

## Male Breast Cancer Masqueraded as Furunculosis

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### Abstract

A 45 year old man presented to our health facility with a three-month history of right breast mass and bloody right nipple discharge. Prior to presentation he was at a peripheral hospital where he was wrongly diagnosed and managed for furunculosis.

Breast ultrasound scan and mammography done at our health facility revealed a lobulated right retro-areolar complex mass with speculated margins, encroaching adjacent breast parenchyma. A Radiological diagnosis of right breast BI-RADS 5 Lexicon category lesion was made.

He had modified radical (Auchincloss) mastectomy of the right breast, and the histology of the excised specimen confirmed the diagnosis of right breast mucinous carcinoma. Following satisfactory surgical wound healing, he was further managed with post-operative radiotherapy, chemotherapy and hormonal therapy. He has been on regular follow-up for five years now, and his response to management is satisfactory.

**Keywords:** Male breast cancer; Furunculosis; Mastectomy; Mammography; Ultrasound scan.

### Introduction

Male breast cancer is a rare condition accounting for only about 1% of all breast cancers in the United Kingdom and United States [1,2]. There is no meta-analysis in Nigeria regarding the incidence of breast cancer among men. However, a study in North-Eastern Nigeria by Dogo et al. [3] noted that 3.7% of breast cancers were found in men, while in Jos North-Central Nigeria, 8.6% of breast cancer cases were found in males with a male-female ratio of

1:10.6 [4], making it commoner in Nigeria than the west. Breast cancer remains under diagnosed and due to delays in diagnosis, is often also undertreated. In this part of the world, patients often present late due to poverty, ignorance and low index of suspicion [5]. Prolonged duration of symptoms and advanced stage at presentation is important as it correlates with decreased survival in male breast cancer (MBC) [6].

The rarity of male breast cancer (MBC) has prompted the writing of this case report.

## Case Report

E.J. is a 45 year old engineer, working with a Road Construction Company in Sokoto, Nigeria referred from a peripheral hospital in Sokoto on account of a “boil” in the right breast that did not respond to several courses of broad spectrum antibiotics. His history dated back to three months prior to presentation when he noticed a painful swelling around the right areolar. There was no fever or other constitutional symptoms. A medical officer he consulted at a peripheral hospital made a diagnosis of furunculosis and immediately commenced him on broad spectrum antibiotics. When he did not respond to this, he changed to a third generation cephalosporins for ten days. No remarkable response was still noticed. Patient later had bloody nipple discharge that necessitated padding with clothes. It was at this point that he was referred to Ahmadu Bello University Teaching Hospital (ABUTH) for further management.

## Results

When evaluated at ABUTH, we found a 45 year old man with a three-month history of right breast mass and bloody right nipple discharge. There was neither family history of breast cancer nor was there any previous history of hormonal drug therapy. Also, no childhood history of mumps or history of testicular trauma or undescended testis was volunteered. There was no history of cigarette smoking or excessive alcohol consumption.

Examination revealed a firm to hard right peri-areolar mass which extended to the 9 o’ clock position. It was non-mobile and minimally tender, and measured approximately 3cm by 4 cm in dimension. The mass was attached to the overlying skin but no ulceration was noted. There was tethering with peau d’ orange and the nipple was

retracted. There was no axillary lymphadenopathy and the contralateral breast was preserved. The respiratory and remaining systems were essentially preserved. A clinical diagnosis of right breast carcinoma was made and he was then referred to Radiology Department for Breast Ultrasound scan and mammography.

The breast mammogram revealed a lobulated heterogeneously dense mass in the retro-areolar area of the right breast. It had speculated margins with associated distortion of the adjacent fibro-glandular tissues (Figures 1a & 1b). There was no calcification (micro and macro) or area of radiolucency noted within the mass.

Ultrasound evaluation with a high frequency (7.5-10MHz) linear transducer as used by other authors [7], revealed a complex mixed-echogenic mass with cystic and solid components in the peri-areolar area of the right breast, extending to 9 o’clock position. It had a lobulated outline and measured 2.7 × 4.3cm in dimension (Figure 2). The left breast and both axillae were unremarkable. A radiological diagnosis of right breast Bi-rads 5 lexicon category lesion was made. A fine needle aspiration biopsy was done and it confirmed the diagnosis of a malignant right breast mass.

The patient was then booked for mastectomy. He had right auchincloss (modified radical) mastectomy ten days after the biopsy result was obtained. Histology of the excised specimen confirmed the diagnosis of a right breast mucinous carcinoma.

He was referred on the seventh postoperative day to Radio-oncology unit for post-operative radiotherapy and chemotherapy following a good clinically response and good wound healing. Hormonal therapy (tamoxifen) was also given. He has been on regular follow-up for five years now and his response to management is satisfactory.

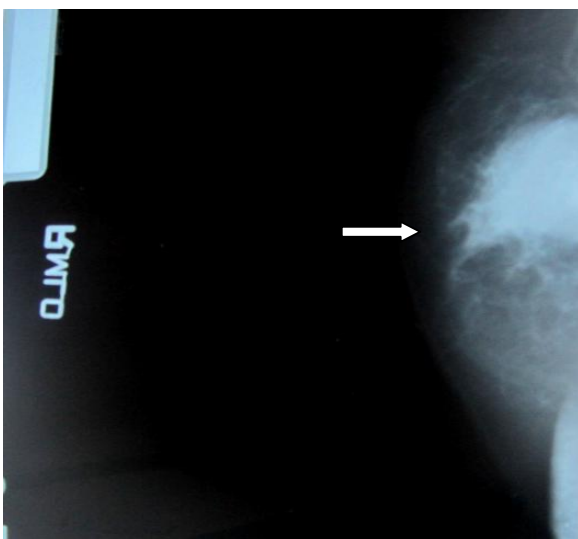


Figure 1a

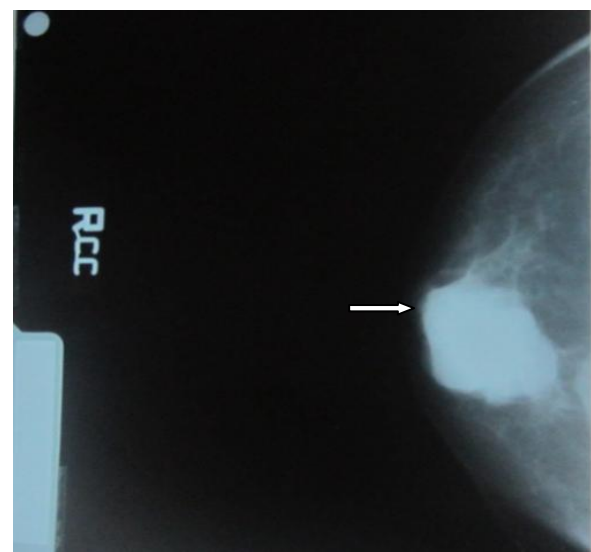


Figure 1b

Figures 1a & 1b are the right breast mammogram (mediolateral oblique & craniocaudal views respectively) showing a lobulated opacity of soft tissue density, having speculated margins in the retro-areola region (arrows). No micro- or macro- calcifications seen. (ORIGINAL IMAGES)



**Figure 2:** Right breast ultra-sonogram of the same patient as in figures 1a & 1b showing a lobulated mixed-echogenic mass with central necrosis (white asterisks), in the retro-areola region. Infiltration of the adjacent breast tissue is noted (arrow). (ORIGINAL IMAGE)

## Discussion

Though male breast cancer is rare, geographical variation in its incidence has been reported. It is higher in USA and UK than in Finland and Japan [7]. An alarming increasing incidence has been reported in the US and Canada when compared with other parts of the world [8]. Data from Africa is scanty, however, in North-Eastern Nigeria, it accounts for 3.7% of breast cancer, and 8.6% in Jos, North-Central Nigeria [3,4]. 4.6% and 15% were noted in Tanzania and Zambia respectively [9].

The prevalence of male breast cancer increases with age. Age frequency distribution for male breast cancer is unimodal with peak incidence in the late sixth and early seventh decade. This index case was a 45 year old man, quite younger than the documented age incidence which is averagely 60 years [10].

The aetiology of male breast cancer is unknown. However, factors such as alteration in hormonal milieu, family history (first degree relation) and genetic alterations are known to influence its occurrence. Conditions that alter estrogen-testosterone ratio in males predispose to breast cancer. This is seen in Klinefelter's syndrome which increases the risk of developing breast cancer in men by 50

times and accounts for 3% of all male breast cancers [11]. Increased blood estrogen level as seen in liver cirrhosis and exogenous administration of estrogen (as in therapy for prostatic carcinoma) has been implicated in the aetiology of male breast carcinoma. There was neither stigmata of chronic liver disease in this patient nor was there any hormonal therapy. Also, Androgen deficiency due to testicular disease like Mumps, undescended testes, or testicular injury, has been linked to the aetiology of breast cancer [12]. This patient had no history of mumps or testicular trauma, and the testicles were both appropriately positioned in the tunica vaginalis. Occupational exposure to heat and electromagnetic radiation, causing testicular damage and further leading to the development of male breast cancer has also been postulated [13]. This patient was a Construction Engineer working with a road construction company in a hot North-Western state of Nigeria (Sokoto). This may have contributed to the aetiology of the breast cancer in him.

Strong racial predilection and gynecomastia have also been implicated. An interesting work in the US comparing incidence, pathology and outcomes in male and female breast cancer in a defined population revealed that more black males than white males are being affected [14].

The typical clinical presentation of breast cancer in 75% - 95% of men is a hard eccentric non-tender mass. The mean diameter is reported as 3-3.5cm which is similar to the size of the mass in the index patient. Collective reviews have shown predilection for the left breast (1.07:1), but this patient's lesion was on the right. Nipple involvement manifests as retraction, nipple discharge, fixation or eczema which were the presentations noted in the index case.

In investigating male breast cancers, ultrasound and mammography have been found useful although, the scanty nature of normal male breast tissue poses challenges in some cases. Fine needle aspiration biopsy which this patient benefitted from is a reliable investigation in male breast cancer and it helps to differentiate benign from malignant lesions; it shows a sensitivity of 95.3%, specificity of 100% and diagnostic accuracy of 98% [15].

Mastectomy (Radical, simple or modified), chemotherapy, radiotherapy and hormonal therapy are treatment options available for treatment of both male and female breast cancers [6]. This patient had Auchincloss

(modified radical) Mastectomy and post-operative radiotherapy, chemotherapy and hormonal therapy. His response was quite satisfactory and no recurrence was noted after five years of regular follow-up.

A number of variables have been reported to affect prognosis in male breast cancer. Among these are tumour stage and axillary node status [16]. This patient had an early stage of the disease (T<sub>2</sub> N<sub>1</sub> M<sub>0</sub>). Right axillary lymphadenopathy was detected at surgery. The early stage of the disease must have contributed to the good response recorded in the patient so far.

## Conclusion

A rare case of male breast cancer wrongly treated as furunculosis has been presented. The case history, radiological findings, management options and literature have been reviewed. This has further stressed the need for early detection and treatment in the management of breast cancer as the index case has continued to do well for five years of diagnosis and treatment.

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