

Incidence of cancer in breast lumps seen in a private rural surgical practice in South Eastern Nigeria .

Umunna, James Ibeto (FRCS, FWACS, FICS)

Jasman Hospital Ltd Udo-Ezinihitte, Mbaise, Imo State , Nigeria P.O.Box 579, Owerri, Imo State, Nigeria.

Abstract:

Background: There is increasing awareness and anxiety about breast cancer amongst rural women who present at our practice located in an area of limited resources.

Aims: To determine the incidence of breast cancer in patients presenting in our service with breast lumps .

Patients and methods: This is a retrospective work, reviewing the pathology reports of breast biopsy specimens taken at Jasman Hospital, Udo, between 2001 and 2012. Patients whose pathology reports were unavailable were excluded. Information gathered from the patient's records and analysed included age, sex, how lump was discovered, duration of symptoms, associated symptoms.

Results: Three hundred and seventy patients underwent breast biopsy Two(0.5%) were male and 368(99.45%) female, a ratio of 1:184. Patient's ages ranged from 11 years to 80 years with a mean of 28.27 years (SD14.71). Histopathological reports were available in 348(94.1%). Cancer was present in 58 (16.75%) specimens and 312 (89.7%) were benign, a ratio of 1:5 . Most biopsy specimens,227(61.4%),came from patients under 30 years of age .The 31 to 50 age bracket had most, 38(65.5%) cases of cancer. All lumps were discovered by patients themselves. Most (53.4%) cancers were of the infiltrating ductal type, constituting 38 out of 58 cancers .

Conclusion:

The number of patients presenting with breast lumps is low, judging by the number of years, but this represents the reality on ground. The incidence of cancer in these lumps is also low. Cancer was found at a much younger age group than commonly reported in western countries. A lump in the elderly is more likely to be cancerous than in the younger person. Infiltrating ductal carcinoma was the commonest histological type. Most biopsy specimens were benign, being five times the cancerous ones.

Key words: breast, biopsy, benign, cancer, rural, South East Nigeria

Introduction:

Breast cancer is the commonest type of cancer in females all over the world and the commonest cause of death in them.¹ The diagnosis of breast cancer is of serious concern to women, more so in rural communities where women have limited information about the disease.² The poor information and knowledge are complicated in rural communities by daunting cultural and religious beliefs³ .

There is a rising global incidence of breast cancer and the rate of this increase is faster in the developing world who had previously had a lower rate than the western world.⁴

Breast cancer has not been extensively studied in rural South Eastern Nigeria.⁵ . Most of the work done has been in urban areas^{5, 6, 7} . Report by Anyanwu is about work carried out in urban environments.⁵

The presence of a lump or other swelling in the breast, change in solidity, skin change or nipple discharge, may be the presenting features but there may be no pain and this may add to the causes of late presentation!.Ninety nine percent of breast cancers occur in females but men also do get breast

cancer.⁸ In the United States of America, in 2005, male breast cancer accounted for less than 1% of all breast cancers and caused 0.1% of cancer mortality in males; however, its incidence is increasing.^{8,9} It was found to constitute 3.7% of all cancers seen at the University of Maidugiri Teaching Hospital⁸

Most breast lumps in this rural community are discovered by the women themselves accidentally while having a bath or on self manual examination which they have started to imbibe. Rarely is the doctor the first to discover the lump.¹⁰ There is no routine screening programme in existence for them in South East Nigeria.

Benign lesions far outnumber cancerous ones¹¹. This underlines the need to assess what percentage of breast lumps could turn out to be cancers in the rural community. This will give the women a source of assurance, and this justifies breast biopsy and histological examination. All biopsy specimens should be subjected to histopathological examination, even when they seem benign because cancer in the breast has been known to co-exist with a benign lesion.¹²

In evaluating a breast lump, it is necessary to remember that women's breasts undergo several normal developmental changes, which are hormone driven, throughout their menstrual life. These changes may result in lumps or areas of increased nodularity¹³ which cause women and young girls anxiety and fear of cancer. Such changes are benign and should not ordinarily require biopsy, except when in doubt which can be diagnostic and curative at the same time.¹⁴

Breast lump evaluation starts with the manual self-examination by which the patient discovers the lump. The doctor, then, by physical examination defines and confirms the lesion, stages it as well as examines the other breast. Ideally he orders imaging procedures to further clarify the lesion in order to reach a diagnosis. Such procedures include mammography, ultrasonography, and sometimes magnetic resonance imaging. Magnetic resonance Imaging has a high sensitivity of detecting impalpable breast cancers even though this result may not be achieved in all cases.¹⁵ However, the ultimate investigation is tissue biopsy which is accurate for diagnosis.¹⁶ Tissue biopsy can be achieved in different ways. These include Fine needle aspiration (FNA),¹⁷ core-needle biopsy, or open biopsy. Some people prefer core needle biopsy to fine needle aspiration biopsy because it obtains more tissue for diagnosis and better characterisation of the tumour.¹⁸ Adjunctive techniques for biopsy include stereotactic biopsy,¹⁹ vacuum-assisted biopsy,²⁰ and ductal lavage which is under investigation.²¹ In all this, the procedure most likely available in a rural surgical practice is open biopsy, which though should be discouraged because it does not allow the patient to have neo-adjuvant therapy when needed, however provides the most reliable diagnosis.

Patients and Methods:

This was a retrospective study carried out in a rural private surgical outfit, Jasman Hospital, Udo-Ezinihitte, Mbaise in Imo State Nigeria. The case files of all patients who had undergone breast biopsy between 2001 and 2012 were retrieved. Information gathered from the records include the presence of a lump or lumps, the age and sex of the patient, interval between discovery of lump by patient and presentation in hospital, condition of the opposite breast, associated features. Local anaesthesia was used in nearly most cases, but general anaesthesia with ketamine and diazepam sometimes. All specimens were sent for histopathological examination. Patients whose pathology results were not available were excluded from analysis. All patients who presented with clinically obvious cancer were excluded. The patients in this study came from nine local government areas in the South East of Nigeria

Results:

Three hundred and seventy patients were found to have had breast lump biopsy within the period under consideration. Two (0.5%) were male and 368(99.5%) female. One (0.3%) had incisional biopsy while 369 (99.7%) had excisional biopsy The time interval between discovering the lump and presentation ranged from one day to five years. The ages of the patients ranged from 11 years to 75 years , with a mean of 28.27 years (standard deviation (14.71)

Under 20	103
21-30	124
31-40	68
41-50	50
51-50	13
51-60	10
61-70	2
Most patients with breast lumps were young.	

Table 1 Distribution of breast lumps by age

Pathology report on the specimens was available in 348 (94.1%) patients . The pathology report showed that 58 (16.7%) were cancerous (ratio of 1;6) , while 290 (83.3%) were benign, a ratio of 1: 5. The distribution, by age ,of patients who had biopsy is shown in Table 1, which shows that most patients 227/370, were under thirty years of age, constituting 1.4% . Table 2 shows the distribution, by age, of patients with cancer, which shows that patients in the 31 to 50 age bracket had the preponderance of cancer 38/58 (65.5%).

Under 20	Zero
21-30	6
31-40	18
41-50	20
51-50	8
51-60	5
61-70	1
Decreasing incidence with advancing age.	

Table 2. Incidence of cancer by age

Fifty cancers were characterized. Infiltrating ductile carcinoma was the most common. The various types of cancer reported and their frequencies are depicted in table 3.

Infiltrating ductal carcinoma	31
Cancer(not specified)	16
Papillary carcinoma	2
Mucinous carcinoma	2
Colloid carcinoma	1
Metastatic carcinoma	1
Arcinoma in situ	4
Non – Hodgkins lymphoma	1
Total	58
Infiltrating ductal carcinoma is the most common.	

Table 3: Different histological types of cancer

Discussion:

Breast cancer is the commonest cancer in women worldwide ,an estimate of 1.4 million cases having been reported in 2008.²² . It is also the most common cause of cancer deaths in women. Its incidence is increasing and it is estimated that it accounts for one-tenth of all newly diagnosed cancers annually globally.²³ In his study of cancer in south eastern Nigeria Anyanwu stated that patients with breast cancer constituted 30% of all patients with breast disease.⁵ In our series this was 16.7 % . Most of the work done in Nigeria has been in urban areas ,tertiary and allied institutions, but not much has been published about the rural population which forms the majority of the people. Accurate assessment of the incidence of breast cancer in our environment is difficult because of the challenges associated with surgical practice in rural areas²⁴ such as poverty, ignorance and poor education, inadequate availability of knowledgeable manpower, poor access to oncology services . This is corroborated by Bjerregaard et al..²⁵ However, rural women in south eastern Nigeria are increasingly becoming aware of the seriousness of breast cancer because of better education. As a result we now see in our centre less of the neglected, fungating, ulcerating, breasts with multiple fixed axillary lymph glands that were a common feature in our practice in the 1970’s. In order to prevent breast cancers reaching this stage and to assuage fears, it is justifiable to find out the likelihood of finding cancer in breast lumps in this rural community and use it as a basis for counsell Self examination has been recommended as a way to detect lumps and present early in order to reduce morbidity and mortality.^{26,27} Ideally ,the investigative options for the doctor include physical examination, and imaging procedures and tissue diagnosis. Mammography,²⁸ ultrasonography,²⁹ and sometimes magnetic resonance imaging (MRI) are tools for investigation, but in our rural practice these facilities are not generally available, and the only option is to obtain tissue diagnosis. Tissue diagnosis is the most accurate diagnostic tool.¹⁶

Tissue diagnosis may be achieved by Fine needle aspiration biopsy (FNAB)³⁰ , Core needle biopsy ³¹ and Open biopsy^{16,32} . FNAB is an office procedure which is diagnostic for cysts and may be curative. It needs an experienced cytologist for interpretation. False positive and false negative results may be obtained Core-needle biopsy obtains more solid tissue suitable for histological examination. Open biopsy ,as the name implies entails surgery. This may be excisional or incisional. Local anaesthesia was used most of the time but ketamine and diazepam were used together for general anaesthesia, when indicated . The ketamine and diazepam combination regimen was effective for general anaesthesia in an environment where the services of an anaesthesiologist are mostly unavailable. The specimens were

sent to for histopathological examination. Many patients could not bear the extra cost of this test and this explains why the histopathological reports on some specimens were unavailable.

Sometimes special techniques such as mammography-guided wire location of mass³³, stereotactic guide¹⁹, vacuum-assisted biopsy²⁰ are used to locate impalpable masses for biopsy. Such techniques are not available in our environment.

A serious limitation of this study is the non-availability of some pathological reports on specimens and this limits the applicability of the results to the generality of the rural population in our area of study. In spite of this limitation, important facts emerge from the study. As stated in the literature, not all lumps are cancerous as many women thought.⁴ This is collaborated in our work where 83% of 348 specimens showed benign lesions and only 58(16.%) were cancerous. It has been stated generally that the incidence of cancer of the breast increases with advancing age.³⁵ This is not borne out in our work where the incidence decreased after the age of 50 years and the greatest concentration was in the 31 to 50 years age bracket. Breast cancer is usually diagnosed in younger women in Sub-Saharan Africa than in developed countries³⁶. This is more in keeping with the work of some others in Nigeria and neighbouring countries.^{5,16} Bjerregaard²⁵ et al working in Kenya found that the age-specific-incidence rate decreased with menopause,²⁵ unlike in North America where the incidence increases with advancing age. Our youngest patient was 23 years old and the oldest 75 years. However, the older patients, in the 51 to 80 age category, were less likely to present with breast lumps in this study, but when they did, more than one half (56%) were cancerous (14 out of 25). This means that a breast lump in the elderly has a high likelihood of being malignant.

The most common type of cancer in this study was infiltrating ductal carcinoma, accounting for (62%) of 50 reported cancer types. This is also in keeping with the findings of other workers.^{5,16,25} Other cell types reported were papillary, mucinous, colloid, ductal carcinoma in situ.

Conclusion:

There is very little information on the incidence of breast cancer in the rural population in Nigeria, including particularly south eastern Nigeria. Studies done have been predominantly in tertiary institutions outside rural areas. Rural women have become aware of the seriousness of breast cancer and are eager to know whether the lumps they have are cancerous or not. There has to be a basis for answering this question for people who do not have convenient access to far away tertiary hospitals and who are in need of medical attention. The basis lies in breast biopsy and an appraisal of the pathological reports. Our work here has shown that most of their lumps are benign, and that the ratio of cancer to benign lesions is 1 to 5. The number of male breast cancers in this study is small, compared with that in females. It has also shown that the most vulnerable age group is the 31 to 50 year group, meaning that the incidence of cancer amongst them decreased after the age of fifty years, contrary to the usual understanding in the western world. However a lump is more likely to be cancerous the older the patient is. Investigative tools in rural practice do not go beyond physical examination and, perhaps, ultrasonography, but tissue biopsy, which is the 'gold standard' in deciding between benign and malignant lesions, is available.

Most of the cancers are of the infiltrating ductal type. There were also cases of carcinoma in situ.

Acknowledgements:

I hereby appreciate Mrs Akubueze Nwugo, the records officer at Jasman Hospital, Udo, for retrieving the charts of the patients.

I also appreciate Professor S.O.Nwosu for the histopathological examination of the biopsy specimens.

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