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Case Report

Clinical Management of Male Breast Cancer with A Single Metachronous Cutaneous Metastasis: A Case Report and Review

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Any cancer can spread to the skin, a phenomenon typically more common in advanced stages of the disease. However, some tumors can remain clinically silent until the discovery of a cutaneous metastasis, often complicating the diagnosis of the primary tumor, especially if it's a rare tumor like breast cancer in men. It is in this context that we report a case of localized cutaneous metastasis on the scalp, without the presence of other associated clinical signs. Investigations revealed a metastatic breast carcinoma requiring extensive surgical intervention, complemented by adjuvant treatments.

Keywords: Cutaneous metastasis, breast, cancer.

INTRODUCTION:

Usually, cancers can present secondary metachronous locations, in advanced stages of the disease, often occurring late after the discovery of the primary neoplasm. However, in some cases, there is synchrony between the occurrence of a metastasis and the revelation of the primary tumor. Finally, but more rarely, the metastasis can appear isolated, while the primary cancer has not yet been detected (1). However, the majority of malignant tumors can be the cause of cutaneous metastases, although relatively less frequent, they occur in 3 to 10% of cancers (2,3). Nevertheless, even if the diagnosis of a cutaneous metastasis can be relatively evident upon observation, determining with certainty from which type of cancer it originates and what its site of origin is often more challenging, typically requiring a series of specific explorations to make the etiological diagnosis, which can sometimes be a major challenge (4), especially when dealing with a rare tumor such as breast cancer in men. Hence, the case we report.

PATIENT AND OBSERVATION:

A 48-year-old male, a merchant by profession, with no previous medical or surgical history, presented with a scalp skin mass that appeared five months ago. Clinical examination revealed a 2 cm diameter reddish, firm, and painful nodule at the top of the skull (Figure 1), with an irregularly implanted base. Additionally, the examination discovered gynecomastia with a 5 cm mass on the right, retro-areolar, deeply fixed with slight skin retraction. Palpation of the axillary region revealed numerous lymphadenopathies. Ultrasonography and mammography identified a 5.1 cm tissue mass with irregular contours classified as ACR5 (Figures 2 and 3), and the echo-guided biopsy indicated infiltrating papillary carcinoma. Further investigations confirmed multiple metastatic axillary lymphadenopathies. The patient underwent neoadjuvant chemotherapy followed by surgery, including mastectomy with axillary dissection and resection of the skin metastasis F. Pathological findings suggested infiltrating papillary carcinoma, SBR grade III, with Ki67 > 50%, and HER2 negative. Ten out of 22 lymph nodes retrieved during axillary dissection were positive, classified as pT4 N3

M1. Subsequently, the patient underwent radiotherapy combined with hormone therapy.

Figure 1: Cutaneous Metastasis

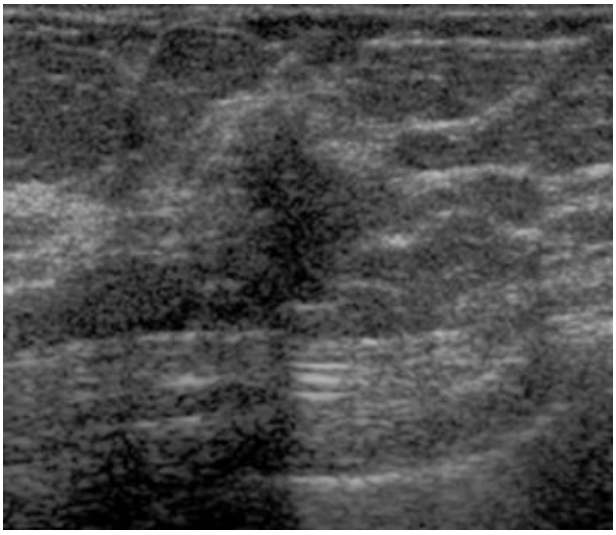

Figure 2: Ultrasound Appearance ACR5

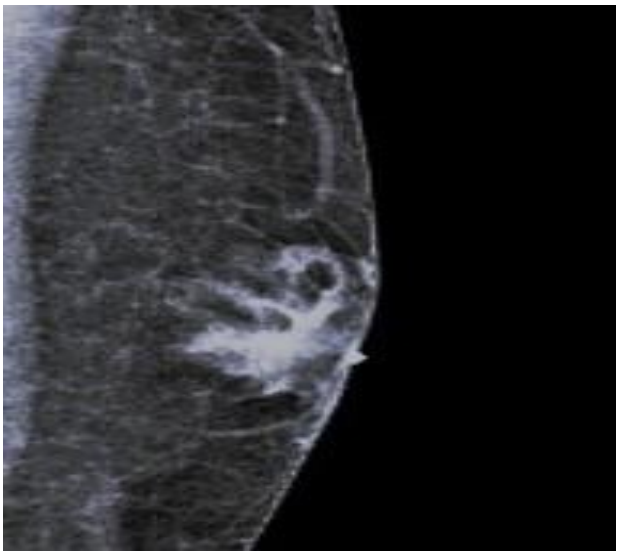

Figure 3: Mammographic Appearance

DISCUSSION:

In men, breast cancer is a rare condition, accounting for only 1% of all breast cancer cases and representing 0.5% of all malignant tumors in men. For a long time, its incidence has been stable, but over the last 25 years, a 26% increase has been noted (5). Despite this relatively low incidence, it contributes to an increased risk of delayed diagnosis and reserved prognoses for individuals with this disease (6,7). This rarity can lead to less early identification of symptoms, especially if the mode of revelation is atypical and represented by a cutaneous metastasis, which can lead to delays in diagnosis and treatment. Additionally, due to its rarity, there may be a lack of specific research on this form of cancer, with its management still relying mainly on evidence available for women (8-10).

Certain cutaneous sites are susceptible to being specifically affected by metastases. At the umbilicus, they can appear as a nodule known as Sister Mary Joseph's nodule (11). Breast carcinoma metastases mainly occur locally (86%) through direct spread or distantly (14%), notably on the scalp, albeit more rarely (12).

When the presence of a metastatic nodule constitutes the first sign of a cancer that had not been previously suspected, histological analysis of this nodule can provide important indications to guide the diagnosis. The latter can reveal the presence of an adenocarcinoma, often suggesting a possible origin in certain specific organs such as the gastrointestinal tract, breast, kidney, ovary, or thyroid (13), which can be crucial to guide further investigations and enable a more targeted diagnostic approach to identify the primary source of metastatic cancer.

Once the orientation biopsy is done, as with breast cancer in women, diagnosing breast cancer in men involves a triple evaluation including clinical examination, mammography, ultrasound, and an extension assessment (14). Mammography, although effective with a sensitivity of 92% and specificity of 90%, has limitations due to variations in size and volume of male breasts, thus restricting its utility (15).

In men with breast cancer, invasive ductal carcinoma is the most frequently encountered. It accounts for the majority of observed cases, reaching around 70% (16). Conversely, other histological types such as medullary, tubular, papillary, small cell, and mucinous carcinomas are less common, collectively comprising less than 15% of cases (17). This histological diversity underscores the similarity between the types of breast cancer observed in men and those traditionally associated with women.

In terms of therapeutic perspectives, an analysis of the NCDB database on men with breast cancer revealed that while total mastectomy is more

frequently practiced, breast conservation was associated with better survival than total mastectomy, whether performed with or without radiotherapy, or even compared to partial mastectomy alone (18-20). These findings are unexpected as current recommendations, based on randomized clinical trials conducted with female patients, generally consider breast conservation and total mastectomy to be oncologically equivalent. Thus, these results underscore the crucial importance of considering and further contemplating breast conservation as a viable option for men with breast cancer. In a retrospective analysis of the SEER database, equivalent outcomes in terms of disease-specific and overall survival were noted among men with breast cancer who underwent partial mastectomy compared to those who underwent total mastectomy (21). Nevertheless, the analysis of this study suggests that patients who underwent partial mastectomy, whether they received radiotherapy or not, represent distinct patient groups. Following this differentiation between these cohorts, it appeared that breast conservation was associated with better survival compared to partial mastectomy alone. These results highlight the vital importance of radiotherapy in improving oncological outcomes in men who underwent partial mastectomy due to breast cancer.

Although the oncological benefits of radiotherapy in breast cancer have been widely cited in female literature, research on radiotherapy in male breast cancer is mainly limited to retrospective and relatively older studies (22,23) showing improvement in locoregional control with radiotherapy; however, few of them observed a survival benefit.

However, other studies (24,25) have striking conclusions that underline a survival benefit associated with radiotherapy in male breast cancer. Furthermore, comparable survival outcomes have been observed for stage I and T1 tumors treated by breast conservation or total mastectomy with radiotherapy, suggesting that radiotherapy might offer superior oncological advantage over more extensive surgery for small cancers. A recent study (26) has proposed the existence of a systemic potentiation effect to explain these results. This term refers to the potential ability of radiotherapy to act both locally against tumors and systemically by stimulating the immune system, thereby reducing the risk of distant recurrence and improving patients' survival. These conservative approaches underscore the importance of post-therapeutic surveillance of breast cancer in men. Current recommendations for this surveillance are similar to those advocated for women, including clinical examinations every 4 to 6 months for the first 5 years, then annually thereafter (27). Moreover, men who underwent breast conservation should also benefit from annual mammography. Further research is needed to assess the adequacy of this surveillance protocol in men as it is primarily based on data from studies involving mainly female patients.

Regarding BRCA2 gene mutations in men, they are estimated between 4 and 16% (28), emphasizing the crucial importance of comprehensive genetic evaluation. Genetic analysis is essential to identify these mutations as they may have significant implications for the patient and their family. Genetic counseling plays a crucial role in these circumstances by assessing individual risk based on family history, explaining the implications of genetic test results, and offering appropriate recommendations for screening, prevention, and risk management.

CONCLUSION:

Some research has presented conflicting data regarding the prognosis of breast cancer in men compared to that in women. At times, the prognosis appears to be less favorable in men, while in other cases, results are similar or even more encouraging in men compared to women. These disparities in conclusions underscore the complexity of prognosis assessment and the necessity for further research to better understand the differences in outcomes between genders.

Conflicts of Interest: The authors declare no conflicts of interest.

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