Anatomo-clinical aspects of male breast carcinoma

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Abstract

Male breast cancer is a rare pathology. It represents 1% of all male cancers. The diagnosis is often late, which makes the prognosis pejorative. The aim of our study is to describe the cytological and histo-epidemiological aspects of male breast cancer diagnosed at Anatomy and Cytology Pathology Laboratory of Joseph Ravoahangy Andrianavalona University Hospital in Antananarivo during 9 years.

This is a retrospective and descriptive study, including all cases of male breast cancer, diagnosed on cytological examination, with or without histological examination.

We collected 7 cases. The average age of the patients was 45 years old. The disease was revealed in all cases by a palpable mass of 20 to 40 mm long axis, unilateral in 6 cases and bilateral in one case. The diagnosis was ductal carcinoma in all cases. One case was histologically confirmed and classified as infiltrating ductal carcinoma (stage II SBR (3 + 2 + 1), stage ypT4N2Mx), with Luminal A molecular type (ER +, PR -, HER2 -).

Male breast cancer is often discovered at advance stage. Cytological examination has an important place in the diagnosis.

Key words: Breast cancer, man, cytological examination, histological examination, mastectomy

Introduction

Male breast cancer (MBC) is a rare pathology that accounts for 1% of all male cancers (1, 2). In recent decades, the incidence of this lesion has gradually increased (3, 4). The diagnosis is often late, which makes the prognosis pejorative (1, 2). The aim of this study is to describe the cytological and histo-epidemiological aspects of male breast cancers diagnosed at Joseph Ravoahangy Andrianavalona University Hospital.

Materials and method

This is a retrospective and descriptive study over a period of 9 years, from January 2010 to December 2018, of all cases of MBC observed in the Anatomy and Cytology Pathology Laboratory of Joseph Ravoahangy Andrianavalona University Hospital in Antananarivo.

Results

We have collected 7 cases. Patients' ages ranged from 26 to 76 years with an average age of 45, of which 5 patients are under 50 years of age (Fig. 1). In all cases, the clinical aspect was dominated by a lump, unilateral in 6 cases (4 on the left side and 2 on the right side) and bilateral in one case. It was associated with inflammation and cutaneous ulceration in 2 cases. Their diameter was 20 to 40 mm long axis. The lump was located in the upper external quadrant in 2 cases and retro-areolar in 5 cases, without nipple retraction. In post-therapeutic follow-up, a patient underwent histological examination on mammectomy specimen–and the diagnosis was confirmed. It was an infiltrative ductal carcinoma, stage II SBR (3 + 2 + 1), stage ypT4N2Mx (Fig. 2), subtype Luminal "A", ER (+) (Fig. 3), RP and HER2 (-).

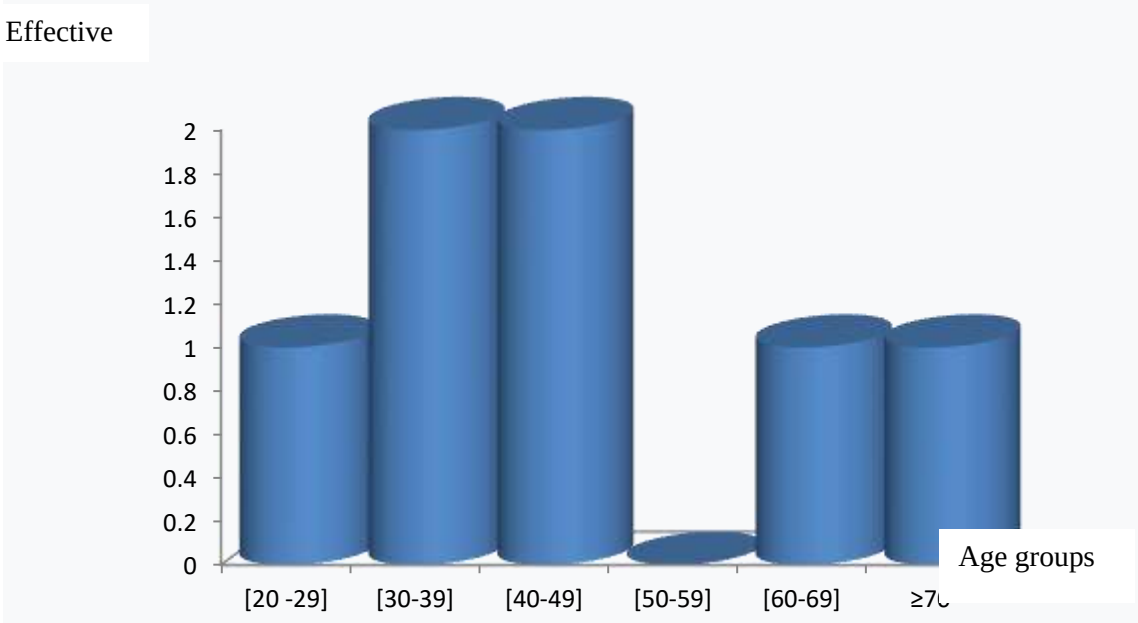
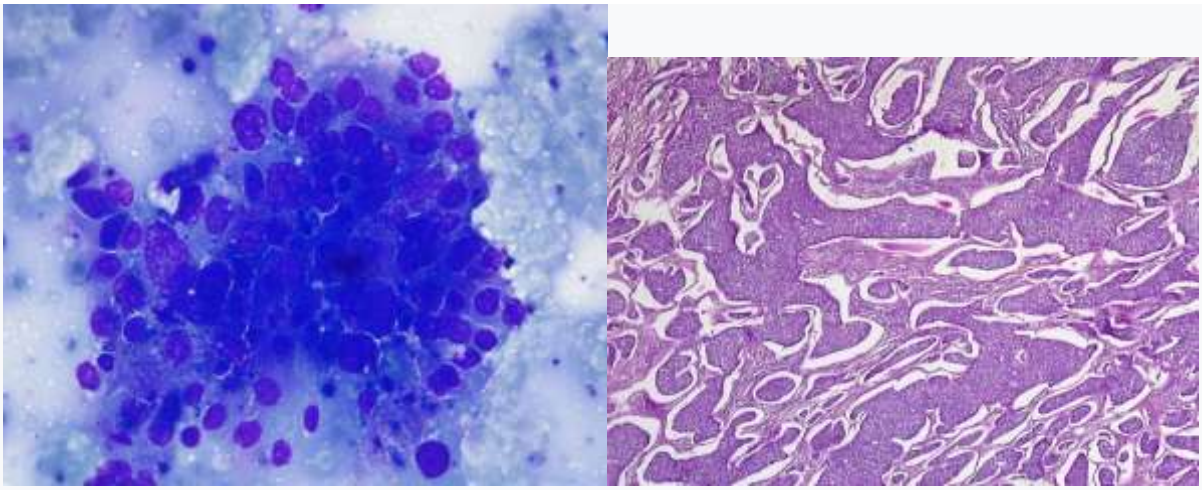


Figure 1: Breakdown of patients by age group



a b

Figure 2: (a) breast fine needle aspiration: galactophoric carcinoma with marked cyto-nuclear atypia. May Grünwald Giemsa x400. (b) Infiltrating ductal carcinoma stage II of SBR (3+2+1). HE x100. Pathology Department CHU-JRA.

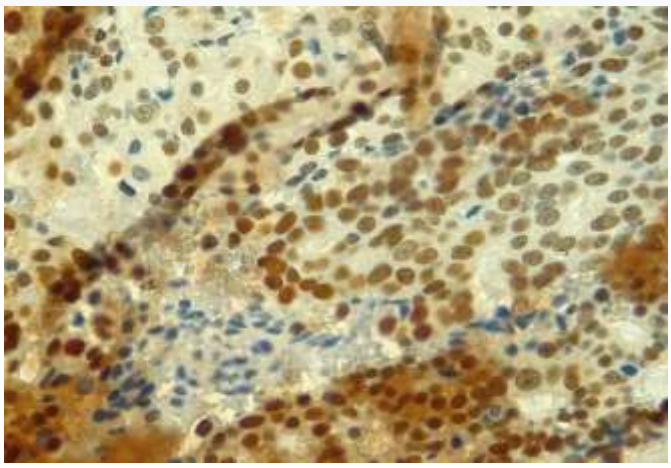


Figure 3: Immunohistochemistry. Highly positive estrogen receptor. Pathology Department CHU-JRA

Discussion

According to A.-S. Oger et al (4), the incidence of breast cancer in men has increased steadily from 0.86 / 100,000 to 1.06 / 100,000 over the last three decades. The frequency of this male pathology varies according to the country. This variation suggests the impact of the environment on the incidence (4).

Breast cancer often affects men from the age of 50 with an average age of 65 (30 to 85 years) (1,2). The study by Seho Park et al (5) supports this finding as 2/3 of their patients are over

50 years old. In our series, in 2/3 of the cases, the patients were under 50 years old. The average age was 45 years that is 20 years younger than what is indicated in the literature. However, the small size of our study population does not allow us to draw a conclusion regarding this precocity of occurrence.

Concerning the clinical aspect, it is a nipple-shaped with frequent cutaneous involvement in the form of orange peel or ulceration (1). Treves N et al (6) reported in their series that 72% of patients had a breast lump often associated with ulceration. This preferential location is explained by the small size of the male breast tissue. And the advanced stage of the disease (mass with skin lesion) may be due to the fact that men have little interest in their mammary glands, than women. The identification of the mass is observed only when there are associated with cutaneous signs since the nodule is initially painless (1, 7). The predominance of the retro-nipple location was also found in our series with cutaneous ulceration in front of the nodule in 2 cases.

Regarding laterality, as in women, the breast nodule is often unilateral and there is a slight preponderance on the left side (8) which represents 60.5% of cases in the study by K. Alaoui Slimani et al. (9).

Concerning the diagnosis, various opinions have been mentioned in the literature for the place of cytological examination. According to Mondal A et al (10). For example, this examination is now well established for the evaluation of breast lump in women, however, there are only rare cases published in men. According to some authors such as Susan Onami et al. (11), Darren K. Patten et al. (12), the techniques used for the diagnosis of women breast cancer are relevant for male breast cancer. Westenend PJ (13) and Volpe CM et al (14) state that the place of cytological examination is important in the diagnosis of male breast cancer. Cytology allows the confirmation of malignancy, without however being able to identify the precise histological type of the lesion. Sensitivity and specificity to detect a malignant tumor by needle aspiration are close to 100% (3, 11, 12). But when it is equivocal or inadequate, a biopsy is indicated (1). For our cases, cytological examination confirmed the diagnosis of malignancy in all cases.

Histologically, the frequency of histological types of MBC is different from that of women. Lobular carcinoma is rare in men, unlike women, where it is the second most common histological type. In the vast majority of cases, it is ductal carcinoma (70 to 95% of cases) and the lobular type represents around 1% of cases (4, 5); this can be explained by the structure of the mammary gland in men. The normal male breast is characterized mainly by subcutaneous fat and a subaraeolar duct tissue remnant. Male breast tissue is rudimentary,

usually not differentiated, and there is no lobule formation unless exposed to increased estrogen's concentration, which explains the frequency of this histological type (15, 16). In our study, one case was histologically confirmed with immunohistochemistry, after mastectomy and was classified as infiltrating ductal carcinoma, under Luminal "A" molecular type (RE +, RP -, HER2 -). According to Kornegoor R et al, the most common molecular subtype is "Luminal A", observed in 75% of cases (17). The non-realization of the biopsy in our series could be explained by the fact that the positivity of the cytology incites the clinician to treat the tumor from the beginning without histological confirmation. According to the literature, mastectomy is the standard treatment in men. The small size of the breast makes it difficult to obtain a healthy margins and lumpectomy is not recommended (4, 8).

Tumor size and cutaneous involvement are the most important prognostic factors in male breast cancer. Skin involvement is an element of poor prognosis, associated with a higher frequency of lymph node or visceral tumor dissemination (18). A tumor of 20 to 50 mm has a risk of death increased by 40% compared to that having less than 20 mm long axis (16). In our series all patients had a tumor between 20 and 40 mm and one patient had lymph node involvement but the patients' evolution could not be evaluated in our study.

Conclusion

Male breast cancer is often discovered at advanced stage. Generally, the diagnosis is suspected clinically. Cytological examination plays a key role in the diagnosis. It is important to carry out an histological examination to evaluate the extension of the tumor with staging and for the orientation of the patients' management.

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Conflict of interest: The authors declare that they have no conflict of interest.

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