cough, hemoptysis, loss of appetite or weight. There were no features suggestive of metastasis. No similar complaints on the opposite side or in the past. Patient had a history of occasional alcohol consumption; non smoker, with no known comorbidities. A peculiar point to note was that there was no history of breast carcinoma in the family or any other cancer. No surgical or past treatment history.

On physical examination, the general condition seemed fair with no pallor, icterus, clubbing, pedal edema or lymphadenopathy. Vitals were within normal limits. On local examination of both the chest regions, they were

similar with both nipple-areolar complexes at the same level. On the left side, a single 2x2.5cm ulceroproliferative growth over the left chest region involving the nipple-areolar complex was present with no evident bleeding or discharge from the growth. The nipple areolar complex was disrupted. The skin around the ulceroproliferative growth appeared normal. On palpation, there was no warmth/tenderness, hard, non-tender lump with ulceroproliferative of size about 2x2.5cm did not bleed on touch, hard in consistency, not fixed to underlying structures or skin, and moving along with breast tissue (FIGURE 1 and FIGURE 2). The right breast and nipple-areolar complex were normal. There was a palpable hard node in the left axilla measuring 1x1.5cm; there were no palpable nodes in the right axilla, inframammary, infraclavicular or supraclavicular regions on either side. Other systemic examinations and external genitalia were normal. A provisional diagnosis of primary breast carcinoma or secondary from other occult carcinoma was made.

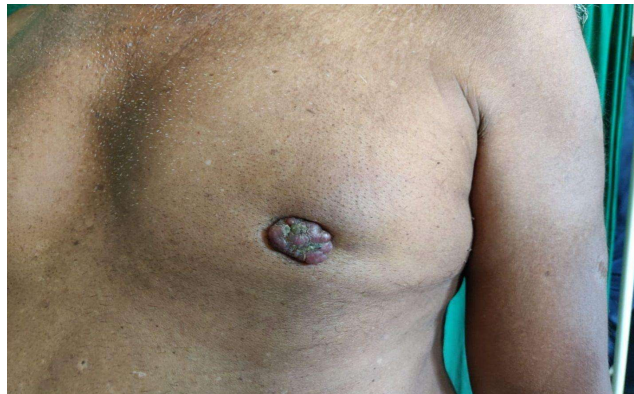


Figure 1 - Gross Clinical Image of the Patient's Left Nipple Areolar Complex - Anterior View

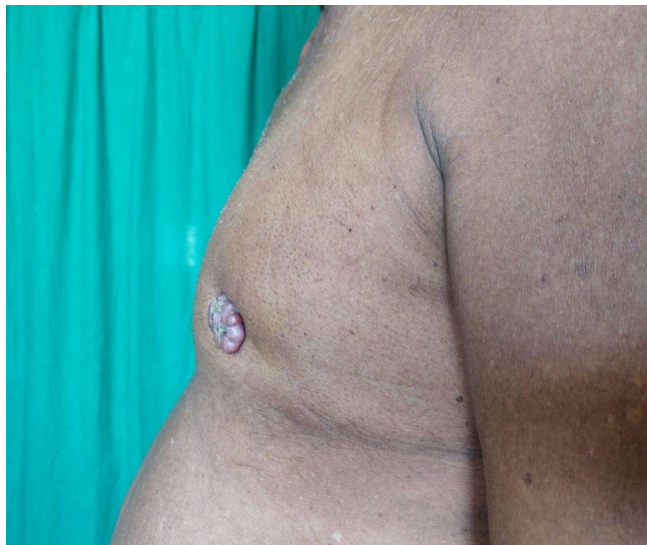


Figure 2 - Gross Clinical Image of the Patient's Left Nipple Areolar Complex - Lateral View

On Sonomammogram, findings were of a high density noncalcified mass in the left breast. Ultrasound of both the breasts and axilla showed a 20x14x13mm irregular taller than wider hyperechogenic lesion involving the left nipple-areolar complex and the retro areolar region in the subcutaneous plane. Multiple subcentrimetric non matted lymph nodes present on the same side. Right breast and axilla did not show any significant change or nodes. Breast Imaging Reporting and Data System (BIRADS) score V - highly suggestive of malignancy. Subsequent Trucut biopsy of the lesion showed invasive ductal carcinoma. In February 2022, the patient underwent modified radical mastectomy of the left breast (Figure 3).

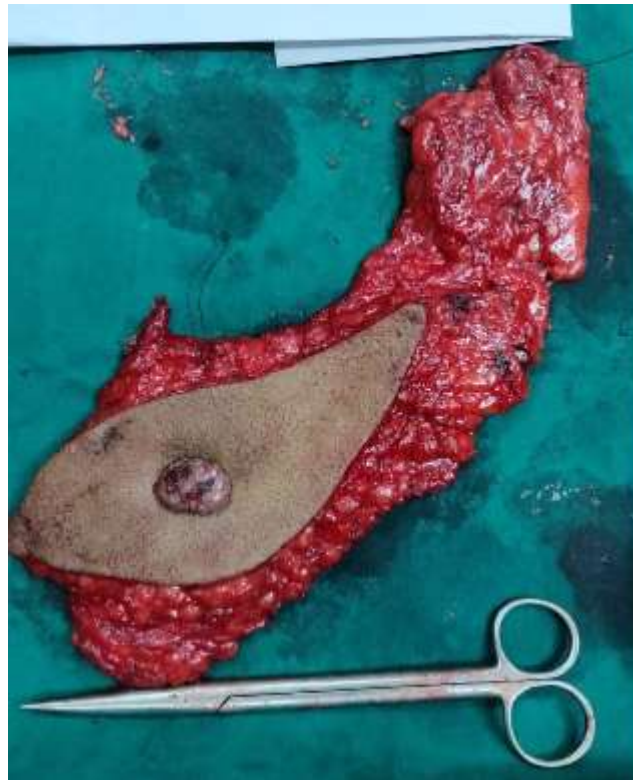


Figure 3 - Gross Specimen of Left Breast Post Left Sided Modified Radical Mastectomy

Histopathology showed an island of neoplastic cells with increased N:C ratio, hyperchromatic nuclei and nucleoli along with comedo necrosis-invasive ductal carcinoma, with negative surgical margins and no nodal involvement. Immunohistochemistry (IHC) markers were estrogen receptor positive, hence the patient was started on Tamoxifen therapy and was followed up regularly.

DISCUSSION

The presentation of carcinoma of breast in men is similar to that of women. Approximately half the cases of breast carcinoma in men are diagnosed in the late stages of stage III or stage IV [1] even though the total incidence is less than one percent of all malignancies in male [2]. The treatment and management is similar to that of women with breast carcinoma [3]. In general, the presentation ranges from a mass or lump in the breast, thickening of skin over the breast, dimpling, puckering or scaling over the skin. In adolescents and young males, the presentation of a lump can sometimes be misdiagnosed for gynecomastia leading to delay in treatment thus this age is shown to have poor prognosis [4, 5].

In men, the age when breast cancer is generally diagnosed is approximately 63 to 65 years [6]. Similar studies of invasive male breast carcinoma were reported by Madeira M et al. [7] and by Nielsen and Jakobsen [8]. Although in most male breast carcinoma cases BRCA2 gene mutation was considered an important link, in some reports the role of BRCA1 mutation was found to be as high as 20% [9, 10, 11]. Cirrhosis of liver, external trauma to testis and exogenous estrogen and certain conditions such as Klinefelters syndrome and Cowden's syndrome are related to male breast carcinoma [12, 13]. In certain studies, gynecomastia was present in up to forty percent of male breast carcinoma cases [14], though it was absent in our patient. Interestingly, it was found that there was more risk involved for men with respect to contralateral breast cancer spread as compared to women [15].

Progesterone receptors were found to be positive in 8 out of 10 MBC cases and estrogen receptors in 9 out of 10 cases making it more common in MBC. Due to limitations of data, all treatment modalities for women were comparable and followed for men. In patients with MBC responsive to endocrine therapy, Tamoxifen is

considered an outstanding option. Similarly in our case, IHC was ER positive, PR and HER2 negative hence the patient was advised Tamoxifen therapy. Due to limited existing knowledge regarding adjuvant chemotherapy, its role in overall survival is debatable [8]. In the case of younger males, cryopreservation of sperm is a good choice due to the uncertainty of period infertility after chemotherapy [16]. Due to a lesser volume of breast tissue, in MBC modified radical mastectomy is preferred over breast conservation surgeries.

Although there is a general delay in diagnosis of MBC the overall survival is similar for men and women with breast cancer. The survival outcome is determined by the tumor size and stage, its nodal status and metastasis, similar to women [17].

CONCLUSIONS

Invasive ductal carcinoma, a subcategory of MBC, is extremely unusual in middle age. It generally occurs in the seventh decade of life. Genetic mutations are the most likely etiology studied so far. MBC ranging from young males to elderly can be mistaken and misunderstood easily which can result in delay in treatment. Thus, this unusual condition needs further studies for better understanding and prompt treatment.

REFERENCES

1. Fentiman IS, Fourquet A, Hortobagyi GN. Male breast cancer. *Lancet*. 2006 Feb 18;367(9510):595-604. doi: 10.1016/S0140-6736(06)68226-3. Erratum in: *Lancet*. 2006 Jun 3;367(9525):1818. PMID: 16488803.
2. Gennari R, Curigliano G, Jereczek-Fossa BA, Zurrida S, Renne G, Intra M, Galimberti V, Luini A, Orecchia R, Viale G, Goldhirsch A, Veronesi U. Male breast cancer: a special therapeutic problem. Anything new? (Review). *Int J Oncol*. 2004 Mar;24(3):663-70. PMID: 14767551.
3. Czene K, Bergqvist J, Hall P, Bergh J. How to treat male breast cancer. *Breast*. 2007 Dec;16 Suppl 2:S147-54. doi: 10.1016/j.breast.2007.07.024. Erratum in: *Breast*. 2008 Jun;17(3):319. Kamila, Czene [corrected to Czene, Kamila]; Jenny, Bergqvist [corrected to Bergqvist, Jenny]; Per, Hall [corrected to Hall, Per]; Jonas, Bergh [corrected to Bergh, Jonas]. PMID: 18210656.
4. Ahmad, R., Lewis, S., & Maharaj, D. (2010). A male patient from the West Indies with invasive ductal carcinoma in the right breast: A case report and literature review. *Gender Medicine*, 7(2), 179–183. <https://doi.org/10.1016/j.genm.2010.04.003>
5. Giordano SH. A review of the diagnosis and management of male breast cancer. *Oncologist*. 2005 Aug;10(7):471-9. doi: 10.1634/theoncologist.10-7-471. PMID: 16079314.
6. Cutuli B. Strategies in treating male breast cancer. *Expert Opin Pharmacother*. 2007 Feb;8(2):193-202. doi: 10.1517/14656566.8.2.193. PMID: 17257089.
7. Nielsen US, Jakobsen EH. En 32-årig mand med brystkræft [Breast cancer in 32-year-old male]. *Ugeskr Laeger*. 2008 May 5;170(19):1663. Danish. PMID: 18489882.
8. Madeira M, Mattar A, Passos RJ, Mora CD, Mamede LH, Kishino VH, Torres TZ, de Sá AF, dos Santos RE, Gebrim LH. A case report of male breast cancer in a very young patient: what is changing? *World J Surg Oncol*. 2011 Feb 3;9:16. doi: 10.1186/1477-7819-9-16. PMID: 21291532; PMCID: PMC3039618.
9. Frank TS, Deffenbaugh AM, Reid JE, Hulick M, Ward BE, Lingenfelter B, Gumpfer KL, Scholl T, Tavtigian SV, Pruss DR, Critchfield GC. Clinical characteristics of individuals with germline mutations in BRCA1 and BRCA2: analysis of 10,000 individuals. *J Clin Oncol*. 2002 Mar 15;20(6):1480-90. doi: 10.1200/JCO.2002.20.6.1480. PMID: 11896095.
10. Friedman LS, Gayther SA, Kurosaki T, Gordon D, Noble B, Casey G, Ponder BA, Anton-Culver H. Mutation analysis of BRCA1 and BRCA2 in a male breast cancer population. *Am J Hum Genet*. 1997 Feb;60(2):313-9. PMID: 9012404; PMCID: PMC1712407.

11. Haraldsson K, Loman N, Zhang QX, Johannsson O, Olsson H, Borg A. BRCA2 germ-line mutations are frequent in male breast cancer patients without a family history of the disease. *Cancer Res.* 1998 Apr 1;58(7):1367-71. PMID: 9537231.
12. Misra SP, Misra V, Dwivedi M. Cancer of the breast in a male cirrhotic: is there an association between the two? *Am J Gastroenterol.* 1996 Feb;91(2):380-2. PMID: 8607512.
13. Phillips M, Timek E. Metastatic breast cancer in a transgender female with history of mantle field radiation and free silicone breast injections: case report. *Transl Breast Cancer Res.* 2022 Jul 30;3:28. doi: 10.21037/tbcr-22-25. PMID: 38751536; PMCID: PMC11093017.
14. Madeira, M., Mattar, A., Passos, R.J.B. et al. A case report of male breast cancer in a very young patient: What is changing?. *World J Surg Onc* 9, 16 (2011). <https://doi.org/10.1186/1477-7819-9-16>
15. Gómez-Raposo C, Zambrana Tévar F, Sereno Moyano M, López Gómez M, Casado E. Male breast cancer. *Cancer Treat Rev.* 2010 Oct;36(6):451-7. doi: 10.1016/j.ctrv.2010.02.002. Epub 2010 Mar 2. PMID: 20193984.
16. Saito K, Suzuki K, Iwasaki A, Yumura Y, Kubota Y. Sperm cryopreservation before cancer chemotherapy helps in the emotional battle against cancer. *Cancer.* 2005 Aug 1;104(3):521-4. doi: 10.1002/cncr.21185. PMID: 15968690.
17. Park, S., Cho, Y. U., Kim, S. J., & Hur, M. H. (2017). A case report of 29-year-old male patient with breast carcinoma. *Korean Journal of Clinical Oncology*, 13(1), 50–53. <https://doi.org/10.14216/kjco.17007>