

Benign breast lesions in Eastern Nigeria

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ABSTRACT

الأهداف: لأجل تصنيف أمراض الثدي الحميدة في شرق نيجيريا وتبسيط الضوء على متغيرات العمر على هذه الآفات وبيانات الخط القاعدي.

الطريقة: قام قسم تشريح المرضى بمستشفى نيجيريا الجامعي بفحص فوق ٣٠ مليون أفريقي أسود واستقبل ٢٠٠٠ عينة مرضية جراحية سنوية تم تحليل ٧٢٢ عينة أورام حميدة في الثدي على مدى خمس سنوات. على سبيل المثال من ١ يناير ٢٠٠٠م إلى ٣١ ديسمبر ٢٠٠٤م من بين ١٠٥٠ عينة من الثدي.

النتائج: من بين ١٠٥٠ عينة مستقبلية كان هنالك ٧٢٢ عينة مصابة بورم حميد. كان الورم الغدي اللبني من أكثر الآفات شيوعاً مع ٣١٨ حالة (٤٤٪). ويظهر في متوسط العمر من ١٦-٣٢ عاماً. يليه كان التغير التكيس اللبني مع ١٦٥ حالة (٢٢٫٩٪) عند متوسط العمر من ٢٣-٤٥ عاماً. تم رؤية الثدي العادي في منطقة ذيل الإبط في ٣٢ حالة (٤٫٤٪) وحضرت على أنها لا تعاني من حالة مرضية. مع متوسط العمر من ٢٠-٤٦ عاماً. ورم ورقي الشكل من الدرجة المنخفضة لدى ٢٨ حالة (٣٫٩٪). مع متوسط العمر من ١٧-٣٢ عاماً. ورم اللاكتات (اللبن) في ١٩ حالة (٢٫٦٪). تشكل الآفات الأخرى أقل من ٣٪ لكل منها. تبغ ذروة أورام الثدي الحميدة عند عمر ٢٠-٢٤ وبعد ذلك تبدأ في الانحدار. معظمهم من الإناث.

خاتمة: ظهر آفات الثدي الحميدة بشكل أكثر من الآفات الخبيثة بمعدل ٣:١ وتظهر مبكراً قبل سن العشرين. كانت الأورام اللبينية الأكثر شيوعاً بين الآفات الحميدة يعقبها الأمراض التكيسية اللبينية، في شرق نيجيريا. وفي شمال نيجيريا كانت أمراض الثدي التكيسية اللبينية الأكثر شيوعاً.

Objectives: To characterize benign breast diseases in Eastern Nigeria and to highlight the age variations of these lesions as base line data.

Methods: The Department of Morbid Anatomy, University of Nigeria Teaching Hospital, Enugu caters for over 30 million African blacks and receives 2000 surgical pathology specimens yearly. Seven hundred

and twenty-two benign breast specimens were analyzed over 5 years from 1st January 2000 to 31st December 2004, out of 1050 breast samples received.

Results: Of 1050 breast specimens received, 722 (68.8%) were benign. Fibroadenoma was the most common lesion with 318 cases (44%), occurring at a mean age of 16-32 years. Next was fibrocystic changes with 165 cases (22.9%) at a mean age of 23-45 years. Normal breast in the axillary tail region was seen in 32 cases (4.4%), represented as no pathology, with a mean presentation age of 20-46 years. Low grade Phyllodes tumor had 28 cases (3.9%), presenting at an average mean age of 17-32 years. Lactating adenoma had 19 (2.6%) cases. Other lesions made up less than 3% each. Benign breast lesions peaked at the 20-24 age range and then declined. Most were females.

Conclusion: Benign breast lesions occur more frequently than malignant breast lesions with a ratio of 2.3:1 and were presented 20 years earlier than their malignant counterparts. Fibroadenoma was the most common benign lesion followed by fibrocystic disease, similar to the findings in Western Nigeria. In Northern Nigeria, fibrocystic breast disease was more common.

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Benign breast diseases have been reported to constitute a heterogeneous group of lesions including developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations, and neoplasms.¹ Breast diseases are showing a rising trend worldwide.² Several studies have been carried out to ascertain the magnitude of the problem.³⁻⁵ There is a wide variation in the spectrum of breast diseases.⁶⁻⁸

This is a descriptive retrospective review of benign breast lesions as seen over a 5-year period, and it sets out to establish accurate base line data on benign breast lesions in our environment.

Methods. We conducted this retrospective study between 1st January 2000 to 31st December 2004 at the University of Nigeria Teaching Hospital (UNTH), a referral center covering 6 South Eastern states of Anambra, Imo, Abia, Enugu, Ebonyi, as well as parts of the middle Belt of Benue and Kogi States. The Department of Morbid Anatomy, UNTH caters to over 30 million people, mainly Black Africans of the Ibo ethnic group. The laboratory receives approximately 2000 surgical pathology specimens per year. The breast sample biopsy records evaluated for this study, comprise of referred breast samples making up 60%, while core hospital samples, including admissions constitute 40%. The sources of the breast specimens are from lumpectomies and core needle biopsies. They were received in 10% buffered formalin and processed in auto processors. Primarily paraffin wax processing coupled with hematoxylin eosin staining solely was used to study the slides. Two independent pathologists reviewed these slides using only light microscopy. Exclusion criteria used for this study includes all unresolved and controversial histological specimens at light microscopy, as well as malignant cases. All other cases where mutual agreement was reached were included. Institutional ethical approval was sought and given for this study.

The Statistical Package for Social Sciences was used to calculate the mean and standard deviation. Seven hundred and twenty two benign breast specimens were received and analyzed over the 5-year period.

Results. A total of 1050 breast specimens were received in the Department of Morbid Anatomy at UNTH, with 722 of them as benign specimens representing 68.8% of total breast biopsies (Table 1). These comprise 700 lumpectomy specimens and 22 core biopsy specimens. Males had 17 cases while females were an overwhelming majority at 705 cases. All the male lesions were benign and spread between gynecomastia with a frequency of 10 or 1.4%, and 3 lipoma cases. The distribution of these benign breast lesions by mean age at diagnosis is presented in Table

2. The mean age of benign tumors was between 17-42 years. The 20-24 age group accounted for most of the benign lesions as seen in Table 3.

Discussion. Despite the large service area of the South Eastern Nigerian population of 30 million people covered by UNTH Enugu, the biopsy volume is low at 2000 total specimens per year, mainly due to affordability, presumably because of the low per capita income mainly from youth unemployment, lack of viable health insurance schemes, lack of adequate numbers of health facilities with histopathological services, variably constituting a limitation to this study. In addition, due to poverty, and wide spread ignorance sometimes in the very rural areas, breast biopsies are sometimes discarded

Table 1 - Total number of breast lesions.

Samples	No. of patients (%)	Mean \pm SD
Female	1050 (100.0)	33.9 \pm 13.9
Male	1033 (98.4)	33.7 \pm 13.7
<i>Breast lesion</i>		
Benign	722 (68.8)	29.6 \pm 12.2
Malignant	328 (31.2)	43.6 \pm 12.5

Table 2 - Shows the distribution of the benign breast lesions and the average ages at which they occur.

Benign breast lesions	Frequency (%)	Mean \pm SD
No pathology seen	32 (4.0)	32.8 \pm 13.0
Fibrocystic disease	165 (22.9)	34.0 \pm 11.2
Fibroadenoma	318 (43.3)	23.3 \pm 7.2
Cystosarcoma phyllodes	28 (4.0)	24.1 \pm 7.4
Mammary ductal ectasia	18 (2.5)	39.0 \pm 12.5
Intraductal papilloma	2 (0.3)	33.5 \pm 0.7
Mastitis	20 (3.0)	46.1 \pm 15.5
Granulomatous mastitis	4 (0.6)	38.0 \pm 18.7
Sclerosing adenosis	18 (2.5)	35.2 \pm 11.2
Mammary fibrosis	20 (3.0)	26.3 \pm 6.9
Gynecomastia	10 (1.5)	47.3 \pm 19.2
Neurofibroma	3 (0.4)	40.0 \pm 9.2
Tubular adenoma	11 (1.5)	20.7 \pm 4.2
Lipoma	9 (1.0)	41.0 \pm 16.0
Lactating adenoma	19 (0.03)	32.6 \pm 8.7
Blunt ductal adenoma	1 (0.1)	25.0 \pm 0.00
Abscess	5 (0.7)	50.8 \pm 24.3
Adenosis	7 (1.0)	17.3 \pm 0.36.3
Atypical/lobular hyperplasia	7 (1.0)	35.7 \pm 11.2
Nipple papilloma	5 (0.7)	38.6 \pm 14.9
Oncocere nodule	2 (0.3)	48.5 \pm 0.7
Tuberculosis	1 (0.1)	45.0 \pm 0.00
Fat necrosis	16 (2.2)	39.5 \pm 12.4
Benign hyperplasia with reactive lymph node	1 (0.1)	31.0 \pm 0.00

Table 3 - Comparing the age distribution for both benign and malignant lesions.

Age range (years)	Breast lesions	
	Benign n=722 n (%)	Malignant n=328 n (%)
≤10	23 (3.2)	7 (2.1)
11-14	7 (1.0)	1 (0.3)
15-19	108 (15.0)	2 (0.6)
20-24	220 (30.5)	9 (2.7)
25-29	92 (12.7)	17 (5.2)
30-34	68 (9.4)	50 (15.2)
35-39	65 (9.0)	40 (12.2)
40-44	40 (5.5)	72 (22.0)
45-49	35 (4.8)	29 (8.8)
50-54	30 (4.2)	40 (12.2)
55-59	12 (1.7)	20 (6.1)
60-64	10 (1.4)	23 (7.0)
65-69	7 (1.0)	5 (1.5)
70-74	2 (0.3)	7 (2.1)
≥75	3 (0.4)	6 (1.8)

without any histology carried out on them, constituting not only gross negligence by the surgeon involved, but also a limitation to this study. The relative frequency of 68.8% demonstrated by benign breast lesions in this study was in keeping with reports from other regions of Nigeria. Ochicha et al⁹ reported an incidence of 73% in Kano (Northern Nigeria). A higher figure of 85.1% was also reported from Saudi Arabia.¹⁰ The same preponderance for benign breast lesions with some variation has also been reported in Europe and America.¹¹⁻¹⁶ It was observed that the incidence of benign breast lesions began to rise from 11-14 years, that is around puberty sharply to peak by 20-24 years, and thereafter it declines. In the United States, the incidence of benign breast lesions begins to rise during the second decade of life and peaks in the fourth and fifth decades.¹ Perhaps the environmental and dietary differences may account for this disparity. The observed fact of fibroadenoma being the most common lesion agrees with reports from Ibadan in Western Nigeria, where it was shown to constitute 55.6% of all benign breast lesions.¹⁷ In contrast, Ochicha et al⁹ demonstrated that fibroadenoma was second to fibrocystic change (28.8%) with a mean age of 21 years. Perhaps the regional differences in Nigeria may be related to the fact that in Northern Nigeria, women marry at 13-15 years and therefore, achieve pregnancy with the consequent increased progesterone levels at an earlier age than their southern counterparts who are more educated,

career driven, and marry at an average of 25-30 years. Diet may also play a significant role, as they eat more protein than their southern counterparts. Fibrocystic change was the next most common benign breast lesion (22.9%) of all benign breast lesions, with a mean age of presentation between 23-45 years. Oluwole et al¹⁸ demonstrated an incidence of 48% for fibrocystic change at Ile-Ife in Western Nigeria second to fibroadenoma. Whereas the report in Northern Nigeria by Ochicha et al,⁹ showed fibrocystic change to be more common than fibroadenoma with 34.3%, and a mean age of occurrence at 33 years. In the United States, fibrocystic change constitutes 40% of total breast lesions peaking at or just before menopause in that population.¹⁹ Again, the differences in both Northern and Southern populations may be accounted for by reasons similar to those deduced for fibroadenoma above. Low-grade cystosarcoma Phyllodes tumor with a frequency of 28 cases or 3.9%, had a strikingly lower age of occurrence at a mean presenting age range of between 17-32 years. Epidemiological studies carried out in the United States show that most occur in the sixth decade.²⁰ No pathology was seen in 4% of specimens representing the axillary tail, an area poorly drained by ducts and prone to form lumps. Other breast lesions as seen in the results, together posted a minority, often individually less than 3%. All the male lesions were benign and spread between gynecomastia with a frequency of 10 or 1.4% and 3 lipoma cases.

In conclusion, the frequency of benign breast lesions is more than that for malignant breast lesions with a ratio of 2.3:1. Fibroadenomas were the most common benign lesion, followed by fibrocystic disease, as is the case in Western Nigeria. Figures from Northern Nigeria however, show the reverse where fibrocystic breast disease was more common, in keeping with figures from the United States. Most benign breast lesions peaked around the 20-24-age range and then declined. Most were females.

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