

Breast Cancer in Men: Radiological Particularities - Through a Case in the Service

Ali Haidar^{1*}, Hatim Essaber¹, Asaad El Bakkari¹, Soukaina Alliou¹, Hounayda Jerguigue¹, Youssef Omor¹, Rachida Latib¹

¹Radiology Department, National Institute of Oncology, Rabat, Morocco

Case Report

Abstract:

***Corresponding Author:**
Ali Haidar

Citation:

Ali Haidar *et al.*, (2024); Breast Cancer in Men: Radiological Particularities - Through a Case in the Service. *iraetc med. bull*; 2(1) 1-3.



This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license.



Breast cancer in men is a rare pathology. Among all breast cancers, less than 1% affect men. It is often unsuspected in men who generally hesitate to seek medical attention, which delays diagnosis and treatment. It generally presents the same risk factors and therapeutic modalities as in women, but still has some clinical and radiological particularities. In this study, we describe the typical radiological appearance of breast cancer in men, as visualized through our case from the department, to identify the radiological particularities of male breast cancer, thus facilitate early diagnosis and knowledge of differential diagnoses to avoid unnecessary biopsies. The ultrasound-mammography combination is the gold standard, followed by a biopsy for histological confirmation. The tumor is often retro-areolar, and any excentric location is suspicious of malignancy. Mammography rarely shows microcalcifications, unlike in women. Ultrasound allows for a positive diagnosis by guiding the biopsy, evaluating extension to the pectoral muscle, and establishing differential diagnoses. MRI is not indicated in male subjects. Invasive ductal carcinoma constitutes the majority of cases. The Treatment consists of a mastectomy in combination with other therapeutic modalities such as hormone therapy, radiotherapy, and chemotherapy. Conservative treatment has no place in men. The prognosis is bleaker than in women due to diagnostic delay caused by neglect and lack of understanding of the disease by men.

Key Words: Breast Cancer in Men, pathology, microcalcifications.

|| © IRAETC Publisher || **Publication History** - Received: 21.12.2023 || Accepted: 07.01.2024 || Published: 10.01.2024||

INTRODUCTION:

Breast cancer in men is a rare pathology. Less than 1% of all breast cancers affect men. As a result, it often goes unnoticed in men who typically hesitate to consult, delaying diagnosis and treatment. Radiologically, the combination of mammography and ultrasound is the gold standard, followed by a biopsy for histological confirmation. MRI is not indicated in male patients. In this study, we will discuss specific radiological features of breast cancer in men, enabling radiologists to establish a diagnosis and differentiate it from other diagnoses.

CLINICAL HISTORY:

This is a 52-year-old patient, who used to smoke and quit 10 years ago. Over the past 6 months, he have presented with a painless swelling in the left breast, without any skin redness or nipple retraction. On clinical examination, a left retro-areolar nodule was found that was more or less firm to palpation, and poorly mobile compared to the deeper plane. A breast ultrasound was performed, which showed a retro-areolar mass in the left breast that was hypoechoic, poorly defined, with spiculated contours that were not well circumscribed, and without posterior attenuation, measuring 7x6mm. Additionally, the ultrasound was able to rule out involvement of the underlying pectoral muscle. The scan of the axillary cavity and internal mammary chain did not reveal any lymphadenopathy. The contralateral breast was without abnormalities. An ultrasound-guided biopsy showed a poorly differentiated and infiltrating carcinoma that was Herceptest negative but hormone receptor positive.

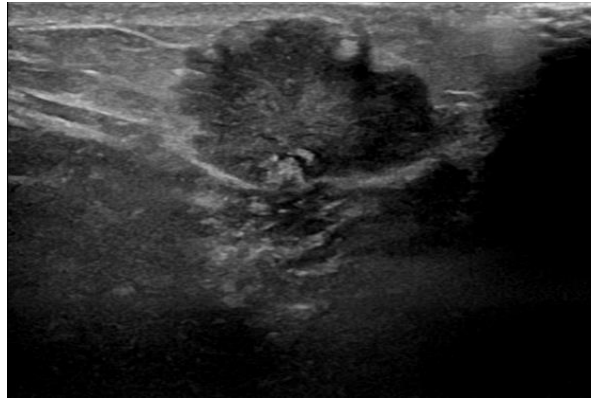


Figure1: Hypoechoic mammary mass with irregular shape, poorly defined borders, and spiculated contours

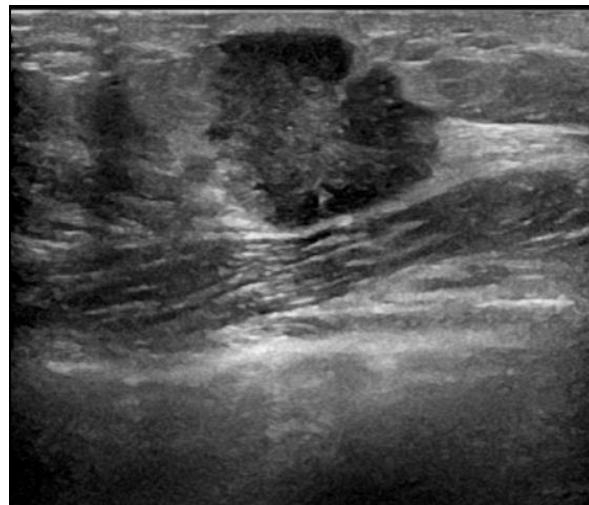


Figure2: Axial section of the hypoechoic mammary mass, with irregular shape, poorly defined, and spiculated contours. It is noteworthy that the aponeurosis of the pectoralis major muscle is preserved

DISCUSSION:

Breast cancer in men is a rare condition. It represents less than 1% of breast cancers, and 0.25% of male cancers. (Charlot et al., 2013) Several risk factors are recognized, including age, X-ray exposure to the chest wall, family history, BRCA2 mutation, Klinefelter syndrome, and liver cirrhosis. Other factors have shown some association with male breast cancer but are not considered risk factors, such as cryptorchidism, gynecomastia, obesity, and alcohol consumption. (El Mhabrech et al., 2014)

The clinical presentation is relatively similar to that in women. It is mainly represented by a painless subareolar mass. Other signs may be associated, such as skin redness, retraction or ulceration of the nipple, permeation nodules, etc. An eccentric breast nodule that is highly suspicious of malignancy. Axillary lymphadenopathy is palpated in the case of nodal extension.

Radiological assessment is mainly based on the ultrasound-mammography couple.

✓ Mammography: relatively difficult to perform given the small volume of the gland in men. Two incidences are performed in addition to tomosynthesis: a cranio-caudal incidence with another external oblique incidence. Cancer appears as a retro-mammary opacity of irregular shape with often spiculated, indistinct, or micro lobulated contours, sometimes circumscribed, usually without microcalcifications. These, if present, tend to be fewer and coarser than in female breast cancer. An eccentric mass is highly suspicious of malignancy because it cannot correspond to gynecomastia. Signs such as nipple retraction and skin thickening should be sought. Tomosynthesis improves sensitivity, especially in ductal cancers, but it retains the same specificity as mammography and not the specificity, (Mercier et al., 2015)

✓ Ultrasound: Ultrasound signs are similar to those of breast cancer in women of the same histology. They correspond to a subareolar hypoechoic mass poorly defined with spiculated or microlobulated contours. Any complex cystic mass in men is suspicious of malignancy and should undergo surgery regardless of the biopsy result. In addition, ultrasound has a

great contribution in the assessment of locoregional extension, it studies extension to the skin, the pectoral muscle as we excluded in our patient, and searches for axillary lymphadenopathies which are present in 50% of cases.

✓ Breast MRI is not currently indicated in the assessment of breast cancer in men. A study of 17 patients showed that the radiological criteria for malignancy and benignity are similar to those of breast lesions in women. The differential diagnosis is represented by: (Charlot et al., 2013)

- Gynecomastia in its three forms, especially dendritic, which appears on ultrasound as a triangular hypoechoic area with irregular contours insinuating itself between the glandular tissue. The nodular form shows a subareolar area with the same appearance as the breast tissue, discreetly hypoechoic, and surrounded by fatty tissue. The diffuse form takes the form of a dense heterogeneous breast in women.
- Lipoma appears as a well-encapsulated mass with heterogeneous hyper-echoic echostucture.
- Epidermal inclusion cyst is a deposit of keratin in an obstructed hair follicle. It appears as a cyst with posterior enhancement, containing echogenic debris and in continuity with the epidermis.
- Retroareolar abscess. Rare and often chronic, it appears as a hypoechoic heterogeneous supra-areolar mass with thick walls, associated with thickening of the overlying skin, and sometimes a galactophoric ectasia. A biopsy may be necessary to differentiate it from a malignant lesion.
- Secondary breast locations are rare and mostly originate from lung cancer, prostate cancer, melanoma, and lymphoma. They are often multiple.

In the face of a suspicious mass, histological proof is necessary after generally ultrasound-guided biopsy. Invasive ductal carcinoma constitutes the majority of cases. Therapeutic management depends on the stage of the tumor. In an early stage, it mainly consists of mastectomy with axillary lymph node dissection. Conservative treatment is not indicated in men due to their small breast volume and their easy consent for radical surgery. Hormone therapy is always indicated as an adjuvant in case of hormone receptor expression. The drug used is tamoxifen, prescribed in the majority of cases for a duration of five years. Postoperative radiotherapy prevents local recurrences and improves progression-free survival.

Chemotherapy is indicated if the tumor size is larger than 1cm and in case of lymph node involvement, or in case of negative hormone receptors or first-line hormone therapy failure. Regular clinical and radiological follow-up should be done to detect local, lymph node, or distant recurrences. The overall prognosis is poorer in men compared to women due to delayed diagnosis. The 5- and 10-year overall survival rates for breast cancer in men are around 60% and 40%, respectively.

CONCLUSION:

Breast cancer in men remains a rare and poorly understood pathology. It generally presents the same risk factors as in women, as well as the same therapeutic methods. However, it does have some radiological specificities that a radiologist must know, as well as the main differential diagnoses in order to establish an early diagnosis, avoid unnecessary biopsies, and ultimately improve the prognosis.

COMPETING INTERESTS

The authors declare no competing interests.

ACKNOWLEDGMENTS

We want to express our deepest gratitude to the team at the Rabat National Institute of Oncology, and in particular the radiology and oncology department.

REFERENCES:

1. Charlot, M., Béatrix, O., Chateau, F., Dubuisson, J., Golfier, F., Valette, P. J., & Réty, F. (2013). Pathologie du sein chez l'homme. *Journal de Radiologie Diagnostique et Interventionnelle*, 94(1), 26-36. <https://doi.org/10.1016/j.jradio.2012.07.015>
2. El Mhabrech, H., Neji, H., Stita, W., Mallat, N., Aissa, A., Chabchoub, I., Bouguizene, S., Morgene, A., & Alouini, R. (2014). Le cancer du sein chez l'homme : Similaire ou différent à celui de la femme. *Feuillets de Radiologie*, 54(4), 229-232. <https://doi.org/10.1016/j.frad.2014.01.008>
3. Mercier, J., Kwiatkowski, F., Abrial, C., Bousson, V., Dieu-de Fraissinette, V., Marraoui, W., Petitcolin-Bidet, V., & Lemery, S. (2015). Place de la tomosynthèse dans le bilan d'extension locorégional d'une néoplasie mammaire chez 75 patientes. *Journal de Radiologie Diagnostique et Interventionnelle*, 96, S60-S68. <https://doi.org/10.1016/j.jradio.2014.04.004>