

*Full Length Research Paper*

## **The spectrum of female breast diseases among Nigerian population in Sahel climatic zone**

**<sup>1</sup>H.A. Nggada\*, <sup>2</sup>B.M. Gali, <sup>2</sup>A.A. Bakari, <sup>2</sup>E.H. Yawe-Terna, <sup>2</sup>M.B.Tahir, <sup>3</sup>E. Apari, <sup>3</sup>A.B. Dahiru, <sup>2</sup>K-D.T. Yawe**

<sup>1</sup>Department of Histopathology University of Maiduguri Teaching Hospital, P.M.B.1414, Maiduguri Borno State.

<sup>2</sup>Department of Surgery University of Maiduguri Teaching Hospital, P.M.B.1414, Maiduguri Borno State.

<sup>3</sup>Department of Surgery, Federal Medical Centre, Yola. Adamawa State Nigeria.

Accepted 06 October, 2011

**Diseases of the female breast are very common in clinical practice and therefore patient's presents with symptoms and signs which include pains, palpable mass and nipple discharge. This study aimed at examining the spectrum of breast diseases among a Nigerian population in the Sahel climatic zone. Determine the prevalence and classifying the various types of female breast diseases in our environment. This is a retrospective study of 467 cases of breast disease diagnosed at the UMTH between January 2007 to December 2009 was carried out. All breast diseases cases were retrieved from the database of the Histopathology departments along with the patients request forms. The demographic information was extracted from the request form and this includes: Age, Sex, nature of specimens, Hospital number and Histopathological diagnosis. A total of 479 histologically diagnosed breast lesions accounted for 17.1 % of all tissue specimens diagnosed within the study period. Out of which 467 cases are females while 12 cases are males. The breast lesions are seen from the 2<sup>nd</sup> decade of life. The inflammatory, benign and cancers diseases of breast accounted for 3.9%, 57% and 39.1% of all breast lesions respectively. The commonest histological type of breast cancer is invasive ductal carcinoma which accounted for 74.9%; Invasive lobular carcinoma (15.8%); Medullary carcinoma (4.9%); Mucinous carcinoma (3.8%) and malignant phylloides tumour (0.5%). 15 of the cancers patients had immunohistochemistry analysis, 2 of the patients are progesterone positive and 7 Herceptine receptor positive. Breast disease especially cancer is very common in our area of practice and most of our patients were young and premenopausal women presenting with benign and advanced stages of cancer. However, public health awareness must be intensifying by individuals, groups and the government in educating the women about breast diseases so as to encourage early presentation by reducing the morbidity and mortality. However, this study may stimulate further studies using immunohistochemistry analysis and outcome of patients.**

**Keywords:** Prevalence, breast diseases, benign, cancers, immunohistochemistry.

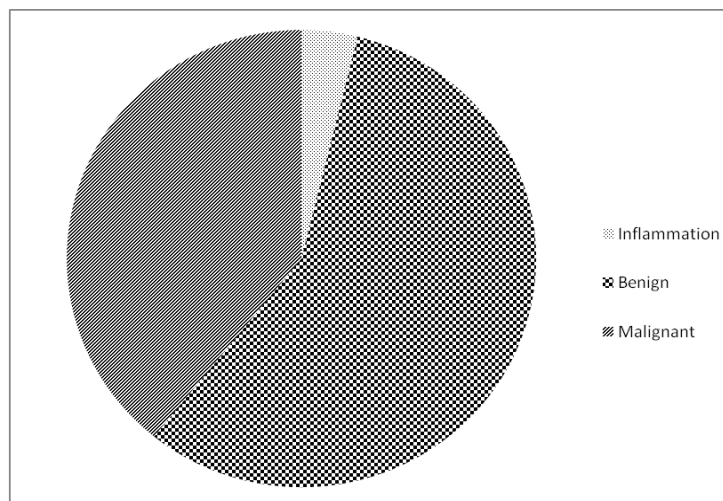
### **INTRODUCTION**

The female breast is a unique organ that is not fully developed at birth but undergoes cyclic changes during reproductive life and starts to involutes long before menopause (Lester, 2004). Diseases of the female breast

are very common in clinical practice and therefore patient's presents with symptoms and signs which include pains, palpable mass and nipple discharge. Majority of the diseases are benign with a wide spectrum depending on the age. Benign breast diseases are primarily seen in women of reproductive age and thought to be largely hormonally induced (Devitt, 1986; Hutter, 1985). The problems of the breast especially cancer has become a source of global concern being one of the

---

\*Corresponding author email: - [hanaggada@yahoo.com](mailto:hanaggada@yahoo.com)  
Phone: 0802 358 6233

**Figure 1.** The spectrum of breast diseases

highest morbidity and mortality in women. The overall yearly new cases of breast cancer are on the increase. In Nigeria, the incidence of developed breast cancer is between 7 to 10,000 in 2005 (Adebamowo and Adekunle, 1999). Previous study has shown the burden of breast cancer in our environment (Nggada et al., 2008).

This study aimed at determining the prevalence and classifying the spectrum of the female breast diseases in our environment.

## MATERIALS AND METHOD

This is a retrospective study of 467 cases of female breast disease diagnosed at the UMTM between January 2007 to December 2009 was carried out. All breast diseases cases were retrieved from the database of the Histopathology departments along with the patients request forms. The demographic information was extracted from the request form and these include: Age, Sex, nature of specimens, Hospital number and Histopathological diagnosis. Those cases with incision biopsies and later had mastectomy were regarded as one case. The data were analysed using simple chart and tables. Few of the cancer specimens were subjected to Immunohistochemistry for Progesterone, Oestrogen and Herceptin-2 receptors analysis. Photographs are also used to demonstrate some benign and malignant cases figure 1

## RESULTS

A total of 479 histologically diagnosed breast lesions

accounted for 17.1 % of all tissue specimens diagnosed within the study period. Out of which 467 cases are females while 12 cases are males. The breast lesions are seen from the 2<sup>nd</sup> decade of life with a peak age group of 3<sup>rd</sup> decade of life. The benign breast diseases have a peak age of 3<sup>rd</sup> decade while breast cancers are peaked at 5<sup>th</sup> decade of life.

The inflammatory, benign and cancers breast diseases accounted for 3.9%, 57% and 39.1% of all breast lesions respectively as shown in table 1.

The commonest histological type of breast cancer is invasive ductal carcinoma which accounted for 74.9%; Invasive lobular carcinoma (15.8%); Medullary carcinoma (4.9%); Mucinous carcinoma (3.8%) and malignant phylloides tumour (0.5%) as shown in table 2.

Immunohistochemistry were done on 15 cancers patients which shown 2 patients are progesterone positive and 7 Herceptine receptor positive. All patients are oestrogen receptor negative as shown in table 3.

## DISCUSSION

There is wide spectrum of Breast diseases globally that affects females from teenage age throughout adult life. The prevalence is becoming alarming in our environment as many young females in their 2<sup>nd</sup> and 3<sup>rd</sup> decades of life present with breast lump that usually warrant surgical intervention. Our finding shows that breast lesions accounted for 17.1% of all tissue specimens within the study period. The reasons for the increase of breast lesions are due to some physiological and pathological hormonal effect on the female breast as well as vulnerability to infection among breast feeding mothers due to

**Table 1.** Age and Breast diseases distribution of 467 patients

Age-group (yrs)	Inflammation	Benign	Malignant	Total
10-19	3	71	1	75
20-29	7	140	8	155
30-39	2	27	45	74
40-49	1	20	50	71
50-59	4	8	39	51
60-69	1	0	27	28
≥70	0	0	13	13
TOTAL	18	266	183	467

**Table 2.** Histopathologic types of Malignant breast diseases

Types	No (%)
IDCA	137 (74.9)
ILCA	29 (15.8)
Medullary carcinoma	9 (4.9)
Mucinous carcinoma	7 (3.8)
Malignant Phylloides tumour	1 (0.5)
Total	183 (100)

IDCA – INVASIVE DUCTAL CARCINOMA

ILCA – INVASIVE LOBULAR CARCINOMA

**Table 3.** Immunohistochemistry Study on 15 patients with breast cancers

Hormonal Receptor	Positive
PR	2
ER	0
HER-2R	7

poor hygiene.

The inflammatory lesions may be underestimated in this study because most patients that presented with acute and chronic mastitis are treated with antibiotics medically or incision and drainage or needle aspiration without biopsied (Dener and Inan, 2003; Barbosa-Cesnik et al., 2003). This is common in lactating mothers especially during the first three months of post partum. The few patients that presented with chronic abscess and or mastitis that may confuse with a tumour are the ones that are biopsied. However, a case of HIV/AIDS patient presented with tubercular breast abscess which was rare but not unusual in our environment. Other forms of chronic non-specific mastitis are the predominant forms in our study and other studies by Shukla et al, in India (Shukla and Kumar, 1989).

Fibrocystic changes constitute the most frequent

benign disorder of the breast which generally affect premenopausal women between the ages of 20 and 50 years (Fitzgibbons et al., 1998; Sarnelli and Squartini, 1991). Fibrocystic changes in Indian women have been explained on the basis of early menarche, early marriage and multiparity (Shukla and Kumar, 1989). This is also similar to our environment of early marriage and multiparity.

Fibroadenoma is conventionally regarded as a benign tumour of the breast, which also thought to represent a group of hyperplastic breast lobules called "*aberrations of normal development and involution*" (Donegan, 2002; El-Wakeel and Umpleby, 2003; Hughes et al., 1987). It is the commonest benign neoplastic breast disease accounted for 32.1% of all breast diseases and 56.4% of all benign breast tumours. This agreed with other studies



**Figure 2.** Left Breast Benign Phylloides tumour in a 16 year old girl with necrosis of the skin.



**Figure 3.** Advanced breast cancer with fungating ulcerative mass of the Rt. Breast.

among Nigerian (Anyikam et al., 2008; Ihekwaba, 1994) and West Indian women (Raju, 1985). Majority of these patients are in their 2<sup>nd</sup> and 3<sup>rd</sup> decades of life in this study. It is usually a disease of early reproductive life; the peak incidence is between the ages of 15 and 35 years.

Other breast lesions like phylloides tumour are uncommon, study in Singapore (Giap, 2006), over ten years showed 17 cases while our study showed 15 cases in three years. One of the cases was a 16-year-old as shown in figure 2. The presentation is progressive breast lump which may mimic malignancy. The pressure effect of the growth on the skin makes it to undergo ischaemic and followed by ulcerative necrosis.

Breast cancer is extremely rare before the age of 20

years and relatively uncommon before the 3<sup>rd</sup> decade of life (Nggada, 2008; McPherson, 2000). However, the incidence rises rapidly with age till about 50 years and less so after that. The reason for this is because of the reproductive risk factors which include early menarche, short menstrual cycles, and ovulatory infertility. The cancer of the breast accounted for 39.1% of all breast lesions in this study.

The prevalence of breast cancers is on the increase and most patients present with advanced stage of the disease as shown in figure 3. This study was a follow-up of our previous report (Nggada et al., 2008) where there is increase general awareness of breast diseases especially breast cancer in recent time due to advocacy

by the Nigerian Cancer Society, NGO's like the Princess Nikky Breast Cancer foundation, Taimako cancer centre, Breast Cancer Project and others. The Federal ministry of health of Nigeria is also a driving force of advocacy, screening of all women at risk, control and management of cancers. This has contributed to the increase turn-out of patients to seek medical advice, however, there are still many that come with the advanced stage of the disease and others seek the traditional medication before finally come to the hospital for orthodox medication as showed in figure 3. Other studies from Western (Adesunkanmi et al., 2006). Eastern (Anyanwu, 2000) and Mid-Western (Ekanem and Aligbe, 2006). Nigeria also showed similar patterns of late presentation of breast cancers.

The management of breast cancer is multi-disciplinary approach that involves the Surgeons (general and plastic), Pathologists, Oncologists, Radiologists, Laboratory scientists, Oncology nurses, Social workers and Psychologists. The recent improvement of facilities in our centre in the diagnosis of breast cancers using immunohistochemistry analysis for oestrogen, progesterone and Herceptin-2 receptors will guide the treatment. Among the fifteen patients that had immunohistochemistry only two were progesterone positive and seven Human Epidermal growth factor Receptor 2-positive (HER2+) . Herceptin is approved for the treatment of early-stage breast cancer that is HER2+ and has spread into the lymph nodes, or is HER2+ and has not spread into the lymph nodes. If it has not spread into the lymph nodes, the cancer needs to be estrogen receptor/progesterone receptor (ER/PR)-negative or have one high risk feature.

The immunohistochemistry findings show that oestrogen receptors are rare among our patients and this may probably contribute to poor prognosis, though the sample size is small. However, this study may stimulate further studies using immunohistochemistry analysis and outcome of patients.

## ACKNOWLEDGEMENT

We wish to acknowledge the contributions of the technical staff of histopathology and Surgery departments of the University of Maiduguri Teaching Hospital.

## REFERENCES

- Lester SC (2004). The Breast. In Pathologic basis of diseases. 7<sup>th</sup> Edition.: 1120pp.
- Devitt JE (1986). Abandoning fibrocystic disease of the breast: Timely end of an era. *Can. Med. Assoc. J.* 134:217.
- Hutter RVP (1985). Goodbye to fibrocystic disease. *N. Engl. J. Med.* 312: 179.
- Adebamowo CA, Adekunle OO (1999). Case-controlled study of the epidemiological risk factors for breast cancer in Nigeria. *British J. Surgery*; 86(5): 665-668.
- Nggada HA, Yawe K-DT, Abdulazeez J, Khalil MA. (2008) Breast Cancer Burden in Maiduguri, North Eastern Nigeria. *The Breast J.* 14(3): 284-286.
- Dener C, Inan A (2003). Breast abscesses in lactating women. *World J. Surg.* 27:130–133
- Barbosa-Cesnik C, Schwartz K, Foxman B (2003). Lactation mastitis. *JAMA*; 289:1609–1612.
- Shukla HS, Kumar S (1989). Benign Breast disorders in NonWestern Population: Part II- Benign Breast Disorders in India. *World J. Surg.* 13:746-749.
- Fitzgibbons PL, Henson DE, Hutter RV (1998). Benign breast changes and the risk for subsequent breast cancer: an update of the 1985 consensus statement. Cancer Committee of the College of American Pathologists. *Arch Pathol Lab Med*;122:1053–1055.
- Sarnelli R, Squartini F (1991). Fibrocystic condition and "at risk" lesions in asymptomatic breasts: a morphologic study of postmenopausal women. *Clin. Exp. Obstet. Gynecol.* 18:271–279.
- Donegan WL (2002). Common benign conditions of the breast. In: Donegan WL, Spratt JS, eds. *Cancer of the Breast, Fifth Edition.* St. Louis, MO: Saunders,;67–110.
- EI-Wakeel H, Umpleby HC (2003). Systematic review of fibroadenoma as a risk factor for breast cancer. *Breast*;12:302–307.
- Hughes LE, Mansel RE, Webster DJT (1987). Aberrations of normal development and involution (ANDI): a new perspective on pathogenesis and nomenclature of benign breast disorders. *Lancet.* 2:1316–1319.
- Anyikam A, Nzegwu MA, Ozumba BC, Okoye I, Okafor OC (2008). Benign Breast lesions in Eastern Nigeria. *Saudi med J*;29(2):241-244.
- Ihekwa FN (1994). Benign Breast disease in Nigerian women: a study of 657 patients. *J R Coll Surg Edinb*; 39(5): 280-283.
- Raju GC, Jankey N, Naraynsingh V (1985). Breast disease in young West Indian women: an analysis of 1051 consecutive cause. *Postgrad Med. J.* 61(721): 977-978
- Giap ECS, Nagendran N, Mee LY, Hoon TP, Wong A, Heng I Jen SS, Cheong NF, Ming CX (2006). Phylloides tumour: Imaging features with histopathological Correlation. *Research Proceedings*; 15(3): 140-146.
- McPherson K, Steel CM, Dixon JM (2000). ABC of breast disease. Breast cancer-epidemiology, risk factors and genetics. *BMJ*; 321: 624-8.
- Adesunkanmi AR, Lawal OO, Adelusola KA, Durosinmi MA (2006). *Breast*; 15(3): 399-409.
- Anyanwu SN (2000). Breast cancer in Eastern Nigeria: a ten year review. *West Afr. Med.* 19(2): 120-125.
- Ekanem VJ, Aligbe JU (2006). Histopathological types of breast cancer in Nigerian women: a 12-year review (1993-2004). *Afr. J. Reprod. Health*; 10(1):71-75.