Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Radiation Oncology

Male Breast Cancer: Two Case Studies and Review of the Literature

Hind Ameur[1*], Motsatsa Mosolino Gédéon[1], Samir Barkiche[1], Nezha Oumghar[1], Abdelhamid El Omrani[1], Mouna Khouchani[1]

[1]Radiation Oncology Department, Mohammed VI Teaching Hospital, Marrakesh, Morocco

DOI: 10.36347/sjmcr.2024.v12i06.001 | **Received:** 06.04.2024 | **Accepted:** 09.05.2024 | **Published:** 01.06.2024

***Corresponding author:** Hind Ameur
Radiation Oncology Department, Mohammed VI Teaching Hospital, Marrakesh, Morocco

Abstract **Case Report**

Male breast cancer (MBC) is a rare disease, accounting for 1% of all breast cancers and 0.5% of all malignancies in men. While long considered stable, MBC incidence has increased 26% over the past 25 years. Despite this rise, MBC remains poorly recognized by the public and sometimes clinicians, risking delayed diagnosis and poor prognosis cases. This rarity also impacts treatment, as men have received little research attention and management largely relies on evidence from women. Currently, MBC has become a topic of interest to uncover similarities between males and females to better tailor therapeutic approaches. We present two cases - a 56-year-old man with a 2-year history of a 2cm retroareolar left breast mass, diagnosed as grade III invasive ductal carcinoma, and a 38-year-old man with a 4cm retroareolar left breast mass complicated by bloody nipple discharge, diagnosed as grade II invasive ductal carcinoma. Both underwent mastectomy and axillary dissection followed by adjuvant radiation and hormonal therapy. MBC diagnosis relies on triple assessment like female breast cancer. While rare, raising MBC awareness is crucial for timely diagnosis and management per evidence-based guidelines, warranting further research into this malignancy affecting men.

Keywords: Male breast cancer, prognosis cases, retroareolar left breast mass, hormonal therapy.

INTRODUCTION

Male breast cancer (MBC) is a rare disease, accounting for 1% of all breast cancers and 0.5% of all malignant tumors in men [1]. The incidence of MBC has been considered stable for a long time, but it has been observed that over the past 25 years, there has been a 26% increase [1]. Despite its low incidence, this disease is often not well-known by the general public and sometimes even by the medical community, leading to a risk of delayed diagnosis and cases with reserved prognosis [2, 3]. This rarity also has an impact on the therapeutic aspect, as men have received little attention in the field of research, and their treatment largely relies on the available evidence from women [4-6]. Currently, male breast cancer has become a topic of interest for researchers in order to identify the differences between women and men and adapt the therapeutic management accordingly.

CASE REPORTS

Case N1

A 56-year-old man with no significant medical history presented to the Oncology-Radiotherapy Department of the Mohammed VI University Hospital in Marrakech with a left breast mass that had been evolving for 2 years. The mass was painless, located retroareolarly, measuring 2cm in firm consistency without nipple or skin retraction, without inflammatory signs, and mobile in relation to the pectoralis major muscle, with no involvement of the lymph nodes. The lesion was clinically classified as T2N0Mx according to the TNM classification and ACR5 radiologically based on breast ultrasound (Figure 1). The biopsy was consistent with grade III invasive ductal carcinoma, not otherwise specified (NOS), with positive hormone receptor status (HR+), 15% Ki67, and negative HER2 status (luminal B) (Figure 4B). The staging workup, including a thoracoabdominal CT scan, did not reveal distant metastases. The patient underwent radical treatment, including a modified radical mastectomy with axillary lymph node dissection (Figure 3B). The final pathological examination confirmed the histological type, grade, and IHC profile, with a tumor size of 3 cm and clear margins, and the axillary lymph node dissection revealed 3 metastatic nodes out of 17 sampled without capsular rupture or vascular invasion. After discussion in the multidisciplinary tumor board, the decision was to proceed with radiotherapy due to lymph node involvement, along with hormonal therapy using

tamoxifen. Additionally, a bone scintigraphy, urology consultation, and genetic study to investigate genetic predisposition were requested, but no abnormalities were found.

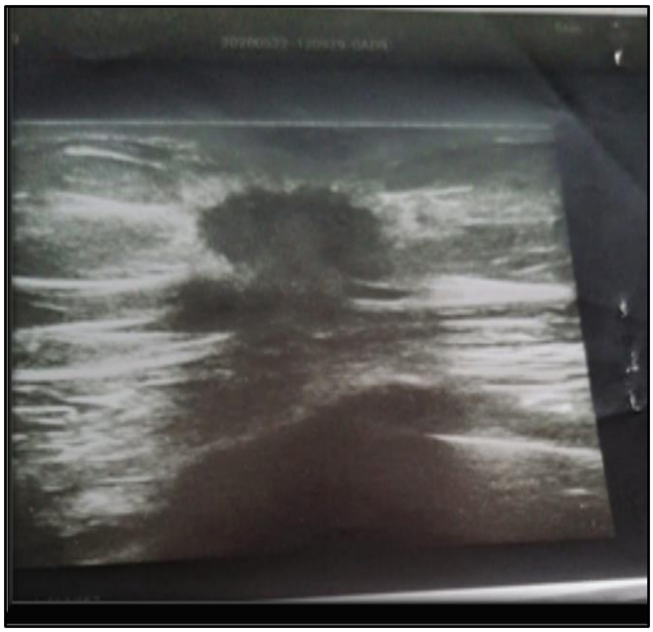

Figure 1: Breast ultrasound showing a tissue lesion classified as ACR5

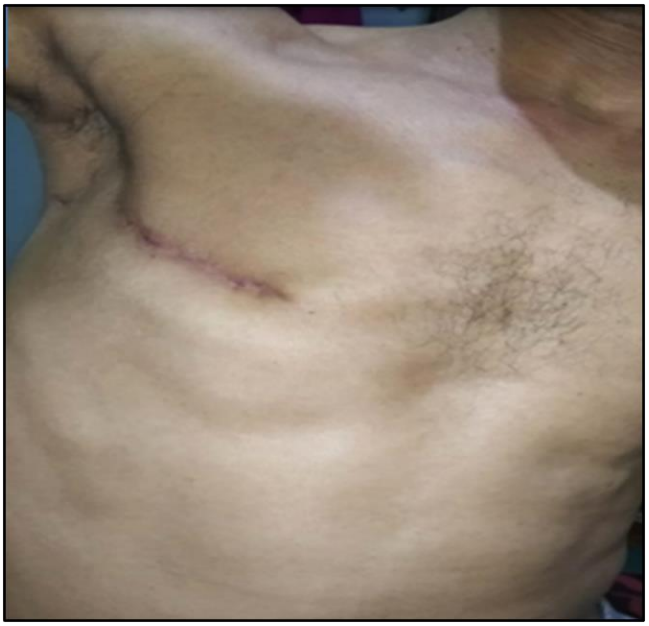

Figure 2: Postoperative appearance of patient No. 1

Case N2

A 38-year-old young man, with no significant medical history, was admitted to our facility for the management of a stable left breast swelling, complicated 2 months later by the appearance of bloody nipple discharge. Clinical examination did not reveal gynecomastia, but a 4 cm retroareolar mass was palpable, mobile in relation to the surrounding tissue without skin changes or retraction, and associated with unilateral bloody nipple discharge . The axillary region was clear, and the tumor was clinically classified as T2N0MX. Mammography showed a suspicious retroareolar nodule on the left, classified as ACR4 (Figure 2). Biopsy of the nodule favored a moderately differentiated invasive ductal carcinoma (Figure 4A). Chest X-ray, abdominal-pelvic ultrasound, and bone scintigraphy were performed for staging, and no abnormalities were found. The patient underwent radical treatment consisting of mastectomy with axillary lymph node dissection (Figure 3A). The final pathological examination revealed a grade II invasive ductal carcinoma of SBR with a minor intraductal component estimated at 4%, presence of

vascular emboli, and nipple invasion. The posterior margin of excision was 0.5 mm from the lesion. Two out of 8 sampled lymph nodes were positive without capsular rupture. Immunohistochemical analysis showed positive hormone receptor status (HR+), with estrogen receptor (ER) at 60% and progesterone receptor (PR) at 50%, negative HER2 status, and a Ki67 proliferation index of 10% (luminal A subtype). After discussion in the multidisciplinary tumor board, the decision was to proceed with adjuvant chemotherapy consisting of 6 cycles of 3-docetaxel plus 3 cycles of doxorubicin and cyclophosphamide (AC60), followed by radiotherapy to the chest wall and supraclavicular and infraclavicular areas, along with hormonal therapy using tamoxifen.

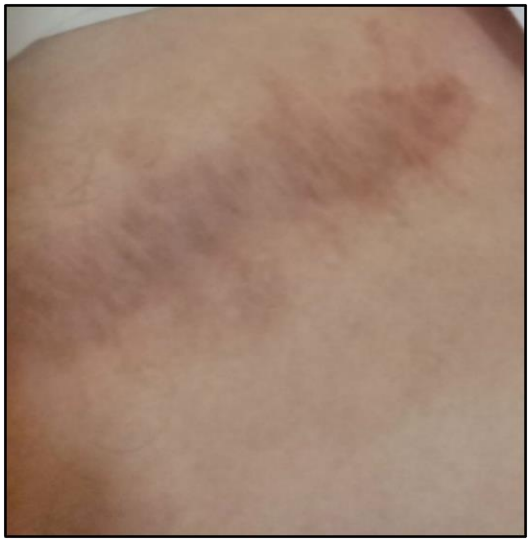

Figure 3: Postoperative appearance of patient No. 2

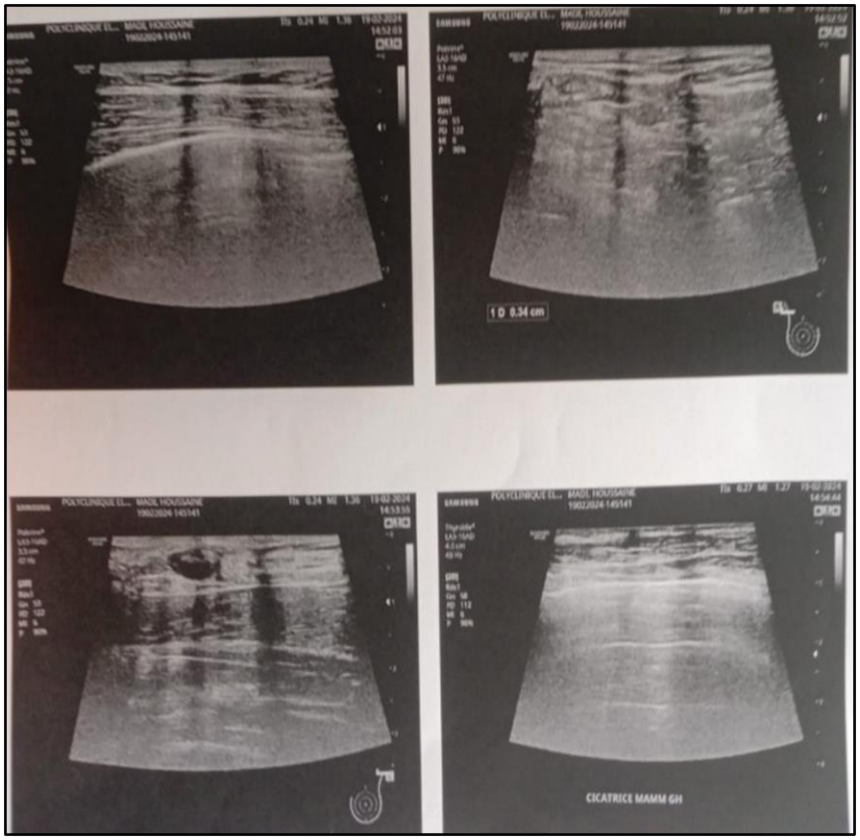

Figure 4: Postoperative mammography and breast ultrasound

DISCUSSION

Breast cancer in men is an extremely rare condition, representing 0.5 to 1% of breast cancers and 0.4 to 1.2% of all male cancers in Western countries [7]. The first description dates back to 1307 and was made by an English surgeon, Jean d'Arderne [8].

Its incidence has significantly increased in the past 25 years [9]. In Morocco, the incidence of male breast cancer, according to our two national registries (Rabat Cancer Registry and Grand Casablanca Cancer Registry), is estimated at 0.8-1%. In Western countries, the onset of male breast cancer occurs approximately between the ages of 60 and 65 [9], which is about 8 to 10 years later than in women. However, our patients were younger, 56 and 38 years old, which emphasizes the need for increased attention to this oncological entity for earlier management. It is likely caused by the concomitant effects of various risk factors, including clinical disorders related to hormonal imbalances, certain occupational exposures, environmental and genetic risk factors [10].

Breast cancer in men typically presents as a painful subareolar or retroareolar swelling, nipple retraction, or bloody discharge, which corresponds to the clinical presentation of our two patients. Masses in men are generally easier to appreciate than in women due to the smaller size of the breasts, although gynecomastia can mask the condition.

The time to diagnosis after the onset of symptoms has decreased. Previous series reported an average of 21 ± 14 months, while more recent series report an average of 8 ± 1 months. This may be due to increased public awareness of male breast cancer. Our patients had an average time to diagnosis of 10 months, which is consistent with the literature [10]. Bilaterality (synchronous and/or metachronous) appears to be less frequent than in women.

Similar to breast cancer in women, the diagnosis of breast cancer in men is made through a triple assessment, including clinical evaluation, mammography, ultrasound, and biopsy, which was the same approach used in our patients [11]. Mammography is an effective diagnostic method with a sensitivity of 92% and a specificity of 90%. However, its use is limited due to differences in size and volume of male breasts [12].

Staging is based on the TNM classification, and like in women, the staging workup includes the same examinations (chest X-ray, liver ultrasound, bone scintigraphy, and CA 15-3 measurement) [12-14].

Practically all known histological types of breast cancer have been identified in men. Infiltrating ductal carcinoma is the predominant subtype, accounting for approximately 70% of cases [7, 13]. Ductal carcinoma in situ represents 10% of lesions, while medullary, tubular, papillary, small cell, and mucinous carcinomas constitute less than 15% of cases [14, 15]. Lobular carcinomas are rare (1%) due to the absence of differentiation of terminal lobules. Our patients had ductal carcinomas. Compared to breast cancer in women, breast cancer in men more often expresses hormone receptors [8, 13], which was also observed in our two patients.

The surgical option chosen by the majority of authors, and performed in our patients, is modified radical mastectomy. In some cases, more extensive surgery may be necessary, involving the removal of a more or less significant portion of the pectoralis major muscle or the use of a flap for coverage, particularly the latissimus dorsi muscle [7, 17]. The role of breast-conserving treatment remains limited at 8.6%. Technically, breast-conserving treatment can only be performed in specific situations, mainly for small tumors in a favorable environment allowing for excision in healthy tissue, such as when gynecomastia is present. In other situations, central localization, proximity to the nipple-areolar complex, and insufficient tissue volume preclude breast-conserving treatment.

Adjuvant treatment mainly consists of radiotherapy due to lymph node involvement in 90% of cases [7], in addition to hormonal therapy, as 73% of male breast cancers are hormone-sensitive [1, 16]. Chemotherapy may be used in cases of resistance to hormonal therapy or in patients with hormone receptor-negative tumors.

Prognosis depends on several parameters, including clinical stage, histological type, lymph node involvement, SBR grade, vascular emboli, and hormone receptor expression. Contrary to previous descriptions, male breast cancer does not have a worse prognosis than female breast cancer at the same age and stage, as shown in a large American study comparing 2,923 men and 442,500 women treated between 1973 and 2001 after adjusting for different variables [20]. Genetic counseling should be offered to most male patients with breast cancer based on their increased risk of BRCA mutations, especially in the contextBreast cancer in men is a rare condition that accounts for only a small percentage of breast cancer cases. The incidence of male breast cancer has increased in recent years, and it is estimated to represent 0.5 to 1% of breast cancers and 0.4 to 1.2% of all male cancers in Western countries.

In Morocco, the incidence of male breast cancer is estimated to be around 0.8-1%. The onset of male breast cancer typically occurs between the ages of 60 and 65, which is about 8 to 10 years later than in women. However, there have been cases of younger men developing breast cancer, highlighting the need for increased awareness and early management.

The clinical presentation of male breast cancer is similar to that in women, with symptoms such as painful swelling, nipple retraction, or bloody discharge. Masses in men are often easier to detect due to the smaller size of the breasts, although the presence of gynecomastia can make it more challenging to identify.

The diagnosis of breast cancer in men follows a triple assessment approach, which includes clinical evaluation, mammography, ultrasound, and biopsy. Mammography is less effective in men due to the differences in breast size and volume.

Staging of male breast cancer is based on the TNM classification system, and the staging workup includes imaging studies (such as chest X-ray, liver ultrasound, and bone scintigraphy) and tumor marker measurement (e.g., CA 15-3).

Histologically, male breast cancer can present with various types, but infiltrating ductal carcinoma is the most common subtype, accounting for approximately 70% of cases. Other subtypes, such as ductal carcinoma in situ and less common types like medullary, tubular, papillary, small cell, and mucinous carcinomas, can also occur. Lobular carcinomas are rare in men.

Treatment options for male breast cancer are similar to those for women and typically involve surgery, such as modified radical mastectomy. Adjuvant treatments, including radiotherapy, hormonal therapy, and chemotherapy, may be recommended depending on the individual case.

The prognosis of male breast cancer depends on several factors, including the stage of the disease, histological type, lymph node involvement, tumor grade, and hormone receptor expression. Generally, male breast cancer does not have a worse prognosis than female breast cancer at the same age and stage.

Genetic counseling is often recommended for male breast cancer patients due to the increased risk of BRCA mutations, particularly in cases with a family history of breast or ovarian cancer. In the absence of BRCA testing, it is known that the risk of breast cancer is high in family members of male patients with breast cancer, especially if other family members have been diagnosed with prostate cancer or other BRCA-related cancers [18, 19].

CONCLUSION

Breast cancer in men is a rare disease. The risk factors are multiple and varied. The diagnosis is made at a later age than in women and at a more advanced stage. The clinical presentation of the disease differs slightly in men. All histological varieties can be seen in men, with lobular carcinoma being rare. Hormone receptors are often positive, with a rarity of HER2/neu overexpression in men. The sentinel lymph node method is technically feasible. Hormone therapy plays an important role in treatment, and tamoxifen remains the drug of choice. The prognosis of breast cancer in men is the same as in women at the same stage. Multicenter studies are needed to optimize the management of patients with this disease.

REFERENCES

1. Giordano, S. H., Cohen, D. S., Buzdar, A. U., Perkins, G., & Hortobagyi, G. N. (2004). Breast carcinoma in men: a population-based study. *Cancer: Interdisciplinary International Journal of the American Cancer Society*, *101*(1), 51-57.
2. Robinson, J. D., Metoyer, K. P., & Bhayani, N. (2008). Breast cancer in men: a need for psychological intervention. *Journal of Clinical Psychology in Medical Settings*, *15*, 134-139.
3. Thomas, E. (2010). Men's awareness and knowledge of male breast cancer. *AJN The American Journal of Nursing*, *110*(10), 32-37.
4. Sousa, B., Moser, E., & Cardoso, F. (2013). An update on male breast cancer and future directions for research and treatment. *European journal of pharmacology*, *717*(1-3), 71-83.
5. Krebsgesellschaft, D., & Krebshilfe, D. (2018). AWMF: S3-Leitlinie Früherkennung, Diagnose, Therapie und Nachsorge des Mammakarzinoms, Version 4.1, 2018 AMWF Registernummer:032-045OL, http://www.leitlinienprogrammonkologie.de/leitlinien/mammakarzinom/(accessed January 12, 2018).
6. Bateni, S. B., Davidson, A. J., Arora, M., Daly, M. E., Stewart, S. L., Bold, R. J., ... & Sauder, C. A. (2019). Is breast-conserving therapy appropriate for male breast cancer patients? A national cancer database analysis. *Annals of surgical oncology*, *26*, 2144-2153.
7. Bourhafour, M., Belbaraka, R., Souadka, A., M'rabti, H., Tijami, F., & Errihani, H. (2011). Male breast cancer: a report of 127 cases at a Moroccan institution. *BMC research notes*, *4*, 1-5.
8. Korde, L. A., Zujewski, J. A., Kamin, L., Giordano, S., Domchek, S., Anderson, W. F., ... & Cardoso, F. (2010). Multidisciplinary meeting on male breast cancer: summary and research recommendations. *Journal of clinical oncology*, *28*(12), 2114.
9. Brinton, L. A., Key, T. J., Kolonel, L. N., Michels, K. B., Sesso, H. D., Ursin, G., ... & Cook, M. B. (2015). Prediagnostic sex steroid hormones in relation to male breast cancer risk. *Journal of Clinical Oncology*, *33*(18), 2041.
10. PDQ Adult Treatment Editorial Board. *Male Breast Cancer Treatment (PDQ). Health professional Version.* 2016. Feb 12.
11. Evans, G. F., Anthony, T., Appelbaum, A. H., Schumpert, T. D., Levy, K. R., Amirkhan, R. H., ... & Turnage, R. H. (2001). The diagnostic accuracy of mammography in the evaluation of male breast

disease. *The American journal of surgery*, *181*(2), 96-100.

12. Goss, P. E., Reid, C., Pintilie, M., Lim, R., & Miller, N. (1999). Male breast carcinoma: a review of 229 patients who presented to the Princess Margaret Hospital during 40 years: 1955–1996. *Cancer: Interdisciplinary International Journal of the American Cancer Society*, *85*(3), 629-639.
13. Zhou, F. F., Xia, L. P., Guo, G. F., Wang, X., Yuan, Z. Y., Zhang, B., & Wang, F. (2010). Changes in therapeutic strategies in Chinese male patients with breast cancer: 40 years of experience in a single institute. *The Breast*, *19*(6), 450-455.
14. Burga, A. M., Fadare, O., Lininger, R. A., & Tavassoli, F. A. (2006). Invasive carcinomas of the male breast: a morphologic study of the distribution of histologic subtypes and metastatic patterns in 778 cases. *Virchows Archiv*, *449*, 507-512.
15. Hittmair, A. P., Lininger, R. A., & Tavassoli, F. A. (1998). Ductal carcinoma in situ (DCIS) in the male breast: A morphologic study of 84 cases of pure DCIS and 30 cases of DCIS associated with invasive carcinoma-a preliminary report. *Cancer: Interdisciplinary International Journal of the American Cancer Society*, *83*(10), 2139-2149.
16. Cutuli, B., Cottu, P. H., Guastalla, J. P., Mechin, H., Costa, A., & Jourdan, R. (2006). A French national survey on infiltrating breast cancer: analysis of clinico-pathological features and treatment modalities in 1159 patients. *Breast cancer research and treatment*, *95*, 55-64.
17. Wang, J., Kollias, J., Marsh, C., & Maddern, G. (2009). Are males with early breast cancer treated differently from females with early breast cancer in Australia and New Zealand?. *The Breast*, *18*(6), 378-381.
18. Liede, A., Karlan, B. Y., & Narod, S. A. (2004). Cancer risks for male carriers of germline mutations in BRCA1 or BRCA2: a review of the literature. *Journal of Clinical Oncology*, *22*(4), 735-742.
19. Ottini, L., Rizzolo, P., Zanna, I., Falchetti, M., Masala, G., Ceccarelli, K., ... & Palli, D. (2009). BRCA1/BRCA2 mutation status and clinical-pathologic features of 108 male breast cancer cases from Tuscany: a population-based study in central Italy. *Breast cancer research and treatment*, *116*, 577-586.
20. Scott-Conner, C. E. H., Jochimsen, P. R., Menck, H. R., & Winchester, D. J. (1999). An analysis of male and female breast cancer treatment and survival among demographically identical pairs of patients. *Surgery*, *126*(4), 775-781.