

Original Research Article

**The spectrum of breast diseases in Nigeria north central:
a histopathological survey**

Abstract

Breast diseases to most patients are sources of uncertainty and apprehension. The diseases of the breast are heterogenous group of lesions consisting of both benign and malignant lesions. This study from north central Nigeria aimed in examining these diverse lesions among north central Nigerians. 249 breast biopsies with histopathological diagnosis seen at Benue State University Teaching Hospital, Makurdi, Nigeria between October, 2012 and January 2017 were examined. The cases were retrieved from the data base of the histopathology departments with the patients request forms. The patient's bio data was extracted from the request form including age, sex and histopathological diagnosis. The 249 breast biopsies with diagnosis accounted for 8.1% of all tissue specimens diagnosed within the study period. 244 cases were female and 5 cases were male. The breast lesions are seen from second decades of life. Benign Breast Diseases (BBDs) accounted for 54% of cases while malignant breast diseases (MBDs) remaining 46%. The commonest BBD is fibroadenomas accounting for 54.1% of all BBDs. The commonest histological type of breast cancer is invasive ductal carcinoma (88.6%). The incidence of breast diseases especially malignancy is on the increase in our environment with most patients presenting at advanced stage of the disease. There is a need to increase advocacy with screening of patients at increased risk in order to get the patient at an early stage that will help improve prognosis.

Keywords: Benign breast Diseases, (BBDs), malignant breast diseases (MBDs).

Introduction:

In most patients male or female, a lump in the breast is a source of apprehension and uncertainty. Diseases of the breast especially female breast are very common in clinical practice. With increasing public awareness of breast cancers which is the most common female malignancy worldwide [1], the problems of the breast especially cancer has become a source of global concern being one of the highest morbidity and mortality in women (2).

29 In Nigerian and with increasing awareness, the overall yearly new cases of breast cancer are on the
30 increase. A report from Ibadan cancer registry showed that breast cancer has overtaken cancer of
31 the cervix in hospital based incidence (3). A review of solid cancers in Zaria showed that breast
32 cancers was second only to cancer of the cervix (4) Adebamowo and Adekunle (5) gave the
33 incidence of developed breast cancer in Nigeria to be between 7 to 10,000 and Nggada et al(6) in
34 Maiduguri also shows the burden of cancer in our environment.

35 Most lesions of the breast are benign with a wide spectrum depending on the age of
36 presentation. With these in mind we aimed at determining the prevalence and classifying the
37 spectrum of female breast diseases in Nigeria north central.

38 **Materials and methods**

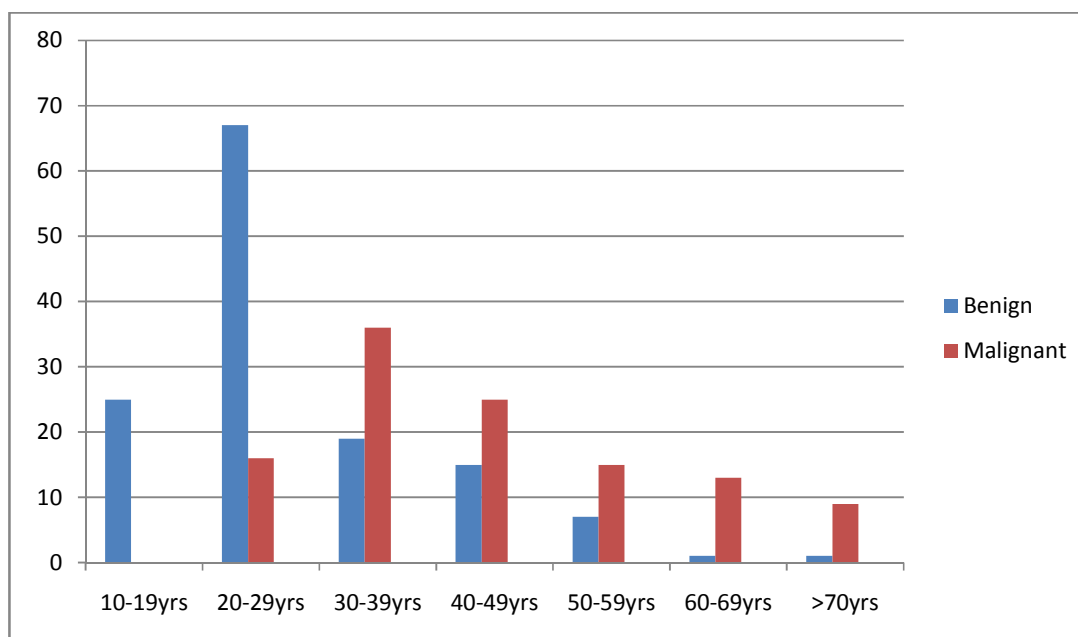
39 This is a retrospective review of all consecutive breast lesions seen at Benue state university
40 teaching hospital, Makurdi, Nigeria between October, 2012 and January, 2017. They were all
41 retrieved from the database of the Histopathology department along with the patients request
42 forms. The demographic information and histopathological diagnosis was extracted from the request
43 form. Those with incision biopsies and later had mastectomy were regarded as one case. The data
44 were analyzed using simple chart and table.

45 **Results**

46 A total of 249 histologically diagnosed breast lesions were seen accounting for 8.1% of all tissue
47 specimen diagnosed within the study periods. Of all the 249 cases, 5 were males. The breast lesions
48 are seen from second decade of life (figure 1) Benign breast disease accounted for 135 cases (53%)
49 while 114 cases (46%) were malignant lesions (figure 2).

50 The commonest BBDs were fibroadenomas accounting for 54.2% of BBDs. Others are fibrocystic
51 change (26.3%) fibroadenoma with fibrocystic changes, post inflammatory change and intraductal
52 papilloma (3.8% each). Tubular adenoma (2.3%), atypical lobular hyperplasia (1.5%), breast abscess
53 (1%), granular cell tumor and gynecomastia (0.7% each).

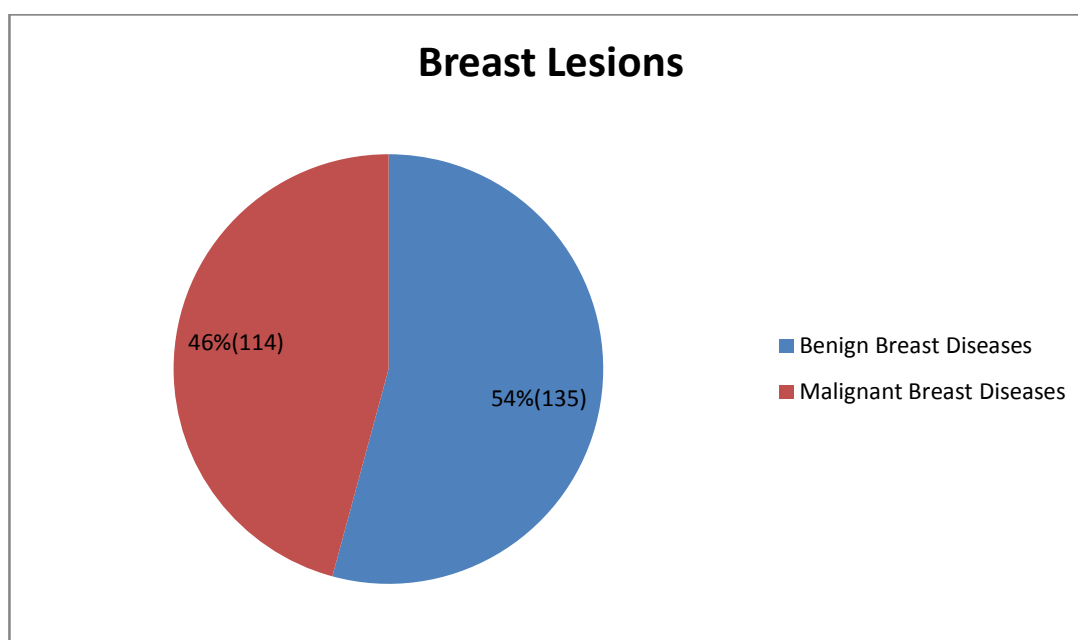
54 The commonest histopathological type of breast cancer is invasive ductal carcinoma which
55 accounted for 88.6% of malignant breast lesions (figure 3); malignant phylloides (4.4%); Invasive
56 Lobular carcinoma (2.6%); Paget disease of the breast (2.6%) and metastatic mucinous carcinoma
57 (1.8%). One of the cases of invasive ductal carcinoma was in a male patient. The peak age of
58 occurrences for MBDs in this study was 30-39 years.



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60 Figure 1:Bar chart showing age distribution of breast lesions.

61 Figure 2:Pie chart distribution of breast lesions



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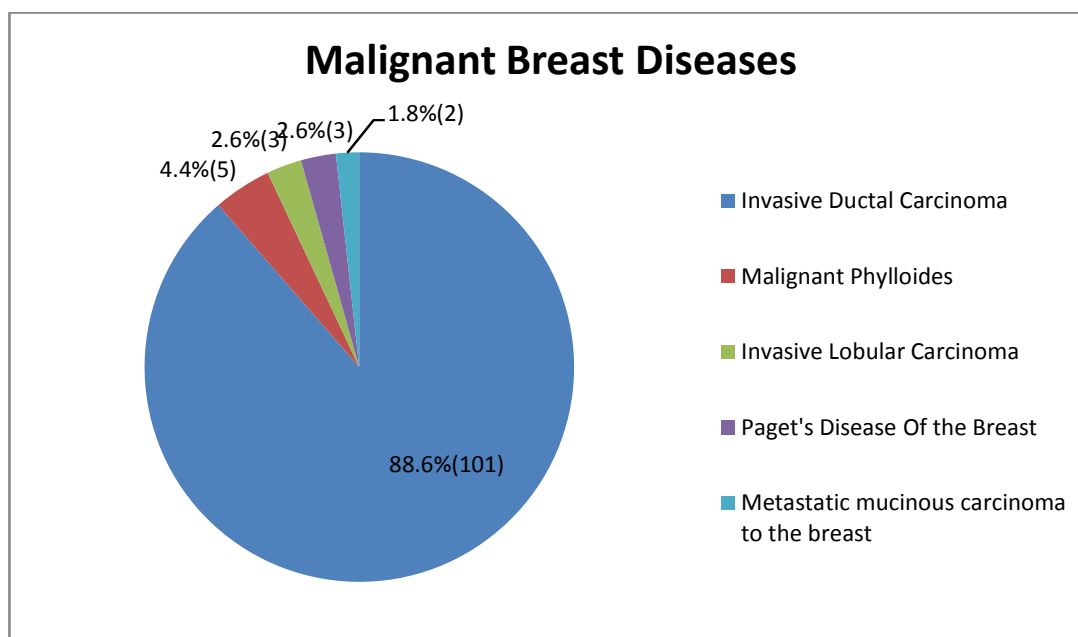


Figure 3:Pie chart showing histopathological types of MBDs

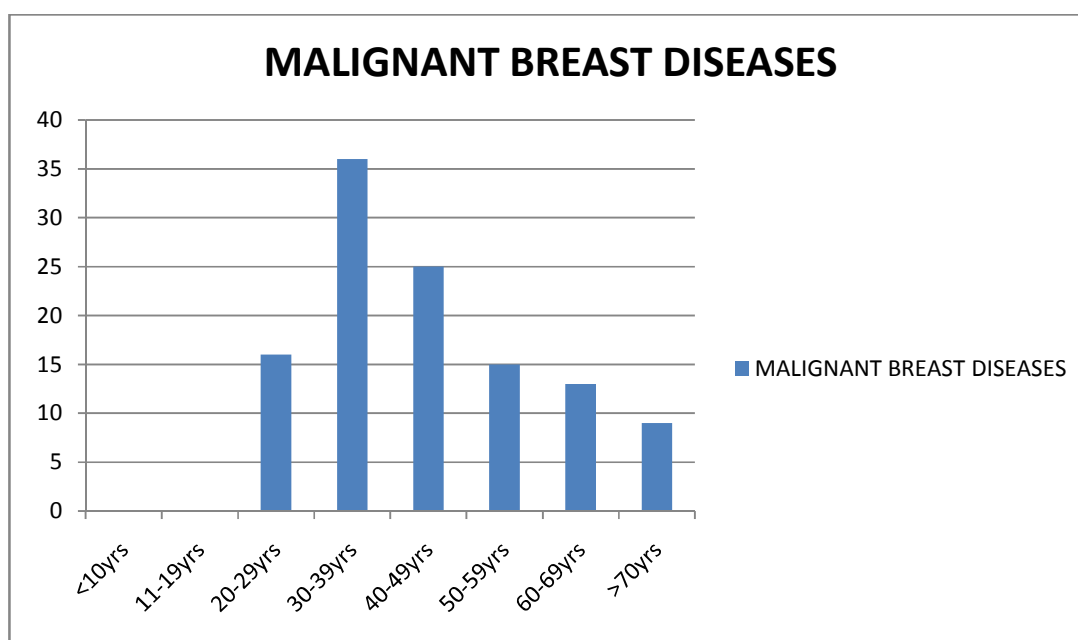


Figure 4:MBDs and age of occurrences.

70 **Discussion**

71 Breast lumps pose concerns and cosmetic hazard especially in females. The breast exhibits a wide
72 spectrum of diseases affecting the patient from teenage throughout adult life. With increasing
73 awareness about breast malignancy in our environment, the incidence and prevalence rate of breast
74 lesions are on the increase.

75 As in most studies within and outside Nigeria, BBDs are more common than MBDs in Makurdi,
76 though the proportion is lower to most published work in Nigeria. In this study BBDs comprised 54%
77 of all breast lumps. This is lower than 72.4% of 2011 Benin Study (7), 71.2% of 2014 Warri Study (8),
78 and 68.3% of 2014 Bayelsa study (9). Our figure compared favorably with findings from Gombe,
79 Nigeria with 59.5% (10). Though BBDs are generally the predominant breast lesions in most centers
80 in Nigeria, there are some variations in their actual incidence from place to place. Factors like health
81 education and information and accessibility to health care facility may play a role in this.

82 Fibrocystic changes (FCCs) were the second most common BBDs in our study. In the USA,
83 FCCs constituted 40% of histologically diagnosed breast lumps and were present in 60-90% of
84 autopsies making it more of physiological aberrations than disease (11, 12). Inflammatory lesions
85 (inflammatory changes, breast abscess and fat necrosis) constituted 7.9% of cases seen in this work.
86 This is comparable to 6% seen in Kano (12) and 4.69% in Ife (13). These figures may be
87 underestimated in our environment where most patients that presented with inflammatory lesions
88 are treated with antibiotics without biopsies.

89 Intraductal papillomas which are benign growth within dilated ducts and consisting of
90 multiple branching fibrovascular cores were seen 3.8% of our cases. The incidence compares
91 favorably to other work where the incidence is approximated to 2-3% (14). They usually present with
92 nipple discharge with an average age of occurrence of 48 years (15). In our study its peak age of
93 occurrence was 40-49 years.

94 Other less common lesions including tubular adenoma, atypical lobular hyperplasia and
95 granular cell tumour and gynaecomastia together accounted for 4.9% of BBDs in this work. Tubular
96 adenomas are benign breast lesions that tend to occur during the reproductive age, usually solitary
97 and well circumscribed. Atypical lobular hyperplasia has histologic features similar to lobular
98 carcinoma in situ with the only difference been the extent and degree of epithelial proliferation.
99 Granular cell tumor, are an uncommon BBDs originating from Schwann cells of the peripheral
100 nervous system. It constituted 0.7% of our BBDs, an incidence that is lower to other work (16). A
101 case of gynecomastia, representing 0.7% of the BBDs was seen in our work. They represent an

imbalance between estrogens that stimulates breast tissue and androgens which counteract these effects.

MBDs accounted for 46% of all breast lesions in our study. This is high compared to work done by Nggada HA et al in 2011 in Maiduguri that recorded 39.1% (17). Increasing awareness of breast diseases and advocacy by NGOs in Makurdi can account for this.

The peak age of presentation for MBDs in our work is 30-39years with 31.6% of the studied breast lump occurring in this age group. There was no case between 10-19 years. Breast cancer is extremely rare between age 20 years and relatively uncommon before the third decades of life (6,18). Compared to findings in the UK, breast cancer incidence is strongly related to older age with the highest incidence rates overall being in older people. In the UK between 2012-2014, on an average each year, almost half (48%) of cases were diagnosed in people aged 65 and over (19, 20, 21, 22). When our data and that of UK are adjusted for age specific incidence only 29.3% of MBDs in our work are between ages 60 and above compared to 48% of UK work. Though reproductive risk factors like short menstrual cycles, ovulatory infertility and early menarche has been cited for higher incidence rates in older people, work still need to be done in our environment to account for this relatively younger incidence age. Our cases are majorly invasive ductal type. The average age at diagnosis is 61 years for white women, 56 for Hispanics, and 46 for African American women (23).

The incidence of breast cancer is on the increase in our environment with most patients presenting at advanced stage of the disease. The incidence of breast cancer is four to seven times higher in the United States and Europe and it is estimated that by 2020, 70% of cases will be in developing countries, stemming from adoption of Western social lifestyles, including delayed pregnancy, fewer pregnancies and decreased breastfeeding (23).

Conclusion:

Management of breast cancer is a multi-disciplinary. Since most of our patients tend to present late, there is a need for increase advocacy with screening of patients at risk. It is only when we are able to get our patient at an early stage that will help improve our prognosis This should be coupled to improved diagnostic facilities in our center like using immunohistochemistry to analyze for estrogens and progesterone and Herceptin -2 receptors which will guide our management.

Disclosure of potential conflicts of interest:

The authors indicate no potential conflicts of interest

133 **Ethical Clearance:**

134 Ethical clearance obtained from the ethical committee of BSUTH.

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