

# Clinicopathological Study of Carcinoma of the Breast in Benin City

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## ABSTRACT

Morbidity and mortality from breast cancer have continued to be a source of concern to surgeons in many countries. Over a period of 10 years – January 1987 to December 1996 – 117 patients presented with carcinoma of the breast at the University of Benin Teaching Hospital in Benin City, Nigeria. The case files of 77 patients were available and were analysed retrospectively. There were 75 females and 2 males. Sixty seven per cent of the female patients had large and grossly advanced lesions. Most of them were multiparous and they practiced prolonged breastfeeding. Seventy eight per cent of the patients delayed for over 3 months before presenting to the hospital. The five-year survival was 8.7%. We conclude that carcinoma of the breast is common in this community and that most of the patients present late to the hospital. (*Afr J Reprod Health* 2001; 5[2]:56-62)

## RÉSUMÉ

**Etude anatomoclinique du cancer du sein à Benin City.** La morbidité et la mortalité occasionnées par le cancer du sein demeure toujours une source de souci pour les chirurgiens dans plusieurs pays. Depuis 10 ans, janvier 1987 jusqu'à décembre 1996, 117 malades ont présente le cancer du sein au Centre Hospitalier Universitaire à Benin City au Nigéria. Les dossiers de 77 malades étaient disponibles et ils ont été analysés retrospectivement. Il y avait 75 femmes et 2 hommes. 67% des malades avaient de grandes lésions bien avancées. La plupart étaient multipares et elles ont tardé de plus de 3 mois avant de se présenter à l'hôpital. La survie jusqu'à cinq ans était de 8,7%. Pour conclure, nous affirmons que le cancer du sein est commun dans cette communauté et que la plupart des malades se présentent tard à l'hôpital. (*Rev Afr Santé Reprod* 2001; 5[2]:56-62)

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KEY WORDS: *Carcinoma, breast, retrospective review, Benin City*

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## **Introduction**

Cancer of the breast is one of the most common malignancies affecting women in many parts of the world. Globally, it accounts for 25% of female cancers and 18% of deaths from cancer in women.<sup>1</sup> There is considerable variation in the geographical, racial and ethnic distribution of cancer of the breast.<sup>2</sup> This is primarily due to environmental rather than genetic factors.<sup>3</sup> It is more common in North America and Western European countries, where it is estimated that one in eight Caucasian women in the United States and one in twelve in Britain will develop cancer of the breast in their lifetime. It is less common in Far Eastern countries such as Japan. Early workers in Africa<sup>4,5</sup> have found that incidence rates in African countries are much lower than in the western communities. In sub-Saharan Africa the true incidence of the disease remains unknown. This is due to a lack of statistics in most hospitals and health agencies and the failure of some patients to seek orthodox medical care. However, recent observations from various hospitals in the tropics indicate that the disease is seen more often than before.

A retrospective study of breast cancer at the University of Benin Teaching Hospital over a ten-year period was undertaken to evaluate the clinicopathological features associated with the disease in Nigeria. We hope this will form the basis for a proposed prospective study of breast cancer within the region of study.

## **Patients and Methods**

Files of the medical records library and pathology department were examined for patients with a diagnosis of breast cancer between January 1987 and December 1996. Particular note was made of the age and sex of the patients, duration of symptoms and clinical stage at presentation, parity, and breastfeeding practices. The histological report, treatment and follow-up of the patients were also noted. Only 77 patients, whose case files were available, were included in the study. Cases were excluded if diagnosis was not confirmed histologically or if the file lacked sufficient information.

## **Results**

A total of 117 patients presented with carcinoma of the breast within the period of the study. This

gives an average of 12 new cases per year. The case files of 77 of these patients were available for analysis.

### *Age and Sex Distribution*

This is shown in Table 1. The ages of the patients ranged from 24 to 73 years, with a mean age of 38 years. Peak incidence was in the age range 41–50 years, closely followed by 31–40 years age range. Ten patients were younger than 30 years while 8 were aged 60 years and above. Of the 77 patients, 75 were females and 2 were males. This clearly shows that breast cancer is predominantly a female disease. The 2 male patients were aged 50 and 73 years respectively.

### *Clinical Features*

The clinical features in the patients are outlined in Table 2. Painless breast mass was the predominant symptom in 49 patients. Breast mass was painful in 25 patients; most of these patients had advanced breast cancer with ulceration and infiltration of surrounding structures. Three patients had Payer's disease of the nipple with ulceration and destruction of the nipple and areola. No masses were palpable in these three patients. Ulceration of the mass was present in 16 patients at the time of presentation. In some of these patients, the ulceration was precipitated by incision and scarification marks made by traditional healers and quacks. There were nine patients with nipple discharge; the discharge consisted of blood in seven patients and serous fluid in two patients. Weight loss was present in 25 patients.

### *Clinical Signs*

Ipsilateral axillary lymph nodes were palpably enlarged in 75 patients; in 29.9% of the patients the lymph nodes were discrete and mobile. These were matted together in 26.0% and fixed to the axillary vessels and tissues in 41.6% of the patients. In 8 patients the ipsilateral supraclavicular lymph nodes were palpably enlarged while there were palpable lymph nodes in the contra lateral axilla in 2 patients. Nipple retraction was present in 15 patients, there was peau d' orange in 32.5% of the patients and one patient had satellite nodules on the chest wall.

**Table 1** Age and Sex Distribution of Patients with Carcinoma of the Breast

Age range	Males	Females	Total	Percentage
21-30	0	10	10	13.0
31-40	0	22	22	28.6
41-50	1	25	26	33.8
51-60	0	11	11	14.3
61-70	0	6	6	7.8
71-80	1	1	2	2.6
Total	2	75	77	100.0

**Table 2** Clinical Features

Symptoms	Number	Percentage	Signs	Number	Percentage
Breast lump	74	96.1	Breast mass	74	92.2
Pain in same breast	25	32.5	Palpable axillary lymph nodes	75	97.4
Ulceration of breast mass	16	20.8	Peau d'orange	25	32.5
Nipple discharge	9	11.7	Nipple retraction	15	10.5
Ulceration and destruction of nipple and areola	3	3.9	Palpable supra clavicular lymph node	8	10.4
Weight loss	25	32.5	Nipple deviation	5	6.5
			Ulceration and destruction of nipple and areola	3	3.9
			Satellite nodule on chest wall	1	1.3
			Hepatomegaly	4	5.2

Five patients had hepatomegaly as a result of distant metastases of the tumour. One patient with Paget's disease had a pathological fracture of the right humerus that was splinted bamboo stick by traditional bonesetters. She also had one hard nodule on the frontal bone. Tumour metastases in the pelvic bones were demonstrated in two patients. In one patient there were metastatic deposits in the ribs and lungs.

#### *Stages of Disease*

Clinical staging of the extent of disease was done using the Manchester classification. Most of the patients presented late to hospital with advanced disease. Twenty patients (26.0%) and 32 patients (41.6%) presented with stages 3 and 4 respectively. Two patients presented with stage 1 disease while 23 patients had stage 2 disease.

### *Distribution of Tumours between the two Breasts*

In 25 patients, the tumour was in the right breast, while 30 patients had the tumour in their left breast. The upper outer quadrant was more commonly involved although 60% of the tumours involved more than one quadrant. In 12 patients, the tumour affected the whole breast.

### *Parity*

Most of the patients were multiparous; 28 female patients (44.4%) had one to four children while 20 patients (31.7%) had more than 6 children. There was only one nulliparous patient. All the patients had breastfed their babies for prolonged periods, with the majority breastfeeding for over one year. Only one patient had breast cancer during pregnancy; although she delivered the baby at 36 weeks the tumour showed an aggressive course thereafter and the patient succumbed to the illness after few months.

### *Duration of Symptoms before Presentation*

Only 7 patients presented to hospital within one month of discovering the breast mass. Twenty seven (37.7%) patients presented within 1–6 months and 23 (33.8%) within 6–12 months. Nine patients delayed for over 18 months before presenting to the hospital. Most of the patients who presented late had received treatment from traditional healers and quacks. They however presented to the hospital when there was no improvement in their conditions. In some patients, the mass was erroneously incised in the belief that it was due to abscess. There was delay between the date of first presentation to hospital and the time of definite surgery. This was due to delays in patients' decision to accept mastectomy. Four patients defaulted for over 12 months; they refused mastectomy initially and represented to hospital when the tumour had reached advanced stages with fungation and distant metastases. Two patients refused mastectomy and never returned back to hospital for treatment.

### *Treatment*

The main modalities of treatment in these patients were surgery and chemotherapy. Seventy three patients had mastectomy while two patients refused mastectomy. One patient died before she could

have surgery and one patient had an inoperable tumour because it was hard and fixed to the chest wall. Few patients had radiotherapy and hormonal therapy.

**Table 3 Clinical Stage of Breast Cancer**

Stage	Number of patients	Percentage
1	2	2.6
2	23	29.9
3	20	28.9
4	32	41.6
Total	77	100.0

**Table 4 Histological Types of Breast Cancer**

Hystological classification	Number of patientst	Percentage
Intraductal carcinoma	2	2.6
Invasive ductal carcinoma	53	66.8
Invasive lobular carcinoma	3	3.9
Anaplastic (undifferentiated) carcinoma	9	11.7
Paget's disease of the nipple	3	3.9
Malignant cystosarcoma phylloides	2	2.6
Inflammatory carcinoma	1	1.3
Papillary carcinoma	1	1.3
Mucoid carcinoma	1	1.3
Total	77	100.0

Modified radical mastectomy was the favoured procedure. This was carried out in 25 patients. These patients had stages 1 and 2 tumours and stage 3 disease in which the lymph nodes were not fixed to the axillary blood vessels. Mastectomy and ipsilateral axillary lymph node dissection were carried out in these patients.

Twenty nine patients had simple mastectomy without axillary lymph node dissection. They had

palliative mastectomy to remove the advanced and fungating tumours. The axillary lymph nodes were matted together and fixed. Three patients had simple mastectomy and axillary lymph node sampling.

The use of chemotherapy was documented in 55 patients. The patients had combination chemotherapy using cyclophosphamide, 5-fluorouracil, methotrexate and vincristine. The drugs were usually given parenterally at intervals of 28 days between courses. Only 11 patients completed the 6 courses of chemotherapy. Nine patients had only one course, while 16 had 2 courses. Nineteen patients had between 3 and 5 courses of chemotherapy. The use of radiotherapy was noted in 26 patients. Some patients also had hormonal therapy while 4 patients had bilateral oophorectomy, and the use of tamoxifen was documented in 18 patients.

#### *Post-Operative Complications*

The post-operative complications include seroma formation in six patients and wound infection in four patients.

#### *Post-Operative Follow-up and Mortality*

Twenty three patients were followed up until death. Of these, 16 died within one year after mastectomy while 4 lived for one to two years. One patient each died after 2–3 and 3–4 years respectively. Two patients lived for over 5 years after mastectomy, giving a 5-year survival of 8.7%.

Eight patients were alive and were still being followed up in the outpatient clinic at the time of this study. They were well when last seen in the clinic. The remaining patients were followed up for varying periods of time in the outpatient clinic before they defaulted.

### **Discussion**

Malignant diseases of the breast are a major cause of morbidity and mortality all over the world. Reports from the United States indicate that about 175,000 new cases are diagnosed annually and about 45,000 die from it every year.<sup>1</sup> In Britain, the corresponding figures are 25,000 and 16,000. In Nigeria, as in most other developing countries, the true incidence of the disease is unknown as a result of a lack of vital statistics. However, recent reports from various African countries suggested that the disease is seen more often now than be-

fore. Lawani, Ngu and Osunkoya<sup>6</sup> reported 42 cases per annum at the University College Hospital, Ibadan, between 1961 and 1968. About a decade later, Abisoye<sup>7</sup> reported an annual hospital incidence of 51 cases per year in the same institution, while Amaku<sup>8</sup> reported 40 cases in Lagos University Teaching Hospital in 1968. About two decades ago, at the University of Benin Teaching Hospital, Chiedozie and Guirguis<sup>9</sup> reported a hospital incidence of 24 cases per year. From Ahmadu Bello University Teaching Hospital, Zaria, Khwaja, Nirodi and Lawrie<sup>10</sup> reported an annual hospital incidence of 16 cases. More recent reports indicate that the incidence in Nigeria is about 33.6 per 100,000.<sup>11</sup>

A total of 117 patients presented with breast cancer during the study period, giving an annual hospital incidence of 12 cases. This figure is much less than what has been reported from this institution about two decades ago; patients with malignant breast disease were treated free of charge in the hospital and this encouraged them to come to hospital. With the worsening economic depression of the past two decades, the cost of hospital care of breast cancer patients has increased. Most patients tend to resort to cheaper treatment in traditional healing homes, patent medicine stores and spiritual homes. Some of these patients die and are never included in hospital records.

The likelihood of developing breast cancer is highly dependent on age and the interval over which an individual is at risk.<sup>12,13</sup> The peak incidence of 41–50 years in this study agrees with most reports from sub-Saharan Africa<sup>1,5–11</sup> but lower than that reported from Western European countries and North America, where more than half of the patients with breast cancer are older than 65 years.<sup>14</sup> The life expectancy in most African countries is low, compared with Caucasian women who have a higher risk of developing breast cancer in their lifetime.

Most of the patients in this study (67.6%) presented with advanced disease (stages 3 and 4 by Manchester Classification). This was as a result of the long delay before presenting to hospital. Most of the tumours were initially painless and patients were likely to disregard these lesions as a result of ignorance. In addition, most patients were likely to seek treatment from traditional healers, patent medicine stores and spiritual homes and only pre-

sented to hospital when treatment in these centres had failed. Reports from our hospital suggest that poverty and ignorance are the major factors responsible for this. We noted an increased incidence of annual hospital reporting of breast cancer in this institution two decades ago. This was thought to be due to breast cancer awareness campaigns in the mass media organised by the Nigerian Cancer Society in the 1980s.

In recent years, there has been massive exodus of older clinicians from Africa to the Middle East and European countries as a result of worsening economic conditions. There is a need for practicing clinicians and government and non-governmental agencies to combine resources and increase public awareness campaigns on the dangers of breast cancer and the need and benefits of breast self-examination for early detection and treatment of breast cancer. Reports from most centres in Europe and North America have confirmed the beneficial role of early detection of breast cancer in reducing morbidity and mortality from the disease.<sup>15,16</sup>

The principal modalities of treatment for breast cancer include surgery, radiotherapy, chemotherapy and hormone manipulation. Immunotherapy is also being experimented. All the available modalities of treatment were offered to our patients, but the constraints posed by poverty and ignorance adversely affected the utilisation of these treatment modalities. Surgery remains the main modality of treatment in our patients. The modified radical mastectomy developed by Patey<sup>14</sup> at the Middlesex Hospital in London is the favoured procedure. This operative procedure preserves the pectoralis major muscle and sacrifices the pectoralis minor muscle in order to remove levels I, II and III axillary lymph nodes.<sup>17</sup> It combines total mastectomy with removal of axillary lymph nodes in continuity with the mastectomy specimen. It is the most widely used procedure to treat operable breast cancer.<sup>17,18</sup> Halsted's radical mastectomy is not commonly practiced in this hospital, as results<sup>19,20</sup> have shown no advantage over Patey's modified radical mastectomy. Wide local excision is also not a favoured procedure in the hospital, as most of the patients present late with advanced disease. In addition, radiotherapy though available at another hospital (University College Hospital, Ibadan), is often associated with prolonged delay before radiation treatment is offered.

The other modalities of treatment used in this study population include chemotherapy, radiotherapy and hormonal therapy. Most of the patients had few courses of chemotherapy as a result of financial constraints and ignorance. Some of the patients did not have radiotherapy for the same reasons. Hormonal manipulation was also very useful. Premenopausal patients were offered bilateral oophorectomy, but some of them were reluctant to accept it for cultural reasons. Tamoxifen was also found to be useful as a form of hormonal therapy.

The five-year survival of 8.7% in our study is in keeping with the high mortality rate of breast cancer in developing countries where most of the patients present late to the hospital. Most of the patients were lost to follow-up, and we suspect that many of them died of the disease. A major limitation to breast cancer management in many developing countries is a lack of ancillary facilities such as radiotherapy and laboratories to determine oestrogen and progesterone receptors. Further, chemotherapeutic agents are most often not available, or where available are very expensive. We agree with Attah<sup>21</sup> that clinicians in developing countries should rely more on surgical procedures as the main modality of treatment while augmenting it with adjuvant chemotherapy and radiotherapy.

This study has shown that breast cancer is a major cause of morbidity and mortality in this environment. With worldwide increase in incidence of the disease as a result of the changing population profile particularly in the developing countries, breast cancer is likely to be a major public health problem in Nigeria in this millennium. We recommend collective effort in the management of breast cancer. Most importantly, clinicians should mount aggressive public awareness campaigns on breast cancer screening in collaboration with government and non-government agencies. The need for routine breast self examination and early reporting to hospital in patients with breast disease should be particularly emphasised.

Mammography has been credited with reducing the rate of mortality from breast cancer by up to 30%. Recent studies suggest that mortality from breast cancer could be reduced by 40–50% if all women aged 40 years and above were screened annually.<sup>22</sup> We suggest that government and non-governmental agencies take up the challenge of establishing

regional breast cancer screening programs in Nigeria. We also feel that treatment for cancer in our hospitals should be subsidised by government to enable patients to benefit from the available treatment procedures. More radiotherapy centres should be established and equipped with modern equipment to enhance optimal treatment of breast cancer patients.

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