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HISTOPATHOLOGIC SPECTRUM OF BENIGN BREAST AND ITS DERMATOLOGICAL LESIONS IN A TERTIARY HEALTH INSTITUTION, SOUTHEAST NIGERIA. (A 10-YEAR REVIEW)

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ABSTRACT: **Background:** Spectrum of all benign breast lesions**. Aims and objectives**: To study the histologic patterns of all benign breast lesions as well as benign skin diseases of the breast, with respect to age, and sex. We also aimed at highlighting the premalignant lesions and to showcase the importance of histology in evaluating and preventing misdiagnoses encountered in breast lesions. **Methodology**: Is a 10-year retrospective analysis of all histologically diagnosed benign breast diseases (BBDs). Request forms were reviewed for clinical bio-data, and diagnosis. Hematoxylin and eosin stained-slides of breast biopsies carried out at Histopathology department of Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, were archived and studied. **Results**: A total of 1,568 breast lesions were received, 881 cases (56.2%) were benign lesions, while 687cases (43.8%) were malignant giving a ratio of 1.3:1. Benign breast lesions accounted for 10.9% (881/8090) of all surgical biopsy specimens Eight hundred and fifty-three (n=853; 96.8%) were females and 28 were males (3.2%) giving a female to male ratio of 30:1. The age, ranged, from 1-90 years, with a mean age of 29.7 SD± 12.9 years, and the peak age incidence was 21-30 years constituting 36.3% (320/881) cases of BBDs. The mean age for patients with fibroadenoma was 23.1 SD ± 7.9 years and 35.0 SD ± 11.7 years for fibrocystic change of the breast. Right breast was involved in 409 patients (46.4%), while left involved 363 (41.2%), 89 (10.1%) bilateral and 20 cases (2.3%) were unspecified. The histopathologic analysis showed nine cases (n=9; 1.13%) of benign neoplastic and inflammatory skin diseases of the breast with fibroepithelial polyp being the commonest with 33.3% (n=3/9) followed by psoriasis and epidermal inclusion cyst with 2 cases (22.2%) each. Fibroadenoma was the most common BBDs accounting for 40.7% cases (n=357/881) followed by fibrocystic changes 28.4% (n=249/881) then fibrodenomatous hyperplasia 7.3% (n=64/881) with least representative lesion being developmental breast lesion (Virginal breast hypertrophy) 0.1% (1/881). Only 0.6% cases (n=5/881) of atypical ducal hyperplasia and one case (n=1; 0.1%) of flat epithelial atypia were seen. However, 9 cases of fibroadenoma and 4 cases of fibrocystic changes and one case of gynaecomastia showed usual ductal hyperplasia.

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Conclusion: Fibroadenoma constituted the most common histopathological patterns of BBDs while Fibroepithelial polyp was the commonest dermatologic breast skin lesion in our environment. However, more cases of usual ductal hyperplasia with few cases of atypical ductal hyperplasia were seen.

Key words: Southeast Nigeria, fibroadenoma, fibrocystic changes, fibroepithelial polyp, Atypical ductal hyperplasia, Virginal breast hypertrophy

INTRODUCTION

Breast is one of the most commonly biopsied tissues in histopathology, because of its associated numbers of diseases which ranged from benign to malignant lesions. Benign breast disorders, however make up 90% of all breast lesion worldwide. [1,2] It consists of heterogeneous spectrum of histologic subtypes involving developmental disorders, inflammatory, epithelial, fibro-epithelial, stromal proliferations and benign breast skin lesions. [3] The epithelial breast disorders include non-proliferative diseases and proliferative diseases with atypia or without atypia. [4] Most of these BBDs present with features of palpable masses, nipple discharge, and pains. They are seen in women of reproductive age because of associated hormonal influences. However, studies have reported an increasing incidence in children and adolescents. [4]

Most, benign breast conditions usually appear trivial, but some benign breast lesions especially proliferative disease exposes an individual to an increased risk of developing breast cancer. [5,6,7] The proliferative epithelial breast lesions without atypia include usual duct hyperplasia, sclerosing adenoma, radial scar, papilloma and gyneocomastia. It has small increase risk of malignant transformation. [8] Meanwhile proliferative breast lesions with atypia which include atypical ductal hyperplasia and atypical lobular hyperplasia, has moderate risk of subsequent carcinoma in either breast. [8] Study done by Dupont and colleagues, revealed that atypical lobular hyperplasia increases cancer risk by 3 folds while a 4 to 5-fold increase has been found associated with atypical ductal hyperplasia. [9,10] Although several studies have been done on benign breast lesions in Nigeria, cancer risk estimate of benign breast lesions, and dermatologic breast lesions were not highlighted. Significantly, there is a dearth of information on histologic evalutions of BBDs in Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, Nigeria. This study is thus aimed at determining the frequency and morphological patterns of benign breast and its associated skin diseases in our institution.

Material and methods

Setting

Nnamdi Azikiwe University Teaching Hospital is a federal teaching hospital located in Nnewi town a major economic hub with many manufacturing companies. It is one of the three major cities in Anambra State found in the southern part of the state about 22 kilometers southeast of Onitsha. It is a referral Centre which provides tertiary level health care for patients within and outside Anambra state. Anambra state is one of the 5 Southeastern states of Nigeria, with a population of 4,055,048 and population density of 840/km^2 according to the 2006 census. [11] It is surrounded by Delta state (west), Imo and River states (south), Enugu state (east) and Kogi state (north).

Method

This is a retrospective study which spanned over 10 years-period and involved cases of benign breast diseases diagnosed in Histopathology department of Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi, Nigeria from January 2011–December 2020. Laboratory request forms and duplicate copies of histological reports were retrieved and relevant clinical information and histological type of the lesions were extracted. Only benign breast diseases with adequate records were included, whereas malignant cases and cases that had unrepresentative tissues and inadquate clinical details were excluded. The tissues were initially fixed in 10% formal saline, processed, and embedded in paraffin wax. They were then sectioned and mounted on a glass slide and stained with regular histochemical stain [hematoxylin and eosin (H & E)]. The slides were reviewed by the authors using a multi-headed light microscope (CARL ZEISS®).

Data analysis

Data were analyzed using statistics software Statistical Product and Service Solutions (SPSS) Incorporated,

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version 21 Chicago, Illinois, USA. Quantitative continuous variables like age were summarized using mean, standard deviation while categorical variables like sex were summarized using percentage. Results were presented in table and charts. Pearson's chi-square ($\chi 2$) was used to test the association between two categorical variables and a p-value of < 0.05 was considered statistically significant.

RESULTS

A total of 1,568 breast diseases were received during this 10-year period in the Histopathology department. Of these, 881 cases fulfilled the inclusion criteria as benign lesions (56.2%), while 687cases (43.8%) were malignant breast lesion and were therefore excluded. The total benign breast lesions accounted for 10.9% (881/8090) of all surgical biopsy specimens within the study period. The ratio of benign to malignant breast lesion was 1.3:1. Four hundred and nine (n 409; 46.4%) patients had the lesions on the right breast, 363 (41.2%) were located on the left, 89 (10.1%) were bilateral and 20 cases (2.3%) were unspecified. Of the total BBDs, 853 patients (96.8%) were females and 28 were males (3.2%) giving a female to male ratio of 30:1. The histopathologic analysis showed stromal lesions as the commonest with a frequency of 47.22% (n; 416/881) followed by epithelial lesions 43.81% (n; 386/881) then inflammatory lesions 6.24% (n;55/881). The commonest lesion in female was stromal disorders with majority of cases being fibroadenoma while epithelial lesions were commoner in males with gynecomastia leading the group. The age of BBDs ranged, from 1-90 years, with a peak age incidence at 21-30 years constituting 35.5% (313/881) followed by age group 11-20 cases with 26.6% (234/881) while the least were seen in the age group above 50-years (70 cases; 7.9%). **(Figure 1)**

Figure 1: Age distribution of benign breast lesions

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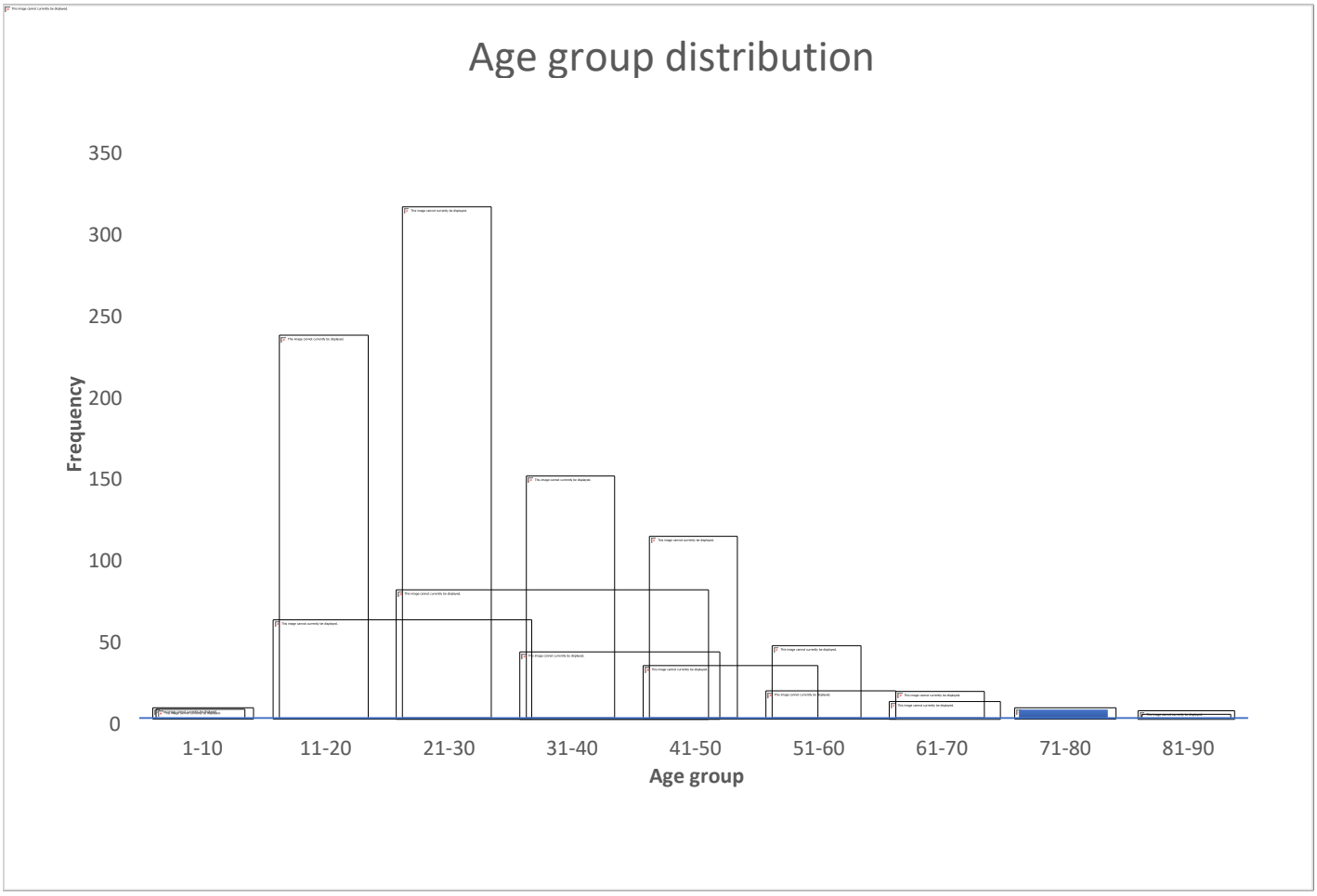

The mean age of fibroadenoma, fibrocystic change and fat necrosis were 23.1 SD ± 7.9, 35.0 SD ± 11.7 and 47.8±13.6 years. Virginal breast hypertrophy and psoriasis were seen in younger patient with mean ages of 14.0 years and 17.0±1.4 years respectively while atrophic breast lesion was seen in older women with a mean age of 73.0, followed by panniculitis 67.0 years and hydatid cyst 66.0 years. All the other lesions were seen within a mean ages between 22.9 to 56.0 years. **(Table 1)**

Table 1: Histopathologic frequencies and Sex distribution of benign breast lesions

Histologic types		**Frequencies (%)**	**Female**	**Male**	**Mean± SD**
Inflammatory	Fat necrosis	21(2.38)	**21**		**47.8±13.6**
	Acute mastitis	11 (1.25)	**11**		**36.2+14.1**
	Chronic granulomatous mastitis	9(1.02)	**7**	**2**	**47.8±14.6**

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	Duct ectasia	7(1.02)	**7**		**45.0±11.6**
	Lymphocytic mastopathy	6 (0.68)	**6**		**41.3±10.0**
	Panniculitis	1(0.11)	**1**		**67.0#DIV/0**
		55 (6.24)			
Epithelial	Fibrocystic change	249 (28.3)	**249**		**35.1±11.7**
	Fibroadenomatoid hyperplasia	64 (7.26)	**62**	**2**	**26.9±9.4**
	Tubular adenoma	20 (2.27)	**20**		**22.2±5.7**
	Gynaecomastia	20 (2.27)		**20**	**42.4±20.7**
	Intraductal papilloma	12 (1.36)	**12**		**44.4±14.9**
	Lactating adenoma	7 (0.79)	**7**		**27.3±6.6**
	Sclerosing adenosis	7 (0.79)	**7**		**33.7±11.6**
	Ductal Adenoma	1 (0.11)	**1**		**56.0#DIV/0**
	Microglandular adenosis	1 (0.11)	**1**		**48.0#DIV/0**
	Atypical ductal hyperplasia	5 (0.57)	**5**		**39.0±18.4**
	Flat epithelial atypia	1 (0.11)	**1**		
		386 (43.81)			
Stromal lesions	Fibroadenoma	357 (40.6)	**357**		**23.0±7.9**
	Benign phylloides tumour	38 (4.31)	**38**		**25.8±9.5**
	Lipoma	11 (1.25)	**10**	**1**	**37.9±16.0**
	Harmatoma	8 (0.91)	7	**1**	**22.9±11.4**
	Desmoid tumour	1 (0.11)	1		**40.0 #DIV/0**
		416 (47.22)			

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Developmental disorder	Virginal breast hypertrophy	**1 (0.11)**	1		**14.0#DIV/0**
Skin	Fibroepithelial polyp	3 (0.34)	**2**	**1**	**25.5±21.9**
	Epidermal inclusion cyst	2 (0.23)	**2**		**42.5±3.5**
	Psoriasis	2 (0.23)	**2**		**17.0±1.4**
	Pilar cyst	1 (0.11)	**1**		**37.0#DIV/0**
	Keloid	1 (0.11)	1		**25.0#DIV/0**
		9 (1.02)			
Lymphoid	Reactive Intramammary lymph node	4 (0.45)	**4**		**31.0±18.0**
	Dermatopathic lymphadenopathy	1 (0.11)	**1**		**41.0#DIV/0**
		5 (0.57)			
Others/Miscellaneous	Adenomyoepithelioma	3 (0.34)	**3**		**48.0±14.7**
	Myoepithelioma	1 (0.11)		**1**	**50.0#DIV/0**
	Atrophic breast	1 (0.11)	**1**		**73.0 #DIV/0**
	Collagenous spherulosis	1 (0.11)	**1**		**30.0 #DIV/0**
	Galactocele	2 (0.23)	**2**		**30.0±8.5**
	Hydatid cyst	1 (0.11)	**1**		**66.0#DIV/0**
		9 (1.02)			
		881 (100.0)	**853 (96.82)**	**28 (3.18)**	**29.7±12.9**

The top ten histologic subtypes of BBDs showed fibroadenoma as the most common accounting for 40.7% (n=358/881) followed by fibrocystic changes 28.4% (n=249/881) then fibrodenomatous hyperplasia 7.3% (n=64/881) with least representative lesions being developmental breast lesion (Virginal breast hypertrophy). (**Figure 2)** Other rare cases of BBDs include adenomyoepithelioma, Myoepithelioma, hydatid cyst, collagenous spherulosis and desmoid tumour of the breast. Only 5 cases (n=5; 0.6%) of atypical ducal hyperplasia and one case (n=1; 0.1%) of flat epithelial atypia were seen. However, 9 cases of fibroadenoma and 4 cases of fibrocystic changes and one case of gynaecomastia showed usual ductal hyperplasia.

Figure 2: shows the top ten commonest benign breast lesions

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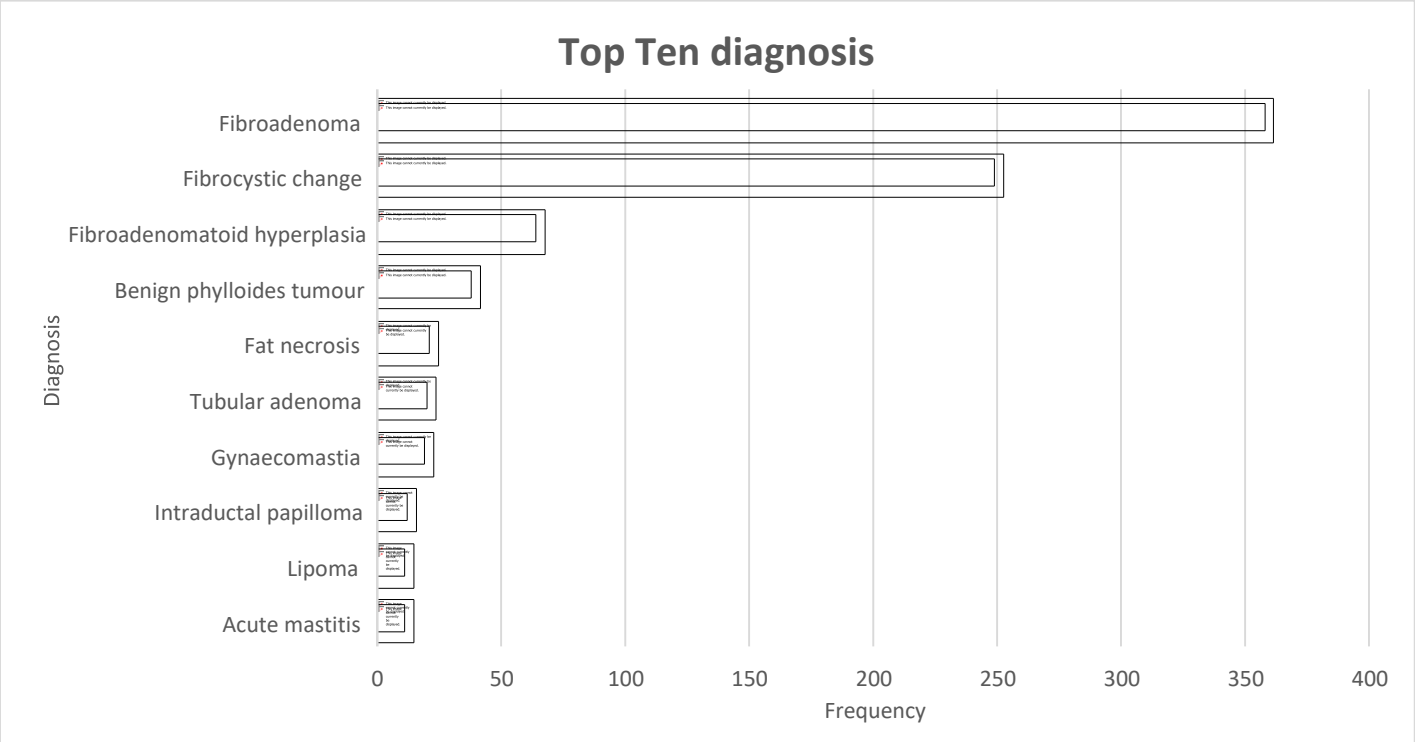

The heterogeneous spectrum of BBDs ranged from stromal, epithelial, inflammatory, developmental etc. Among the stromal lesions, fibroadenoma was the commonest with majority of cases seen at younger age group of 11-30 years (310/358; 86.6%) similarly benign phylloides tumour also occurred more at the same age group of 11-30 years with 27/38; 71.1%.

Inflammatory lesions, showed that fat necrosis was the commonest and occur more at age group 51-60 years with a frequency of 33.3% (7/21) followed by acute mastitis while lymphocytic mastopathy was among the least inflammatory BBDs with majority occurring at 41-50 years of age (3/6; 50.0%).

Among the epithelial lesions, fibrocystic change was the commonest non-proliferative epithelial BBDs with majority of cases seen at 21-50 years (207/249; 83.1%) followed by fibroadenomatous hyperplasia which was commonest at 21-30 years' age group (34/64; 53.1%). Gynaecomastia was more common between age group 21-30 years (9/20; 42.2%) and was seen solely in males. Atypical ductal hyperplasia (ADH) spanned 21-60 years with majority seen at 41-50 years (2/5; 40.0%) similar to microglandular adenosis (1/1; 100.0%) with flat epithelial atypia seen at 31-40 years (1/1; 100.0%).

Developmental disorders and skin breast lesions were seen majority at younger age groups of 11-20 and 1-40 years respectively. The analysis of benign skin diseases showed nine cases (n=9; 1.13%) which include fibroepithelial polyp with 33.3% (n=3/9) followed by psoriasis and epidermal inclusion cyst with 2 cases (22.2%) each. Others include keloid and pilar cyst with one (0.11%) case each seen at 21-30 and 31-40 years respectively **(Table 2)**

Table 2: shows the age groups of different histologic subtypes of benign breast lesions

Count of Histologic diagnosis	**Age group**

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Row Labels	**1-10**	**11-20**	**21-30**	**31-40**	**41-50**	**51-60**	**61-70**	**71-80**	**81-90**	**>90**	**Grand Total**
Inflammatory lesions											
Fat necrosis		1	1	4	4	7	4				21
Acute mastitis		1	4	1	4		1				11
Chronic granulomatous mastitis				4	1	1	3				9
Duct ectasia			1	2	1	3					7
Lymphocytic mastopathy			1	1	3	1					6
Panniculitis							1				1
Total		**2**	**7**	**12**	**13**	**12**	**8**				**55**
Epithelial lesions											
Fibrocystic change	2	20	77	64	66	16	2		1	1	249
Fibroadenomatoid hyperplasia		14	34	9	5	2					64
Tubular adenoma		8	11	1							20
Gynaecomastia		1	9	3		2	1	4			20
Lactating adenoma		1	4	2							7
Intraductal papilloma			1	5	2	3			1		12
Sclerosing adenosis			3	2	1	1					7
Ductal Adenoma						1					1
Microglandular adenosis					1						1
Atypical ductal hyperplasia			1	1	2	1					5
Flat epithelial atypia				1							1
Total	**2**	**44**	**139**	**88**	**77**	**26**	**3**	**4**	**2**	**1**	**386**
Stromal lesions											
Fibroadenoma		166	144	30	12	3	1			1	357
Benign phylloides tumour		14	13	7	4						38
Lipoma	1		1	5	2	1	1				11
Harmatoma	1	2	4	1							8

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Desmoid tumour				1							1
Total	**2**	**182**	**162**	**44**	**18**	**4**	**2**			**2**	**416**
Developmental disorder											
Virginal breast hypertrophy		1									1
Breast skin lesions											
Fibroepithelial polyp	1			1	1						3
Epidermal inclusion cyst				1	1						2
Psoriasis		2									2
Pilar cyst				1							1
Keloid			1								1
Total	**1**	**2**	**1**	**3**	**2**						**9**
Lymphoid lesions											
Reactive Intramammary lymph node		2	1			1					4
Dermatopathic lymphadenopathy					1						1
Total		2	1		1	1					5
Others/Miscellaneous											
Adenomyoepithelioma				1	1		1				3
Hydatid cyst							1				1
Collagenous spherulosis			1								1
Myoepithelioma					1						1
Atrophic breast								1			1
Galactocele			1	1							2
Total			2	2	**2**		**2**	**1**			**9**
Grand Total	**5**	**234**	**313**	**148**	**111**	**44**	**16**	**5**	**2**	**3**	**881**

DISCUSSION

Benign breast disorders (BBDs) are more common than malignant counterparts and yet less attention and importance has been given to them compared to their malignant ones. Recently, non-malignant diseases of the breast and the premalignant breast lesions have shown increase significance because of public awareness. In resource poor setting like Nigeria, early and accurate histologic diagnosis of these lesions especially pre-malignant cases is of great importance to eliminate economic waste associated with management of breast malignancies. This is of great importance because studies had shown that some Benign Breast Conditions has an increased risk for developing a subsequent breast cancer.

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[12] BBDs and their cancer risks have extensively been studied among the Caucasian compared to African populations.

Most studies within and outside Nigeria showed overwhelming number of benign breast lesions than malignant cases. Our index study although showed higher number of BBDs compared to malignant cases, its ratio and frequency is lower than in most studies. BBDs in our study accounted for 56.2% with Benign to Malignant ratio of 1.3: 1. Most studies from Nigeria reported higher frequency than our study, those in southern Nigeria revealed 71.2% (2.5:1) Warri, 68.3% (2.2:1) Bayelsa State, 72.4% (2.6:1) Benin city and 73.4% (2.8:1) Calabar. [13,14,15,16] Others observed similar higher frequencies and ratios with (68.8%; 2.3:1), and (73.0%; 2.6:1) seen in Enugu (eastern Nigeria) and Kano (northern Nigeria) respectively. [17,18] Studies outside Nigeria also recorded high values, rural hospital in India showed 79.0% with a ratio of 4:1, while 25 States and Union territories in urban India revealed 97.3%.[19,20] Nairobi, Kenya reported 72.2% with a ratio of 2.6:1 while Saudi Arabia study showed 85.1%.[21,22] The same preponderance of benign breast lesions, were seen in Europe and America but with some variations.[23,24] The lower ratio of benign to malignant breast lesions observed in our study may be attributed to increased exposure to risk factors for malignant transformation in cancer risk BBDs due to environmental pollutants, chemical emissions from numerous industries in Nnewi.[12] Furthermore, reduction in breast feeding in urbanized women with adoption of westernized life style, increased consumption of chemically formulated alcoholic drinks (palm wine) or other alcoholic unrefined drinks may be a factor. In addition, due to poverty, and wide spread ignorance among the illiterate, some breast biopsies may sometimes be discarded especially when they presumed the lump to be benign.

Our study also revealed a mean age of 29.7 SD± 12.9 years, and the peak age incidence of 21-30 years constituting 36.3% (320/881) of all cases with most of the cases (79.5%; 700/881) occurring below 50 years. The mean age is in tandem with most studies within and outside Nigeria. Korle Bu Ghana reported (26.99 ± 11.03 years), Ilesha Nigeria (28.7 SD+10.6 years), Warri (31.2 ± 8.4 years), Kano (26.0 years), Benin city (27.5 years, SD±11.3) as well as Albasri's study in Saudi Arabia.[13,15,18,22,25,26] Peak age incidence in this study was in third decade and it agreed with most studies in the literature.[13,14,15,19,25]

This study observed that right breast involvement was more with 47.1% followed by the left (41.2%), then bilateral (10.1%). This is similar with research done by Kumar et al in rural India who revealed 47.63% right sided breast involvement while 39.73 % had the lump on the left breast whereas bilateral involvement was seen in 12.63%. [19] Similar reports were also observed from Ilesha and Ghana. [25,26]

Our study also observed marked female to male ratio of 30:1. The marked gender ratio was in agreement with observations from Ilesha (27:1), Bayelsa State (20:1), Warri (638:6) Benin city (28.6:1) Enugu (41:1) and Kano (23:1). [13,14,15,17,18,26] All the male lesions in this study were benign and spanned from gynaecomastia (20/28), to chronic granulomatous mastitis and fibroadenomatous hyperplasia (2/28) each, to fibroepithelial polyp, hamartoma, lipoma and myoepithelioma (1/28) each. Other studies found only gynaecomastia or gynaecomastia and lipoma lesions only. [17,18]

Fibroadenoma was the most common BBDs in this study and accounted for 40.7% (n=357/881) with a mean age of 23.1 SD ± 7.9 indicating its occurrence in the younger age groups. The finding is in concordance with most studies available in the literature except in Kano, northern Nigerian, and Lagos as well as among the Caucasians where fibrocystic change was the commonest finding. [8,18,27] Previous report (1973) from Ibadan (Southwest Nigeria) observed that fibrocystic change was commoner than fibroadenoma but recent research by Irabor et al stated otherwise. [28,29] Moreover, most studies in black populations reported findings similar with our research, Uwaezuoke et al in Bayelsa observed 45.6% cases, Adesunkanmi et al in Ilesha reported 46.2%, Warri 46.9%, Benin city 43.1%, Rivers State 51.0%, and 42.1% seen in rural India. [13,14,15,19,30] However higher incidence was reported in Kenya 71.8%, and Korle-Bu Ghana76%. [21,25] The higher incidences discovered in Kenya and Korle-Bu Ghana may be due to increased sample size of total BBDs in their centres which were 1084 and 2805 cases

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respectively compare to ours of 881 cases. In addition, the health system and altitude of their patients in submitting all samples to histopathology for confirmation of diagnosis may be a factor. High prevalence of fibroadenoma in blacks may also be attributed to increased incidence in underlying genetic changes like heterozygosity (LOH) and microsatellite instability as well as increased expression of BRCA1/2 mutations in blacks which is associated with increased frequency of benign and malignant breast lesions. [31,32]

The second most common BBDs was fibrocystic change accounting for 28.4% of all women presenting with breast masses, occurring mostly in the third, fourth and fifth decades of life with a mean age of 35.1 ±11.7 years. This figure is consistent with findings from studies by Uwaezuoke et al in Bayelsa (23.1%; 31.1 years), Adesunkanmi et al in Ilesha (42.2%; 31.6 years), Gerald et al in Warri (19.6%), Olu-Eddo et al in Benin-city (23.8%; 30.2 years), Kattey et al in River state (27.7%), Anyikam et al in Enugu (22.9%; 34.0±11.2), and Bjerregaad at el in Kenya (23.3%), as well as Kumar et al in rural India (26.5%) and Gyana et al in Ghana (12.4%; 3rd and 4th decade). [13,14,15,17,19,21,25,26,30]

This finding was however, contrary to observations in Kano, and Lagos where, fibrocystic change was the commonest BBDs accounting 34.3%, and 47.9% respectively with a mean age of 33 years. [18,27] Likewise, study in United States also revealed the same with fibrocystic change constitutes 40% of total breast lesions and peaked at or just before menopause in that population. [8]

The next common diagnosis was fibroadenomatous hyperplasia (FAH) constituting 64 (7.3%) lesions and occurring mostly in the third decade of life with mean age of 26.9±9.4 years. This is in tandem with research by Gyana et al in Korle Bu Ghana who reported FAH as the third commonest.[25] Most other studies like Uwaezuoke et al from Bayelsa, Katty et al in River state, Ochicha et al in Kano and Kumar et al rural India, reported inflammatory lesions as the third commonest cases in their research while others reported tubular adenoma as third commonest BBDs. [14,18,19,30] However, inflammatory lesion (fat necrosis) and tubular adenoma were fifth and sixth commonest lesions in our study.

The forth most common BBDs was benign phylloides tumour constituting 38 (4.31%) of all breast masses, and occurred mostly in the second and third decades of life with a mean age of 25.8 ±9.5 years. However, Anyikam et al in Enugu reported phylloides 28 9 (4.0%) as third commonest lesion but with mean age of 24.1±7.4 and occurred mostly in the third decade similar to our findings. [17]

Our study also observed lower prevalence of atypical ductal hyperplasia (ADH) constituting 0.57% (n=5/881) of all BBDs with most cases seen in the 5th decade of life while Anyikam et al and Gyan et al also reported lower prevalence of 1.0% (7) and 0.2% of ADH respectively and both occurred at 5th decades of life. [17,25] However, Olu-Eddo reported slightly higher value of ADH of 3.6% with 2.3% of blunt duct adenosis while Saudi Arabia, and most other studies had no record of ADH.[15,22] The lower prevalence of ADH is likely due to poor mammography screening, impalpable mass presentation of the lesions. Our study also highlighted other proliferative breast disease without atypia with low cancer risk such as sclerosing adenosis (0.79%; 33.7±11.6), intraductal papilloma (1.36%; 42.4 ± 20.7), as well as usual ductal hyperplasia (1.6%) which occurred in combination of fibroadenoma, fibrocystic change and gynaecomastia. Shaaban et al in UK revealed 674 BBDs and reported relative cancer risk (RR) for atypical lobular hyperplasia (ALH) of 4.55%, while ADH RR was 2.03%, blunt duct adenosis RR was 2.08% with RR of 1.53% for usual ductal hyperplasia. [33] However, Study done by Dupont and colleagues, revealed that atypical lobular hyperplasia increases cancer risk by 3 folds while a 4 to 5-fold increase has been found associated with atypical ductal hyperplasia. [9]

Finally, this study also reported benign skin lesions of the breast with Fibroepithelial polyp (3;0.34%) being the commonest followed by epidermal inclusion cyst and psoriasis with (2; 0.23%) each. Both Fibroepithelial polyp and psoriasis were seen in younger age groups (second and third decades respectively) while epidermal inclusion cyst was seen at 5th decade of life (42.5±3.5 years). Most studies had no report on BBDs of the skin except Olu-Eddo et al

in Benin city who reported epidermal inclusion cyst as the commonest benign skin breast lesion which occurred between the ages of 25-70 years with a mean age of 42.7 years similar to our study. [15] This was followed by dermoid cyst and squamous papilloma, no psoriasis or Fibroepithelial polyp were seen. [15]

Conclusion

BBDs constituted 56.2% of breast lumps with fibroadenoma and fibrocystic change being the commonest lesions occurring in the 2nd and 3rd decades of life respectively. Fibroepithelial polyp, epidermal inclusion cyst and psoriasis were common skin BBDs while few premalignant lesions (ADH, UDH, and sclerosis adenosis) were seen. Although, premalignant lesions of atypical hyperplasia were less common, biopsy of all BBDs is essential to exclude these lesions and routine mammographic screening for cancer risk patient should be done to increase their detection.

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Authors' contributions

This is to certify that the authors contributed to the conception, data collection, analysis and intellectual contents of this article.

Data availability

The data used to support the findings of this study are available from Histopathology laboratory records and laboratory request forms, in the department of Histopathology Nnamdi Azikiwe University Teaching Hospital, Nnewi.

Declaration of Conflicting Interests:

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval

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REFERENCES

Santen RJ. Benign breast disease in women. In: De Groot LJ, Beck-Peccoz P, Chrousos G, editors. Endotext. South Dartmouth (MA): MDText.com, Inc.; 2000.

Worsham MJ, Abrams J, Raju U, et al. Breast cancer incidence in a cohort of women with benign breast disease from a multi-ethnic, primary health care population Breast J 2007;13(2):115–21.

H. Nggada, B. Gali, A. Bakari, E. H. Yawe-Terna, M. Tahir, E. Apari, A. Dahiru, K. Yawe. The spectrum of female breast diseases among Nigerian population in Sahel climatic zone. J. Medicine and Med. Sci. 2011; (2): 1157-1161.

Wang J, Costantino JP, Tan-Chiu E, Wickerham DL, Paik S, Wolmark N. Lowercategory benign breast disease and the risk of invasive breast cancer. J Natl Cancer Inst 2004;96(8):616–20.

Okabia MN, Osime UA. A clinicopathological study of benign breast diseases in Benin-city Nigeria. Nigeria J. Surg. 1998: 5; 64-68.

Marshall LM, Hunter DJ, Connolly JL, et al. Risk of breast cancer associated with atypical hyperplasia of lobular and ductal types. Cancer Epidemiol Biomarkers Prev. 1997;6(5):297–301

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(1):78–89

Susan C. Lester. The breast. In Robbins SL and Cotran RS, Kumar V [ed]. Pathologic Basis of Disease. 9th Ed. Philadelphia, WB Saunders. 2014; 1044-1070.

Dupont WD, Page DL. Risk factors for breast cancer in women with proliferative breast disease. N Engl J Med 1985;312(3):146–51.

Hartmann L, Sellers T, Frost M. Benign breast disease and the risk of breast cancer. N Engl J Med 2005;353(3):229–37.

National Population Commission. Report of Nigeria's national population commission on the 2006 census. Popul Dev Rev 2007; 33:206–210.

Wang J, Costantino JP, Tan-Chiu E, Wickerham DL, Paik S, Wolmark N. Lowercategory benign breast disease and the risk of invasive breast cancer. J Natl Cancer Inst 2004;96(8):616–20.

Gerald Forae, Francis Nwachokor, Alex Igbe, Emmanuel Odokuma and Eseroghene Ijomone. Benign breast diseases in Warri Southern Nigeria: A spectrum of histopathological analysis." Annals of Nigerian Medicine, 2014; (8) 1: 28.

Uwaezuoke S. C and Udoye E. P Benign breast lesions in Bayelsa State, Niger Delta Nigeria: a 5 year multicentre histopathological audit. Pan Afr Med J Pan Afr Med J. 2014; 19: 394 doi: 10.11604/pamj.2014.19.394.5717

A. N. Olu-Eddo and Ezekiel Enoghama Ugiagbe. Benign breast lesions in an African population: A 25-year histopathological review of 1864 cases. Niger Med J. 2011 Oct-Dec; 52(4): 211–216 doi: 10.4103/0300-1652.93790

Otu AA. Benign breast disease in an African population. J R Coll Surg Edin. 1990;35(6):375–5.

Anyikam A, Nzegwu MA, Ozumba BC, Okoye I, Olusina DB. Benign breast lesions in Eastern Nigeria. Saudi Med J. 2008; 29:241–4.

Ochicha O, Edino ST, Mohammed AZ, Amin SN. Benign breast lesions in Kano. Nig J Surg Res. 2002; 4:1–5.

M. Kumar, K. Ray, S. Harode, D.D. Wagh. The Pattern of Benign Breast Diseases in Rural Hospital in India. ECAJS. 2010; (15):59-64.

Uma Krishnaswamy. Profile of benign breast diseases in urban India. Indian Journal of Surgery. 2003; (65) 2: 178-181

Bjerregaard B, and Kung'u A. Benign breast lesions in Kenya: a histological study. East African.Med..J. 1992:69(5):231-235.

Amr SS, Sa'di AR, Ilahi F, Sheik SS. The spectrum of breast diseases in Saudi Arab females: A 26-year pathological survey at Dhahran health center. Ann Saudi Med 1995; 15: 125-132.

Cole P, Mark Elwood J, Kaplan SD. Incidence rates and risk factors of benign breast neoplasms. Am J Epidemiol 1978; 108: 112-120.

Hutchinson WB, Thomas DB, Hamlin WB, Roth GJ, Peterson AV, Williams B. Risk of breast cancer in women with benign breast disease. J Natl Cancer Inst 1980; 65: 13-20.

Gyana E, Derkyi-Kwartenga. L, Brownb. A. A, Derkyi-Kwartengc. A, Darkwad A. A, Quaysond S, Akakpo P. K. Benign breast conditions: An eight-year single-centre histopathological review of women presenting with mass lesions at the Korle-Bu Teaching Hospital, Ghana. Annals of Diagnostic Pathology. 2019. (42) 33–38

Adesunkanmi AR, Agbakwuru EA. Benign breast disease at Wesley Guild Hospital, Ilesha, Nigeria. West Afr J Med. 2001;20(2):146–51.

Ajibola Jeje, Bolaji Mofikoya, Oku.Y.E. Pattern of breast masses in Lagos: A private health facility review of 189 consecutive patients. Nigeria Quarterly Journal of Hospital Medicine. 2010:20(1); 38-41.

Ajayi O.O, Adekunle.O. Non-malignant breast masses in an African population. Br.J.Surg.1973; 60: 465-468.

Irabor DO, Okolo CA. An audit of 149 consecutive breast biopsies in Ibadan, Nigeria. Pak J Med Sci. 2008; 24:257–62.

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.

McCulloch RK, Sellner LN, Papadimitrou JM, Turbett GR. The incidence of microsatellite instability and loss of heterozygosity in fibroadenoma of the breast. Breast Cancer Res Treat 1998;49(2):165–9

Cavalli LR, Singh B, Isaacs C, Dickson RB, Haddad BR. Loss of heterozygosity in normal breast epithelial tissue and benign breast lesions in BRCA1/2 carriers with breast cancer. Cancer Genet Cytogenet 2004;149(1):38–43.

Shaaban, A. M, Sloane J. P, West C. R, Moore F. R. Jarvis, C. F.I, Williams, E. M.I, Foster C. S. Histopathologic Types of Benign Breast Lesions and the Risk of Breast Cancer Case–Control Study. The American Journal of Surgical Pathology 26(4):p 421-430, April 2002.