Original Article

Pattern of Benign Breast Diseases in Abakaliki, South Eastern Nigeria, A 5 Year Retrospective Study

Felix O. Edegbe[1], Joseph Chukwuma Uzoigwe[1], Chinedu O. Ndukwe[2], Anayo A. Nwachukwu[1], Ngozi Immaculata Ugwu[3], Oluomachi C. Nnachi[3], Uchechukwu N. Agada[1], Ugochukwu Uzodimma Nnadozie[4]

Departments of [1]Morbid Anatomy, [3]Haematology, Alex-Ekwueme Federal University Teaching Hospital, [4]Department of Surgery, Division of Plastic Surgery, Alex-Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi, [2]Department of Anatomic Pathology and Forensic Medicine, Nnamdi Azikiwe University, Awka, Anambra, Nigeria

Abstract

Background: There is a rise in the trend of benign breast diseases (BBDs) currently; this is made possible through public awareness of the disease. **Aim:** To determine the pattern of BBDs in a 5-year retrospective study was the aim of this study. **Materials and Methods:** A 5-year retrospective study and all histopathologically proven BBDs from January 2015 to December 2020 were reviewed. Software, version 21 of the statistical package for the social sciences (SPSS) was used for data analysis. **Results:** Cases of BBDs diagnosed within the study period were 143 and were made up of 5 (3.5%) males and 138 (96.5%) females, with a ratio of 1: 28. Among the females, the most commonly affected age group was 21–30 years contributing 57.8% (80/138), followed by ≤20 years contributing 36.2% (50/138). Among males ≤20 years of age group are mostly affected and contributing 60% (3/5). Fibroadenoma accounted for 62.9% (90/143), followed by fibrocystic disease (FCD) contributing 16.8% (24/143). The less common breast diseases in this study were fat necrosis, lipoma, granulomatous mastitis, periductal mastitis, and cysticercosis accounting for 0.7% each. **Conclusion:** Fibroadenoma remains the most common BBD although higher than in the earlier study, followed by FCD in our centre. Females constituted most of the affected individuals (21–30 years). The practice of breast self-examination should be encouraged to detect and treat lumps which may be malignant early enough to reduce morbidity and mortality.

Keywords: Benign breast disease, fibroadenoma, fibrocystic disease, Nigeria

Introduction

The level of awareness of breast cancer in Nigeria has been increased, thus encouraging women to always palpate their breasts to check for the presence of a lump. Once this, lump is noticed by the patients, it is a great source of concern and creates tension among patients. This is a result of increasing knowledge of breast cancer created by public awareness; currently, it is the most common female malignancy in Nigeria.[1] However, benign breast disease (BBD) is of high preponderance.[2-6] BBDs, comprise a different sets of diseases, which are as follows: congenital abnormalities, proliferative diseases epithelial and stromal components of the breast, inflammatory lesions, and neoplasm.[7]

It had been on records from the majority of studies, that breast lumps are mostly benign, and are described as nonproliferative epithelial lesions, few others indicate that proliferative epithelial lesions are premalignant, hence increasing the risk of cancer. According to studies by researchers, the risk of developing a mitotic lesion is high in patients with proliferative breast lesions.[8-10] However, studies have also indicated that there is an elevated risk for breast cancer associated with proliferative breast lesions within 10–15 years of diagnosis.[11-14]

It is therefore important for multidisciplinary approach involving histopathologists, radiologists, and medical and surgical oncologists, to not only identify and differentiate

Access this article online

Quick Response Code:

Website: www.njmonline.org

DOI: 10.4103/NJM.NJM_60_22

Address for correspondence: Dr. Ngozi Immaculata Ugwu, Department of Haematology, Alex-Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi, Nigeria.
E-mail: ngoziugwu5@gmail.com

How to cite this article: Edegbe FO, Uzoigwe JC, Ndukwe CO, Nwachukwu AA, Ugwu NI, Nnachi OC, *et al*. Pattern of benign breast diseases in Abakaliki, South Eastern Nigeria, A 5 year retrospective study. Niger J Med 2022;31:540-3.

Submitted: 16-May-2022 **Revised:** 18-Sep-2022
Accepted: 21-Sep-2022 **Published:** 29-Nov-2022

BBDs from malignant breast disease but also to have a sound idea of the pattern of the disease presentation and epidemiology.

There is a paucity of studies on BBDs in Nigeria, in addition to an earlier study done in our centre,[4,15-17] hence the need for more studies in our centre. To determine the histopathologic pattern of BBDs seen in Abakaliki, Ebonyi State, was the aim of the study, and also to examine whether there has been any change in the pattern of BBDs after 10 years of an earlier study.

Materials and Methods

A 5-year retrospective study and all breast specimens received in our centre within the period ranging from 2015 to 2020 were used in this study. BBDs were concentrated on as a focus for the study.

Biodata and clinical history or details of the patients were obtained from the surgical cutup registrar. In most instances, slides were obtained from the departmental archives or new slides were made from formalin-fixed, paraffin-embedded blocks, and the diseases were categorized.

Analysis of data obtained was done using software version 21 of the statistical package for the social sciences (SPSS Chicago Inc., IL, USA). To compute proportion, percentages, mean and standard deviation, descriptive statistics were used. Results were presented in tables and charts.

Research and Ethics Committee of Alex-Ekwueme Federal University Teaching Hospital, Abakaliki provided ethical clearance as required by law. Consent was not applicable in this study.

Results

A total of 143 of BBDs were diagnosed during the 5-year review period and comprised 5 (3.5%) males and 138 (96.5%) females, with a ratio of 1: 28 [Figure 1]. Among the females, the most commonly affected age group was 21–40 years contributing 57.8% (80/138), followed by ≤20 years contributing 36.2% (50/138). Among males, the most commonly affected age group was ≤20 years contributing 60% (3/5) [Table 1].

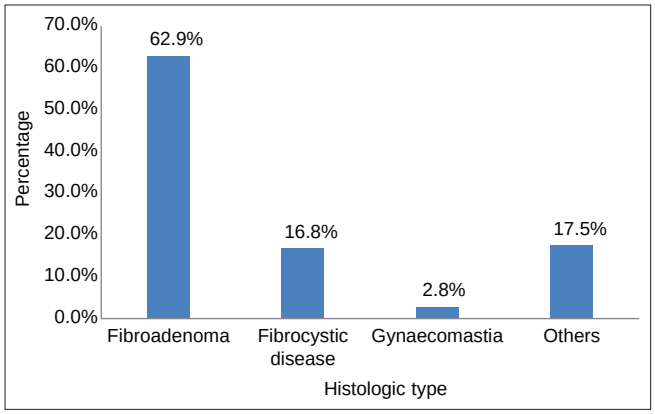

Figure 1: Bar chart showing the frequency distribution of benign breast diseases

Of the 143 of BBDs diagnosed during the 5-year review period, fibroadenoma was the most common accounting for 62.9% (90/143), followed by fibrocystic disease (FCD) which contributed 16.8% (24/143). The less common breast lesions in this study were fat necrosis, lipoma, granulomatous mastitis, periductal mastitis, and cysticerciosis accounting for 0.7% each.

The age and sex distribution of BBDs are shown in Tables 1-3 illustrated the age group distribution of the various histological types of BBDs. Benign phyllodes tumor and other fibroepithelial tumors in the series comprised 3 (2.1%) cases occurring predominantly in the second decade with a mean age of 25.5 years. Fibrocystic change, the second-most common lesion, accounted for 24 (16.8%) cases with a mean age of 25.5 ± 14.2 years, the age range of 21–30 years, and a peak incidence in the second decade.

Inflammatory lesions accounted for 15 (10.5%) cases. Of these, duct ectasia, fat necrosis, chronic mastitis, breast abscess, granulomatous mastitis, periductal mastitis, and acute mastitis accounted for 2 (1.4%), 1 (0.7%), 3 (2.1), 2 (1.4%), 1 (0.7%), 1 (0.7%), and 2 (1.4%) cases, respectively. A case of cysticercosis was seen in a 25-year-old female. No inflammatory lesion was observed among males [Table 2]. Stromal tumors comprised 0.8% of cases and were predominantly lipomas (1.4%) [Table 3].

In five cases of BBDs recorded in our study four were gynaecomastia, representing 2.8%. The age range of patients with gynaecomastia was 21–30 years, with a mean of 25.5 ± 14.2 years and a peak in the second decade. FCD (1 [0.7%] case) was also seen in males [Table 3].

Discussion

Public enlightenment and increased awareness of breast cancer have posed a lot of tension and unsettled minds in patients with breast lump, hence making it virtually possible for them to seek health care. The practice of breast self-examination is also being encouraged to enhance early detection of breast lump and subsequent presentation to health facilities for histological diagnosis.

A high incidence of BBDS noted in the study could be as a result of the awareness created.

Table 1: Age and sex distribution of benign breast diseases

Age range	Female	Male	Total (%)
≤20 years	50	3	53 (37.1)
21-40 years	80	1	81 (56.6)
41-60 years	6	1	7 (4.9)
61 and above	2	0	2 (1.4)
Total	138	5	143 (100.0)

Table 2: Age and sex distribution of inflammatory breast diseases

Inflammatory lesions	Number of cases, *n* (%)	Male	Female	Age range (years)
Duct ectasia	2 (13.3)	0	2	≤20
Fat necrosis	1 (6.7)	0	1	21-30
Chronic mastitis	3 (20.0)	0	3	31-40
Granulomatous mastitis	1 (6.7)	0	1	31-40
Periductal mastitis	1 (6.7)	0	1	31-40
Acute mastitis	2 (13.3)	0	2	31-40
Breast abscess	2 (13.3)	0	2	21-40
Cysticercosis	1 (6.7)	0	1	51-60
Galactocele	2 (13.3)	0	2	61-70
Total	15 (100.0)	0	15	

Table 3: Age and sex distribution of benign fibroepithelial/stromal lesions of the breast

Histological diagnosis	Number of cases, *n* (%)	Male	Female	Age range (years)
Epithelial lesions				
Fibroadenoma	90 (70.3)	1	89	≤20
Fibrocystic disease	24 (18.8)	0	24	21-30
Benign phyllodes	3 (2.3)	0	3	21-30
Tubular Adenoma	3 (2.3)	0	3	31-40
Intraductal Papilloma	3 (2.3)	0	3	21-30
Gynacomastia	4 (3.1)	4	0	21-30
Stromal lesions				
Lipoma	1 (0.8)	0	1	31-40
Fibrolipoma	0	0	0	Nil
Granular cell tumor	0	0	0	Nil
Leiomyoma	0	0	0	Nil
Hemangioma	0	0	0	Nil
Total	128 (100)	0	0	

Previous reports in some other studies done in Nigeria indicated that the incidence of BBDs much higher than that of malignant breast disease.[15,16] In Bayelsa, Enugu, Kano, Calabar, and Ibadan, BBDs accounted for 68.3%, 68.8%, 66.1%, 73.4%, and 89.4% of all cases of breast lumps recorded.[15-19] According to our records here, fibroadenoma was the most common BBD representing 62.9% of cases. Fibroadenoma was also reported as the most common BBD in most studies done in the past in Nigeria.[15,16,18] In Enugu, Ilesha, Port Harcourt, and Ife, fibroadenoma represented 44%, 46.2%, 51%, and 59.1% of cases of BBDs, respectively.[16,20-22] In other African countries like Ghana and even outside Africa such as the USA, fibroadenoma was also the commonest representing 54% and 68% of BBDs respectively.[23,24] However, in India,[25] fibroadenoma was recorded as the second-most common BBDs representing 20%, a similar with reports from Pakistan where fibroadenoma represented 11.5% was also noted.[26] The difference may be due to their study population which was made up of main adolescents and young adults while this study also included elderly people. In addition, Africans are susceptible to fibroadenoma which has been previously documented may also have accounted for the higher occurrence of fibroadenoma in this study and other African studies.[15]

An earlier prospective study done in our center over 10 years ago to assess the clinicopathologic features of breast lumps reported fibroadenoma as the most common breast lump which contributed 33.8%, followed by invasive ductal carcinoma and FCD which contributed 32.8% and 17.2%, respectively.[4] This study has shown that not much difference in the trend has occurred after 10 years as fibroadenoma has remained the most common breast lump, although higher in this study compared to the earlier study. The higher value of 62.9% of fibroadenoma found in this study may be due to the fact that this study examined only BBDs while the earlier study assessed all breast lumps, both benign and malignant cases.

Fibrocystic change in our study represented 16.8% of cases, this is lower than 22.9% and 27.7% recorded in a study done at Enugu and Port Harcourt, respectively.[16,20] A rise in figure of 42.2% was, however, reported in Ilesha. A study done in Pakistan by Memon *et al*.[26] showed preponderance of fibrocystic change to the tone of 66.3%.

Fibrocystic change consists of several components ranging from cystically dilated ducts to adenosis.[26] The predominant age range of patients with fibrocystic change in our study was 21–30 years, which was similar to that documented in Kano, Ibadan, and Ife.[17,19,22]

In this study, gynaecomastia was the most common among the BBD in males constituting 2.8% of all cases. This is similar to the 1% reported in caucasians and can be compared to the 1.4% and 3.8% recorded in Kano and Ife, respectively.[17,22] A tremendous figure of 14% reported in a study from Port Harcourt is similar to the 12% recorded in Ghana.[21,23] Gynaecomastia in this study showed a mean age of 25.5 years, with a peak incidence in the third decade and ages ranging from 21 to 30 years. However, this was not observed in this study. In Kano, no case of gynaecomastia was documented in the elderly patients as also noted in this study. However, four cases of gynaecomastia observed in this study were between the young age group of 21–30 years. In this study, three cases of benign phyllodes are recorded and they were seen in the young age groups with the peak of 21–30 years and a mean

age of 25.5 years. In contrast to the study done at Enugu, 3.9% of benign phyllodes was documented.[16] Meanwhile, is seen more in the fourth and fifth decades of life as seen in some literature with definite paucity in childhood and adolescence in Western countries.[8,9] In Ibadan, Benign phyllodes are seen more in the young age groups, with the average age of 18.8 years.[19] Therefore, this study and some other studies done in Nigeria showed preponderance of benign phyllodes occurs in a younger population, thus the need for further research. Similar study in Pakistan, benign phyllodes also occurred mostly in adolescents.[26]

Inflammatory lesions accounted for 10.5% of cases of BBDs in this study, slightly higher than the 4.6% and 6% recorded in Kano and Port Harcourt, respectively.[17,21] It is slightly lower than the 14.8% documented in Ife.[22] Similar to other previous studies done in Nigeria and other parts of the world,[2-6,16,18,24] stromal tumors were rarely encountered, accounting for only 1 (0.7%) out of 143 cases of benign breast lesions was recorded in this work. This is also seen in a study done in Pakistan, which recorded 0.68% of stromal tumors.[26]

Conclusion

Fibroadenoma has remained the most common benign breast lesion in our environment although higher than in the earlier study, followed by FCD, with the prevalence of 62.9% and 16.8%, respectively. Females constituted most of the affected individuals and the most commonly affected age group was 21–30 years, followed by <20 years. The practice of breast self-examination should be encouraged to detect breast lumps early. More so, histological diagnosis of all breast lumps is also recommended as this will help in the prompt detection and prompt treatment of premalignant lesions to reduce morbidity and mortality associated with malignant breast lesions.

Acknowledgment

The authors wish to appreciate the staff of the Department of Morbid Anatomy, Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi State Nigeria for their assistance during data collection.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Imam BA, Okechi OO, Abdullahi K, Abubakar U, Musa AB, Okorie N, *et al*. Immunohistochemical pattern of breast cancer in Maiduguri, Borno State. J Cancer Tumour Int 2017;5:1-10.
2. Egejuru RO, Nnadi IG, Duru ON. Fibroadenoma in blacks. Health 2017;9:1475-81.
3. Wichendu PN, Amabra D. Benign breast lumps in a tertiary health care facility in Southern Nigeria. IOSR J Dent Med Sci 2016;15:28-31.
4. Ugwu-Olisa OA, Nnamdi AS, Gregory NC, Festus I. Clinicopathologic study of breast lumps in Abakaliki, South Eastern Nigeria. Asian J Med Sci 2016;7:58-64.
5. Sangma MB, Panda K, Dasiah S. A clinico-pathological study on benign breast diseases. J Clin Diagn Res 2013;7:503-6.
6. Eke BA, Ojo BA, Okonkwo CE, Mba IN, Ngbea JA. Benign breast diseases in Makurdi, North Central Nigeria: A retrospective review of one hundred and thirty five (135) cases. Asian J Med Health 2017;4:1-6.
7. Forae G, Igbe A, Ijomone E, Nwachokor F, Odokuma E. Benign breast diseases in Warri Southern Nigeria: A spectrum of histopathological analysis. Ann Niger Med 2014;8:28.
8. Dupont WD, Page DL. Risk factors for breast cancer in women with proliferative breast disease. N Engl J Med 1985;312:146-51.
9. Collins LC, Aroner SA, Connolly JL, Colditz GA, Schnitt SJ, Tamimi RM. Breast cancer risk by extent and type of atypical hyperplasia: An update from the Nurses' Health Studies. Cancer 2016;122:515-20.
10. Kabat GC, Jones JG, Olson N, Negassa A, Duggan C, Ginsberg M, *et al*. A multi-center prospective cohort study of benign breast disease and risk of subsequent breast cancer. Cancer Causes Control 2010;21:821-8.
11. Hartmann LC, Degnim AC, Santen RJ, Dupont WD, Ghosh K. Atypical hyperplasia of the breast – Risk assessment and management options. N Engl J Med 2015;372:78-89.
12. Hartmann LC, Radisky DC, Frost MH, Santen RJ, Vierkant RA, Benetti LL, *et al*. Understanding the premalignant potential of atypical hyperplasia through its natural history: A longitudinal cohort study. Cancer Prev Res (Phila) 2014;7:211-7.
13. Walia S, Ma Y, Lu J, Lang JE, Press MF. Pathology and current management of borderline breast epithelial lesions. Am J Hematol Oncol 2017;14:24-31.
14. Degnim AC, Dupont WD, Radisky DC, Vierkant RA, Frank RD, Frost MH, *et al*. Extent of atypical hyperplasia stratifies breast cancer risk in 2 independent cohorts of women. Cancer 2016;122:2971-8.
15. Uwaezuoke SC, Udoye EP. Benign breast lesions in Bayelsa State, Niger Delta Nigeria: A 5 year multicentre histopathological audit. Pan Afr Med J 2014;19:394.
16. Anyikam A, Nzegwu MA, Ozumba BC, Okoye I, Olusina DB. Benign breast lesions in Eastern Nigeria. Saudi Med J 2008;29:241-4.
17. Imam MI, Solomon R, Yusfu I. Benign tumours of the breast in Kano, Northern Nigeria: A 10-year experience and review of literature. Sahel Med J 2016;19:137-41.
18. Ukweh ON, Okeke CM, Ukweh IH, Ekanem IA. Benign breast disease pattern and prevalence in Calabar – A 5 year histopathologic review. Niger J Med 2019;28:320-2.
19. Irabo DO, Okolo CA. An audit of 149 consecutive breast biopsies in Ibadan, Nigeria. Pak J Med Sci 2008;24:257-62.
20. Adesunkanmi AR, Agbakwuru EA. Benign breast disease at Wesley Guild Hospital, Ilesha, Nigeria. West Afr J Med 2001;20:146-51.
21. Kathcy KC, Datubo-Brown DD, Gogo-Abite M, Iweha UU. Benign breast lesions in Nigerian women in Rivers State. East Afr Med J 1990;67:201-4.
22. Adeniji KA, Adelusola KA, Odesanmi WO. Benign disease of the breast in Ile-Ife: A 10 year experience and literature review. Cent Afr J Med 1997;43:140-3.
23. Titiloye NA, Bedu-Addo K, Manu EA, Ameh-Mensah C, Opoku F, Duduyemi BM. Breast lesions and cancer: Histopathology and molecular classification in a referral hospital in Ghana. Alex J Med 2021;57:130-6.
24. Lee M, Soltanian HT. Breast fibroadenomas in adolescents: Current perspectives. Adolesc Health Med Ther 2015;6:159-63.
25. Surati KN, Suthar KD, Parekh B, Shah JK. A study of accuracy of triple assessment as a clinical tool for the diagnosis of a palpable breast lump. Int J Med Sci Public Health 2013;2:733-7.
26. Memon A, Parveen S, Sangrarasi AK, Malik AM, Laghari A, Talpur KA. Changing pattern of benign breast lumps in young females. World J Med Sci 2007;2:21-4.