

AN APPRAISAL OF MALE MAMMOGRAPHY IN MAIDUGURI, NORTH EASTERN NIGERIA.

MUSTAPHA Z¹, MINOZA K², OKEDAYO M¹, ABBA ALI A¹, NGGADA HA³, KYARI M¹.

ABSTRACT

Background: Male breast diseases are uncommon and male breast cancer is rare, constituting about 1% of breast cancers seen worldwide. Previous studies have shown that gynecomastia and carcinoma are the commonest conditions affecting the male breast, with increasing incidence of both in recent years. Imaging studies of male breast diseases constitute only about 1% of overall breast imaging in most centres. **Objectives:** To determine and document the pattern of male breast diseases seen in the mammography unit of Department of Radiology, University of Maiduguri Teaching Hospital. **Methods:** A retrospective study of all male patients with complaints of breast swelling referred for imaging at the department of Radiology, University of Maiduguri Teaching Hospital over a six year period from September 2007 to December 2013. The medical records, imaging and biopsy results were reviewed. **Results:** Ten male patients were referred for breast imaging, ranging in age from 14 to 58 years with mean age of 31.3 ± 13 years. Nine (90%) had gynecomastia, of which five were histologically-proven, and one had acute mastitis. Carcinoma was not diagnosed in any of these patients. The left breast was affected in 80% of cases. **Conclusion:** Gynecomastia is the commonest male breast lesion in our environment. Awareness of the usefulness of imaging studies of male breast lesions needs to be encouraged.

KEYWORDS : Male, Mammography, Gynecomastia

INTRODUCTION

The male breast is rudimentary and is not commonly affected by disease. It contains predominantly ducts and fatty tissue. Lobular tissue are usually absent in the male breast making this form of carcinoma rare. Unfortunately, when affected, males commonly present late, and in the case of carcinoma, often with advanced disease. Carcinoma of the male breast has a higher incidence in the African population compared to Caucasians¹⁻³

Gynecomastia is the commonest male breast disease, followed by breast cancer which accounts for less than 1% of all breast cancers². Gynecomastia is defined simply as enlargement of the male breast. It is derived from two Greek words - *gyne* and *mastos* which mean "woman-like breasts"- and it is associated with an overgrowth of

ductal epithelium and stromal elements. It is a benign process occurring as a result of an array of possible causes such as high serum estrogen levels, (whether endogenous or exogenous), low levels of serum testosterone, endocrine or systemic disorders, neoplasms or drug use. In a few patients, gynecomastia is idiopathic. Though rare, male breast cancer like that of females is on the increase, affecting a higher proportion of black Africans with an incidence rate ranging from 2% in eastern Nigeria to about 9% of a population studied in Zaria (North central Nigeria)⁴⁻⁹.

Mammographic examinations of males are uncommon, usually diagnostic and accounting for less than 1% of mammographic examinations in any center^{2,3}. It is however a valuable and efficient diagnostic tool in evaluating male patients presenting with breast complaints. It is the most frequently used imaging modality along with ultrasound to accurately diagnose breast diseases^{1,4}.

This study aims to evaluate and illustrate the mammographic pattern of findings seen in male patients referred for mammographic examination.

MATERIALS AND METHODS

Screening and diagnostic imaging were carried out on a total of 1514 patients from September 2007 to December 2013, at the Mammography unit of

Departments of ¹Radiology, ²Surgery and ³Histopathology, University of Maiduguri Teaching Hospital, Borno state, Nigeria.

Correspondence to:

DR ZAINAB MUSTAPHA

Departments of Radiology,
University of Maiduguri Teaching Hospital,
Maiduguri, Borno state, Nigeria.

Phone:- +2348135209446, +2348070962388

eMail:- zayn6624@yahoo.co.uk

Radiology Department, University of Maiduguri Teaching hospital. Within this study period, ten males were imaged and all their information was included in this study. All the patients were referred for a complaint of breast enlargement, with or without associated breast pain.

Their mammograms, sonomammograms and biopsy reports were included in the review. Nine patients had mammography and sonomammography performed as the initial line of investigation. A tenth patient had a sonomammogram only. Data was captured on a data capture sheet and information such as age, symptoms, location of lesion, mammographic findings, sonomammographic findings and biopsy results were tabulated. The data was analyzed using simple percentages.

RESULTS

The patients ranged in age from 14 to 58 years with mean age 31.1 ± 13 years. Three patients had bilateral symptoms, while seven were unilateral. Of those with unilateral symptoms, two had symptoms on the right and five on the left. Five of the patients had ultrasound-guided breast biopsy with histologically-proven gynecomastia.

Using imaging alone, one patient was diagnosed with mastitis while the remaining nine were diagnosed with gynecomastia (pseudo-gynecomastia in 2 and true gynecomastia in 7). Fig 1 illustrates some mammographic images of gynecomastia from our facility.

Table 1: Presenting Complaints, Imaging Findings & Final Diagnosis

| S/N | Age | Symptoms | Location | Mammography | Sonography | Histology | Final Diagnosis |
|-----|-----|-----------------------------|-----------|---|--|-----------|--------------------------------|
| 1. | 14 | Breast swelling | Bilateral | Not done | Dense breast tissue, symmetrical | No | True gynecomastia (pubertal) |
| 2. | 17 | Breast swelling and pain | Right | Asymmetric density is noted | Hypo echoic area in retro areolar breast | No | Acute Mastitis |
| 3. | 18 | Breast swelling, non-tender | left | Densely prominent tissue | Dense breast tissue, no masses noted | Yes | True gynecomastia Unilateral |
| 4. | 29 | Breast swelling | Right | Dense breast parenchyma | Hypo echoic area | No | Gynecomastia |
| 5. | 30 | Breast swelling | Left | Totally fatty | no breast tissue seen | Yes | Unilateral pseudo gynecomastia |
| 6. | 30 | Breast swelling | Left | Focal asymmetry with Very dense breast tissue | Proliferation of breast tissue | No | Unilateral true Gynecomastia |
| 7. | 31 | Breast swelling | Bilateral | Symmetrical sub areolar densities | Well-developed sub areolar tissues | Yes | True gynecomastia bilateral |
| 8. | 37 | Breast swelling | Left | Dense sub areolar breast tissue | Hypo echoic sub areolar breast tissue | Yes | Left true gynecomastia |
| 9. | 37 | Breast swelling | Bilateral | Totally fatty | No breast tissues | No | Bilateral pseudo gynecomastia |
| 10. | 58 | Breast swelling | Left | Asymmetry of breast parenchyma | Normal heterogeneous breast tissue | Yes | Unilateral true gynecomastia |

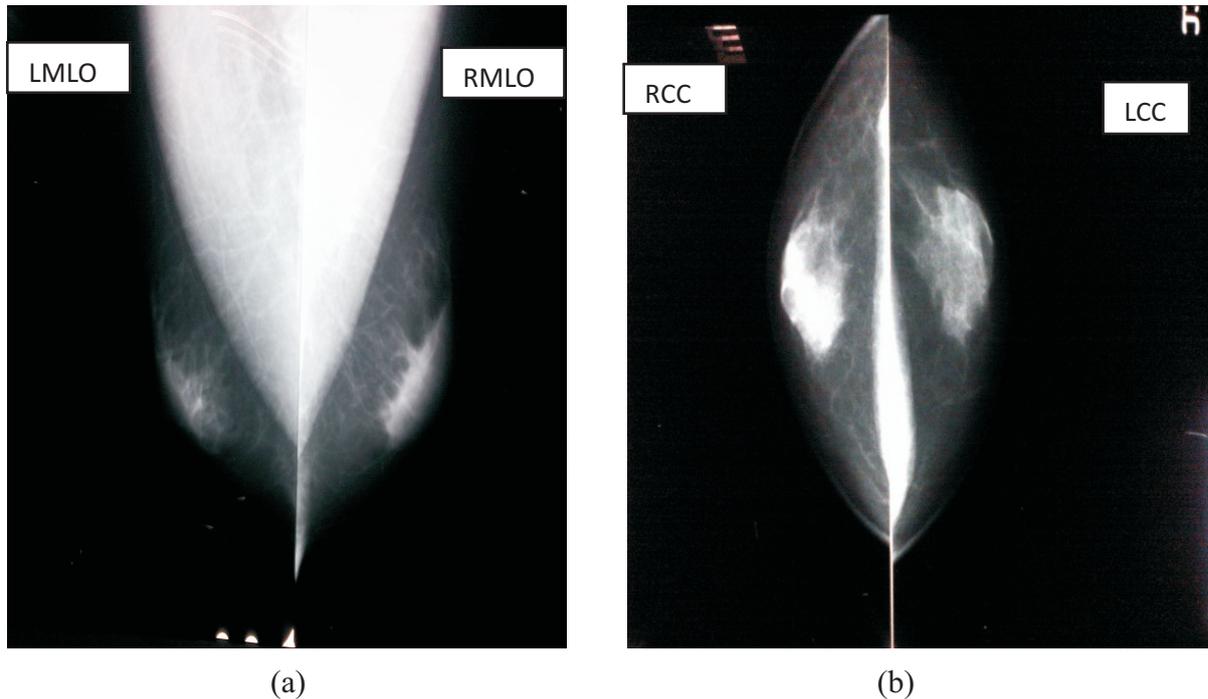


Fig 1: A 31 year old male with bilateral breasts swelling and pain. (a) Rt & Lt MLO (b) RCC & LCC views show breast enlargement with subareolar flame-shaped densities, consistent with bilateral gynecomastia.

DISCUSSION

Diseases and imaging of the male breasts are unusual, but similar to that of the female, with both being on the increase⁵. The male mammograms we reviewed made up 0.7% of the total mammograms done in our center which is lower than the 1% documented in most mammography units^{2,3}, but it is in agreement with a few others which indicate that male mammographic examinations were usually under 1% of all mammograms done in a mammography unit³. Despite this low value, we have noticed an annual increase in male patients seen at our unit from an average of one patient per annum to two in 2012 and presently three in 2013. It is worthy of note that earlier studies on male breast diseases in Nigeria based their discussions on histological diagnosis or surgical outcomes, with little or no information on male mammographic findings. This is probably due to the fact that mammography is a relatively new imaging modality in this country, installed in only few

centers resulting in a paucity of data, as many clinicians do not refer male patients for this investigation^{4,5,10}.

Many studies have documented gynecomastia and carcinoma as the two main diseases affecting the male breast, with gynecomastia being the most common benign disease and the most frequent indication for male mammography¹¹⁻¹³

Earlier studies conducted in our hospital showed that male breast cancer incidence was 3 - 3.7% in northeastern Nigeria^{12,13} and similar studies from Enugu (Eastern) and Ilorin (North-central) Nigeria, show 2% and 6.1% incidence of breast cancer respectively^{4,5}. This appears to be higher than studies conducted in Europe and America which still document incidence of around 1%^{2,3,14,15}

Nine out of ten of our patients had gynecomastia showing that this condition is prevalent in males in our locality. The absence

of male breast carcinoma in this study may possibly be due to the fact that patients who presented to our hospital and diagnosed with malignant breast lesions do so in advanced stages when imaging would no longer be necessary to reach a diagnosis or was impossible to carry out due to the presence of huge fungating breast masses. Another explanation might be that mammography in males is grossly underutilized probably due to lack of awareness of its advantages in early detection of male breast cancer as in females. Five patients had histological correlation of their findings and one patient showed complete resolution of the breast mass

correctly diagnosed earlier as acute mastitis following a full course of antibiotics.

In conclusion, we document the mammographic findings in male patients seen at university of Maiduguri teaching hospital. Though there is no replacement to histological diagnosis, breast lesions in males can be detected early by mammography. The utilization of mammography as an initial and effective diagnostic tool in males presenting with breast complaints should be encouraged, and thus awareness should be raised amongst clinicians of its benefits. ■■■

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