A Pathologic Study of Breast Diseases in a Nigerian Tertiary Center

Uchendu Obiora Jude[1,2]

ABSTRACT

Introdcution: Breast diseases are relatively common. This paper addressed the age, gender and histology pattern of breast diseases encountered in a Nigerian apex hospital.

Material and methods: The study was a 70 months (1st January 2014-31st October 2019) descriptive retrospective study of breast specimen received at the histopathology department of Delta State University Teaching Hospital, Oghara, Nigeria. The age, sex, and corresponding histological diagnosis of these patients were analyzed using statistical package for social sciences (SPSS) software version 22.0 (IBM, USA 2015). The statistical summary were subsequently presented in tables.

Results: A total of 416 specimens from 11 male and 389 female patients were analyzed. These specimens consist of 41 mastectomies, 96 tru-cut and 279 excision biopsies. The age range, mean age and peak age of the patients were 15-86 years, 40.8 years and fourth decade respectively. Inflammatory, benign neoplastic and malignant diseases accounted for 42(10.1%), 147(35.3%), and 227(54.6%) of the cases respectively, with corresponding mean ages of 43.47, 27.37and 48.83 years, with mastitis, fibroadenoma and invasive ductal carcinoma- no special type IDCNST being the corresponding majority. The male breast diseases were gynecomastia (54.5%), invasive ductal carcinoma (36.4%) and mastitis (9.1%).

Conclusion: Inflammatory, benign neoplasms and malignant breast diseases occur at a ratio of 1:3.5:5.4 with mastititis, fibroadenoma and IDC NST being the corresponding most common disease and females are most often affected. The overall mean age was 40.8 years and the corresponding mean ages for inflammatory, benign and malignant diseases were 43.47, 27.37and 48.83 years respectively. This information is vital for effective health intervention.

Keywords: Pathologic Study, Breast Diseases

INTRODUCTION

The breast is a very unique organ. While it is a rudimentary organ among males, it is for the female a source of nutrition for her infant and an emblem of identity, femininity, sexuality and beauty.[1] Therefore anything that negatively the breast, has devastating psychological consequences to the individual.[2]

Breast diseases are numerous and vary according to its anatomic constituents (the ducts and lobules, the luminal and myoepithelial cells and the interlobular and intralobular stroma). Diseases of the breast also vary in line with the dynamic transition of breast through different phases of life (puberty, menstruation and ovulation cycles, pregnancy, and menopause). Consequently, breast diseases are relatively much more common and complex among females than among males.[3]

Breast diseases are commonly encountered in clinical and surgical pathology practice. Among these diseases, studies has shown that non-malignant breast diseases are far more common than malignant breast diseases with fibroadenoma and invasive ductal carcinoma being the leading examples of either groups.[3] Cancer of the breast is a global concern as it is currently the most common malignancy among females worldwide,[4] the leading cause of cancer mortality among African women,[5] and the 2nd leading cause of cancer mortality among Caucasians(after lung cancer).[3]

Little is known about histologic pattern of breast diseases in Delta State, Nigeria. This study is the first of its kind and is based on surgical specimens received at Delta State University Teaching Hospital. Results of this study will contribute in advancing the knowledge and public awareness of the epidemiology of breast lesions in this region and provide data for necessary action by policy makers.

MATERIAL AND METHODS

This a descriptive retrospective study of all breast surgical specimens (Mastectomies, excision, incision and core needle biopsies) received at the department of Histopathology, DELSUTH for diagnostic evaluation. The study period was 70 months spanning from 1st January 2014 to 31st October 2019. The surgical Pathology specialists are relatively few in Delta State as a result of which the Histopathology department receives most surgical pathology specimens within the State, including specimens generated from hospitals of lower levels of care within and around the state. The study involved retrieval of all histopathology reports, and corresponding patient's request forms, histopathology glass slides, and paraffin-embedded tissue block for accurate characterization where necessary.

Information utilized for this study includes the gender, age and histologic diagnosis. To avoid confusion, in bilateral breast lesions, each of both breasts is treated as a single entity. For same patient or a particular breast, complimenting mastectomy and tru-cut/excisional biopsy were treated as the same case and where contrasting diagnosis was observed, these were reconciled by looking at the materials earlier used

[1]Senior Lectuer, Department of Morbid Anatomy,Delta State University, Abraka, [2]Honarary Consultant Pathologist, Delta State University Teaching Hospital, Oghara, Delta State, Nigeria

Corresponding author: Uchendu Obiora Jude, Department of Morbid Anatomy, Delta State University, Abraka, Nigeria

How to cite this article: Uchendu Obiora Jude. A pathologic study of breast diseases in a Nigerian tertiary center. International Journal of Contemporary Medical Research 2020;7(5):E1-E6.

DOI: http://dx.doi.org/10.21276/ijcmr.2020.7.5.10

in making diagnosis.

Exclusion criteria

Excluded from the studies are duplicates of surgical specimen for same patient, cases with inconclusive diagnosis, incomplete data and missing results. Together 15 surgical specimens did not meet the inclusion criteria.

Approval to conduct this research was granted by the committee on ethics for research of the Delta State University Teaching Hospital before the commencement of the study.

STATISTICAL ANALYSIS

Analysis was done using statistical package for social sciences (SPSS) software version 22.0 (IBM, USA 2015), and the result presented in tables.

RESULTS

Nature of specimen	No of cases	Percentage of cases
Mastectomy	41	9.5
Tru-cut	96	20.0
Excision	279	70.5
Total no of surgical specimens	416	100

Table-1: Nature of surgical specimens submitted for histologic diagnosis

During the study period, a total of 416 breast specimens were received accounting for 25.4% percent of all surgical samples received in the department. These consist of 16 bilateral and 384 unilateral breast diseases. Of these cases, there were 11 affected males and 404 affected females within the age range of 15-86 years, giving a male to female ratio of 1:36.7. In this study, the surgical specimens consist of 41 mastectomies, 96 tru-cut biopsies and 279 excisional biopsies account for 9.5%, 20.0% and 70.5% of the cases. This is shown in table I The histologic pattern of the breast disease with gender distribution is shown in table II. Inflammatory lesions, benign neoplastic and malignant neoplastic lesions accounted for 42(10.1%), 147(35.3%), and 227(54.6%) cases giving a ratio of 1:3.5:5.4. These inflammatory lesions consist of mastitis (23[5.5%] cases), duct ectasia (14[3.4%] cases), fat necrosis (3[0.7%]cases) and epidermal inclusion cyst (2[0.5%] cases). Benign neoplastic diseases consist mainly of fibroadenoma (97[23.3%] cases), fibrocystic disease (17[4.1%] cases), tubular adenoma (7[1.7%] cases), gynecomastia (6[1.4%] cases), intraductal papilloma (5[1.2%] cases), atypical ductal hyperplasia (4[1.0%] cases), microglandular adenosis (3[0.7%] cases), benign phylloides (2[0.5%] cases), and sclerosing adenosis (2[0.5%] cases). Malignant diseases consist of mainly of IDCNST (202[48.6%]cases), Mucinous carcinoma (7[1.7%] cases) medullary carcinoma(4[1.0%]

Histology group	Histologic type	No of cases (%)		Total no of cases
		Female	Male	
Inflammatory disease	Duct ectasia	14(3.5)		14(3.4)
	Mastitis	22(5.4)	1(9.1)	23(5.5)
	Fat necrosis	3(0.7)		3(0.7)
	Epidermal inclusion cyst	2(0.5)		2(0.5)
Benign neoplasm	ADH	4(1.0)		4(1.0)
	Benign phylloides	2(0.5)		2(0.5)
	Cystic change	1(0.3))		1(0.2)
	Fibroadenoma	97(24.0)		97(23.3)
	Fibrocystic disease	17(4.2)		17(4.1)
	Galactoles	1(0.3)		1(0.2)
	Gynecomastia		6(54.6)	6(1.4)
	Intraductal papilloma	5(1.2)		5(1.2)
	Lactating adenoma	1(0.3)		1(0.2)
	Lipoma	1(0.3)		1(0.2)
	Microglandular adenosis	3(0.7)		3(0.7)
	Sclerosing adenosis	2(0.5)		2(0.5)
	Tubular adenoma	7(1.7)		7(1.7)
Malignant neoplasm	DCIS	3(0.7)		3(0.7)
	IDC NST	199(49.1)	4(36.4)	202(48.6)
	LCIS	2(0.5)		2(0.5)
	Lobular carcinoma	2(0.5)		2(0.5)
	Mucinous carcinoma	7(1.7)		7(1.7)
	Metaplastic carcinoma	3(0.7)		3(0.7)
	Medullary carcinoma	4(1.0)		4(1.0)
	Malignant Phylloides	2(0.5)		2(0.5)
	NHL	1(0.3)		1(0.2)
Total number of cases		405(100)	11(100)	416(100)

ADH (Atypical ductal hyperplasia); DCIS (Ductal carcinoma in situ); LCIS (Lobular carcinoma in situ); IDC NST (Invasive ductal carcinoma no special type); NHL (Non-Hodgkins lymphoma)

Table-2: Distribution of histologic types of breast diseases

Histology group	Histologic type	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	Mean age
Inflammatory disease	Duct ectasia	0	0	7	2	5	0	0		44.04
	Mastitis	2	1	7	5	4	2	2		43.62
	Fat necrosis	0	0	1	1	0	1	0		47.33
	Epidermal inclusion cyst	0	1	1	0	0	0	0		32.0
Benign neoplasm	Atypical ductal hyperplasia	0	0	1	1	1	0	1		32.75
	Phylloides	0	1	1	0	0	0	0		32.5
	Cystic change	0	1	0	0	0	0	0		29.0
	Fibroadenoma	30	53	7	7	0	0	0		23.5
	Fibrocystic disease	0	3	5	7	1	1	0		40.06
	Galactoles	0	1	0	0	0	0	0		29.0
	Gynecomastia	0	2	1	1	2	0	0		40.17
	Intraductal papilloma	0	2	0	3	0	0	0		36.6
	Lactating adenoma	0	1	0	0	0	0	0		20
	Lipoma	0	0	0	1	0	0	0		40
	Microglandular adenosis	0	2	1	0	0	0	0		31.67
	Sclerosing adenosis	0	1	1	0	0	0	0		26.5
	Tubular adenoma	0	1	4	2	0	0	0		25.29
Malignant neoplasm	DCIS	0	0	0	1	1	0	1		48.83
	IDC NST	0	1	56	55	51	34	5	1	
	LCIS	0	0	0	0	0	2	0		
	Lobular carcinoma	0	0	1	0	1	0	0		
	mucinous carcinoma	0	0	1	0	4	0	2		
	Metaplastic ca	0	0	0	1	2	0	0		
	Medullary carcinoma	0	0	0	1	1	0	2		
	Malignant Phylloides	0	0	0	1	1	0	0		
	NHL	0	1	0	0	0	0	0		
Total number of cases		32	72	95	89	74	40	13	1	416
Percentage of cases(%)		(7.7)	17.3%	22.8	21.4	17.8%	9.6	3.1%	0.2%	100%

ADH (Atypical ductal hyperplasia); DCIS (Ductal carcinoma in situ); LCIS (Lobular carcinoma in situ); IDC NST (Invasive ductal carcinoma no special type); NHL (Non-Hodgkins lymphoma)

Table-3: Age distribution of histologic types of breast diseases

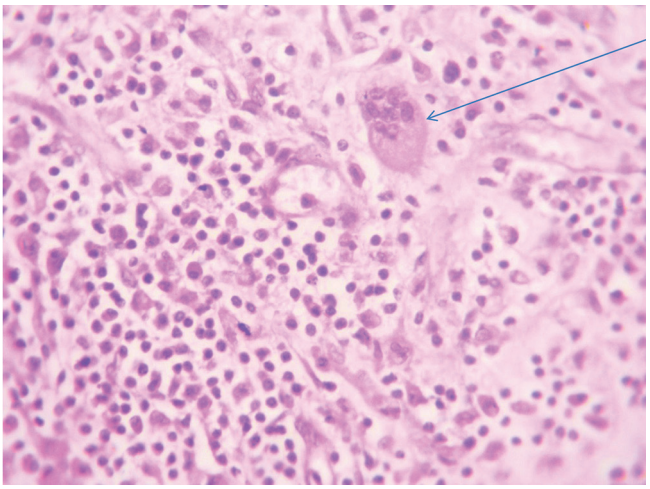

Figure-1: Granulomatous mastitis in a 34 year-old female (X10)

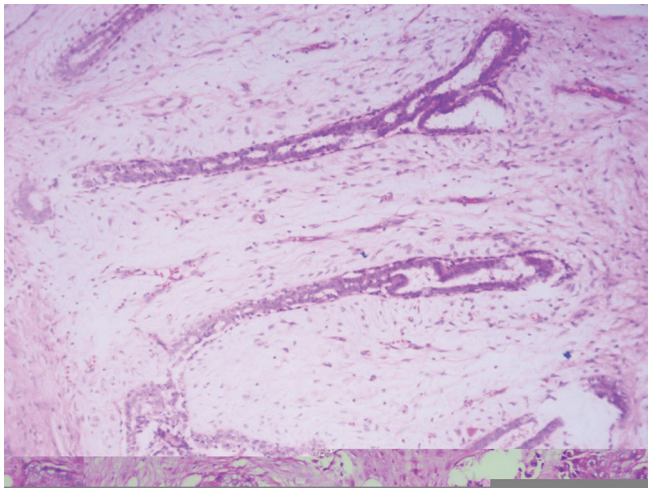

Figure-2: Fibroadenoma in a 19 year-old female (X10)

cases), Ductal carcinoma in-situ (3[0.7%]), Metaplastic cancer (3[0.7%] cases), Lobular carcinoma in-situ (2[0.5%] cases), lobular carcinoma (2[0.5%] cases), malignant phylloides (2[0.5%] cases) and Non-Hodgkin lymphoma (1[0.2%]case). Among the 11 breast lesions affecting males, we encountered 6 cases of gynecomastia, 4 cases of invasive ductal carcinomas and a case of mastitis.

The age distribution of the histologic types of breast disease is depicted in table III. The corresponding cases in the 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th decades were 32(7.7%), 72(17.3%), 95(22.8%), 89(21.4%), 74(17.8%), 40 (9.6%), 13(3.1%) and 1(0.2%) cases respectively.

The mean ages for inflammatory disorders, benign neoplastic diseases and malignant diseases were 43.47, 27.37and 48.83 years respectively. Figure 1 shows Granulomatous mastitis in a 34 year-old female (X10). Plasmacytoid mononuclear

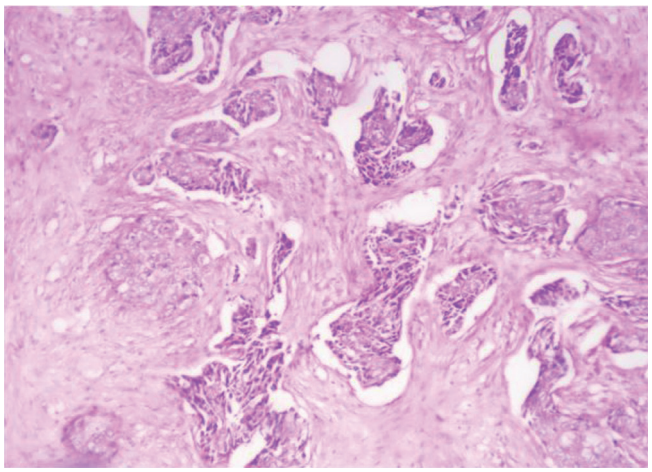

Figure-3: Invasive Ductal Carcinoma No Special Type in a 49 years old Female (X10)

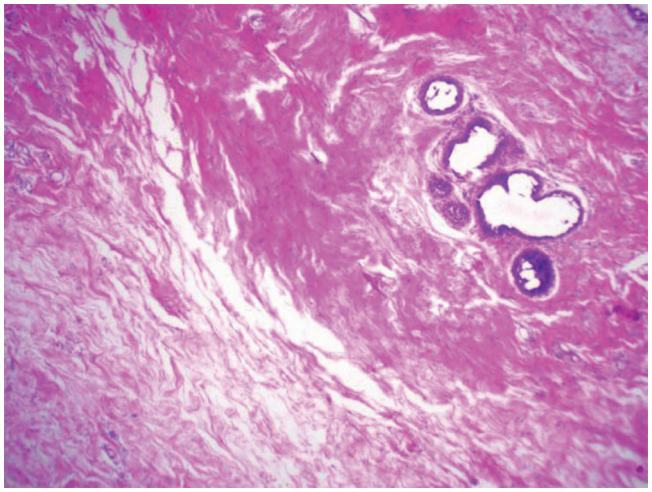

Figure-4: Gynecomastia in a 42 year old male (X10)

inflammatory cells with multinucleated giant cell were seen, marked as Arrow (Multinucleated giant cell). Figure 2 shows Fibroadenoma in a 19 year-old female (X10). A proliferating fibromyxoid stroma compressing the ducts into elongated structures with slit-like spaces. Figure 3 shows invasive Ductal Carcinoma No Special Type in a 49 years old female (X10). Tumour cells appeard in nests within a desmoplastic stroma. Figure 4 shows Gynecomastia in a 42 year old male (X10). Terminal ducts lined by multilayered epithelium with papillary tufts (without lobule formation) were seen and surrounded by periductal hyalinized stroma

DISCUSSION

In this analysis, breast lesion accounted for 25.5% of all surgical specimens. This is comparable to 26% observed by Nwafor and Keshinro in Lagos State[6] but higher than 8.1%, 16% and 17.1%, Markurdi, Uyo and Maiduguri respectively.[7, 8,9] These facts substantiates that breast diseases account for a remarkable volume of pathologist and the surgeon's workload, a reflection of the disease burden in our environment. Egwuonwu and co-workers had suggested that increased public awareness of breast cancer in Nigeria positively influenced health seeking behavior of patients with breast diseases.[11] Another likely explanation for the high volume of breast diseases diagnosed in the hospitals is that the breast is an exposed organ, freely accessible to self-examination and disease surveillance.[3]

The gender distribution of breast disease in this study showed a biased female predominance which correlated well with other literatures.[3,6,7,8,9] This is because the female breast has more cells than its male counterpart and and unlike the male breast, its cells are are continuously exposed to the growth-promoting influence of female sex hormones such as estrogen and progesterone.[3]

Inflammatory diseases accounted for 10% of breast diseases in this study. This is higher than

3.9% reported in both Uyo[8] and Maiduguri.[9] and 4% reported in Lagos.[6] Earlier studies among Caucasians has however shown that inflammatory disorders are rare, accounting for less than 1% of the cases.[3] Inflammatory breast diseases are usually causes by infection, autoimmune diseases and foreign body reaction.[3] The relatively higher rate of inflammatory breast disorders in our environment is probably related to poverty and poor hygiene, diseases of skin in the breast region and cases of inflammatory breast cancers that might have been erroneously diagnosed as inflammatory disease as a result of improper biopsy site selection.

Benign neoplastic breast disease accounted for 35.3%% of tumours of breast in this study which is lower than 51.8%, 66.3% and 74.5% reported in Uyo, Kano and Lagos respectively.[6,8,12] Most breast diseases managed in the study center were referred cases from either private centers or lower level of care government hospitals. These centers were able to manage benign tumours and therefore unlikely to refer such patients to tertiary care center, culminating in biased referral of malignant cases to the study. The epidemiologic significance of some of these benign tumours lies in the risk of later developing into invasive cancer.[3] These group of patients calls for continuous clinical and radiologic surveillance.

Fibroadenoma was the commonest benign breast tumour, accounting for 42.7% of benign tumours in this analysis. This correlates well with 42%, 43%, 48.6% and 47.1% reported in India, Benin, Lagos and Kano.[6,12,13,14] Higher rates of fibroadenoma have been reported in Maiduguri, Ibadan, Saudi Arabia, Ghana, and Sokoto where they accounted for 56.4%,59%, 69.3%,70% and 96.9% of benign tumours respectively.[9,15,16,17,18] The mean age of patients with fibroadenoma in this study is 23.5 years which correlates with result by other researchers.

Fibroadenoma are now considered to be a hyperplastic lesion derived from aberrant maturation of breast, and not necessarily a neoplasm.[19] However, most of the fear and anxiety entertained by the patients arise because of suspicion for malignancy.

Fibrocystic diseases was the second most common benign neoplastic disease in this study accounting for 11.4% of the cases. It was also similarly reported as the second most common benign breast disease in Lagos, Enugu, Kano and Makurdi accounting for 22.4%, 22.9%, 25.4% and 26.3% of the cases. [6,7,12,20] In contrast, Memon et al in Parkistan

reported that fibrocystic disease was the most common benign breast disease where it accounted for 42% of the cases.[21]

Malignant breast disease accounted for 52.2% of all breast surgical specimens in our study. As a referral center, the patients attended to are more likely to be the patients that other hospitals are uncomfortable with managing, accounting for the high rate of cancer in our study center. Further to this, inflammatory conditions encountered in the study center which responded well to antibiotics are less likely to considered for surgical examination. Together these factors may account for the high incidence of breast cancer, among breast diseases managed in the study center. There is however need for a population-based study in this region to ascertain the true incidence. The incidence in our report correlates well with 54.5% reported in both Nnewi and India,[11,14] but is higher than the incidence observed in Ibadan, Ife, Calabar, Lagos, Kano, Ilorin, Maiduguri and and Makurdi with breast cancers accounting for 10.5-46% of the cases.[6,12,13, 15,22-,25]

The age range of patients with breast cancer was 28-86 years, which is in agreement with rarity of breast cancer before the age of 25 years in earlier investigations.[3] A mean age of 48.8 years was observed among breast cancer patients in this analysis which correlates with the mean ages of 30.6-60.8 years (median 50.2 years), in other parts of Africa.[26] Our report is however lower than the mean age of 56 years and 61 years for Hispanic and White women with breast cancer respectively.[3] The difference may be attributed to our lower life expectancy at birth (54 years),[27] cutting shot the age related peak at the age of 70-80 years for breast cancer seen in developed countries.[3] The higher incidence of breast cancer among younger population in African population calls for concern and action by government to ensure routing screening using mammography, accurate and complete diagnosis and treatment using radiotherapy. This implies provision of more funds to the health sector.

Ninety-nine point six percent of the cancers observed in this study were adenocarcinoma which concurs with earlier reports. IDC-NST was also the most common histologic type in this study, which correlates well with other studies.

Rarity of breast diseases has been well documented among males in English literature. In this study, it accounted for 2.6% of all surgical specimen encountered. This observation is similar to 19%, 2.0%, 2.2% and 2.6% prevalence reported in Uyo,[8] Makurdi,[7] Lagos[6] and Maiduguri[9] respectively. Gynecomastia and invasive ductal carcinoma were the predominant diseases accounting for 54.6% and 36.4% of the cases respectively. This is similar to report in Ilorin where both disorders accounted for 93% of male breast diseases [28] but lower than 63% observed in Lagos.[6] In this study, male breast cancer accounted for 2.5% of malignant breast diseases. This is similar to the 2.1%, 2.2%, 3.4% and 3.9% reported in Benin,[13] Lagos,[6] Ibadan[15] and Ife[23] respectively. Among western population incidence of male breast cancer is relatively lower, accounting for 1% of breast cancer.[3]

CONCLUSION

In sum, breast diseases constitute a significant proportion of surgical specimens in Delta State, Nigeria, with a male to female ratio is 1:36.7. Inflammatory lesions, benign tumour and malignant diseases occur at ratio of 1: 3.5: 5.4 respectively with mastitis, fibroadenoma and invasive ductal carcinoma being the corresponding most common variant. There in need for concerned policy makers to invest more in cancer care and cancer registry in this region.

ACKNOWLEDGEMENT

I am highly indebted to the staff of Histopathology Department of Delta State University Teaching Hospital, Oghara, Delta State. Dr Madueke Chukudi of the department of Pathology, University of Benin Teaching Hospital took the pictures of the histology slides used in this work.

REFERENCES

1. Cebeci F, Yangın HB, Tekeli A. Life experiences of women with breast cancer in south western Turkey: A qualitative study. Eur J Oncol Nurs. 2011; 16:406–412.
2. Spencer KW Significance of the breast to the individual and society. Plast Surg Nurs. 1996;16:131-2.
3. Kumar V, Abbas AK, Aster JC. The breast in Robbins and Cotran pathologic basis of diseases 9th ed. Elseview Saunder. 2015; 1043-1071.
4. M. Ghoncheh, Z. Pournamdar, H. Salehiniya. Incidence and Mortality and Epidemiology of Breast Cancer in the World. Asian Pacific Journal of Cancer Preview. 2016; 17:43-46.
5. Akinde OR, Phillips AA, Oguntunde OA, Afolayan OM. Cancer Mortality Pattern in Lagos University Teaching Hospital, Lagos, Nigeria. Journal of Cancer and Epidemiology. 2015; 1-6.
6. Nwafor CC, Keshinro SO. The Pathology of Breast Biopsies in a Sample of Nigerian Patients: Review and Analysis. Ann Afr Surg. 2015; 12: 89-94.
7. B. A. Eke, B. A. Ojo, P. D. Akaa, C. N. Ahachi, C. Soo, A. Adekwu. The Spectrum of Breast Diseases in Nigeria North Central: A Histopathological Survey. JAMPS. 2017; 13: 1-6.
8. Nwafor CC, Udo IA. Histological characteristics of breast lesions in Uyo, Nigeria. Niger J Surg 2018; 24:76-81.
9. Nggada HA, Gali BM, Bakari AA, Yawe-Terna EH, Tahir MB, Apari E, Dahiru AB, Yawe DT. The spectrum of female breast diseases among Nigerian population in Sahel climatic zone. Journal of Medicine and Medical Sciences. 2011; 2:1157-1161
10. Egwuonwu OA, Anyanwu SNC, Chianakwana GU and Ihekwoaba EC. Breast Lumps in Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria: A 5 year review. Nigerian Journal of Surgery 2009; 15:6-9
11. Ibrahim MI, Iliyasu Y, Mohammed AZ. Histopathological Review of Breast Tumors in Kano, Northern Nigeria. Sub- Saharan African Journal of Medicine. 2015; 2:47-51.
12. Aligbe J, Ugiagbe E. Breast Lesions in Benin City, Nigeria: A Private Practice Experience. Nig J Surg Sci. 2012; 22: 1-10.

13. Prajapati CL, Jegoda RKK, Patel UA, et al. Breast Lumps in a Teaching Hospital: A 5 Year Study. Nat J Med Research 2014; 4:65-7.
14. Irabor DO, Okolo CA. An Audit of 149 Consecutive Breast Biopsies in Ibadan, Nigeria. Pak J Med Sci. 2008; 24:257-62.
15. Al-Rikabi A, Husain S. Increasing Prevalence of Breast Cancer Among Saudi Patients Attending a Tertiary Referral Hospital: A Retrospective Epidemiologic Study. Croat Med J. 2012;53: 239- 43.
16. Bewtra C. Fibroadenoma in Women in Ghana. Pan Afri Med J. 2009;2:11.
17. Agbo, P.S., Oboirien M, Gana, G. Breast cancer incidence in Sokoto, Nigeria", International Journal of Development and Sustainability.2013;2:1614-1622.
18. Hughes LE, Mansel RE, Webster DJT. Aberration of normal development and involution: a new perspective on pathogenesis and nomenclature of benign breast disorders. Lancet. 1987; 11: 1316–9.
19. Anyikan A, Nzegwu MA, Ozumba BC, Okoye I, Olusina BD. Benign breast lesions in Eastern Nigeria. Saudi Medical Journal. 2008; 29:241-244.
20. Memon A, Parveen S, Sangrarasi AK, Malik AM, Laghari A, Talpur KAH. Changing Pattern of Benign Breast Lumps in Young Females. World J. Med. Sci. 2007;2: 21-24.
21. Otu AA. Benign breast tumours in an African population. J R Coll Surg Edinb 1990; 35; 373-5.
22. Oluwole SF, Fadiran OA, Odesanmi WO. Diseases of the breast in Nigeria. Br J Surg 1987;74:582-5.
23. Adeniji KA. Pathological appraisal of carcinoma of the female breast in Ilorin, Nigeria. Niger Postgrad Med J 1999; 6:56-9.
24. Mayun AA, Pindiga UH, Babayo UD. Pattern of Histological Diagnosis of Breast Lesions in Gombe, Nigeria. Niger J Med. 2008;17:159-62
25. Adeloye D, Sowunmi OY, Jacobs W, David RA, Adeosun AA, Amuta AO, Misra S, Gadanya M, Auta A, Harhay M, Chan KY. Estimating the incidence of breast cancer in Africa: a systematic review and meta-analysis. J Glob Health. 2018; 8: 010419.
26. UNDP 2018. Human Development Indices and Indicators: 2018 Statistical Update.
27. Adeniji KA, Anjori AS. Diseases Of The Male Breast in Ilorin, Nigeria. Nigerian Quarterly Journal of Hospital Medicine. 1999;9:8-10.

Source of Support: Nil; **Conflict of Interest:** None

Submitted: 01-04-2020; **Accepted:** 22-04-2020; **Published:** 15-05-2020