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Research Article

Malignant Epithelial Tumour of the Uterine Cervix Seen in Lagos: Preliminary Observations

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ABSTRACT

Background: Cervical cancer is a leading cause of morbidity and mortality amongst women worldwide with more than half a million cases diagnosed yearly. In Nigeria as well as in most developing countries, the burden of cervical cancer is quite high, as it ranks the second most frequent cancer among women. This study is a 10-year review intended to document and evaluate the pattern of a malignant epithelial tumour of the uterine cervix in LASUTH, Lagos, Nigeria.

Materials and method: This is a 10-year hospital-based retrospective study in the Histopathology Laboratory of Lagos State University Teaching Hospital between 1st January 2009 to 31st December 2018. The age and other relevant information were obtained from the surgical register of the Department. Archival Haematoxylin and Eosin slides were retrieved.

Result: A total of two hundred and four (204) cases were diagnosed during the 10 years. The ages of patients ranged from 24 years to 86 years, and the mean age at diagnosis was 56 ± 12.9 years. Carcinoma of the cervix was most common in the 6th decade (27.5%), closely followed by the 7th decade (24.95%), while it is rarely seen before the 3rd decade. Large cell keratinizing type was the most common (56.9%).

Conclusion: The study highlights the fact that cervical carcinomas are still a burden in our setting as they represent 3.3% of the total cancer load, with squamous cell carcinoma predominating. It seems to occur in women in the 6th decade with no particular pattern in the histologic type.

INTRODUCTION

Cervical cancer, a potentially preventable disease is still the leading cancer in women in developing countries, with more than 85% of the global burden occurring in these developing countries where it accounts for 13% of all female cancers.[1] It ranks as the fourth most common cancer in women, ranking after breast cancer, colorectal cancer, and lung cancer.[2] Cervical cancer is a leading cause of morbidity and mortality amongst women worldwide with more than half a million cases diagnosed yearly.[3]

The highest incidence rates are observed in sub-Saharan Africa, Melanesia, Latin America and the Caribbean, South-Central Asia, and South East Asia, while the lowest rates are found in Europe (except some Eastern European countries), North America and Japan.[4,5] The incidence in industrialised countries has decreased by approximately 60% during the past decades, as a result of screening programmes with early detection and treatment of precursor lesions unlike developing countries with poor social-economic factors. Compared to many other cancer types, cervical cancer affects many women at a relatively early age.[6]

Human papilloma virus which is considered sexually transmitted has been associated with more than 90% of cases of cervical carcinoma.[4] Several risk factors proposed for cervical carcinoma, include early age at first sexual intercourse, number of sexual partners, tobacco smoking, low socio-economic status of women, poor hygiene practices, and HIV positive, or harbouring other immunocompromised status.[4,5]

Squamous cell carcinoma, the predominant histological type of cervical carcinoma accounts for three-fourths of all the different types, followed by Adenocarcinoma and Adenosquamous carcinoma which represent 10-15%, while the remaining types which include adenoid cystic carcinoma, adenoid basal carcinoma, neuroendocrine and undifferentiated carcinoma represent 10-15%.[7] Although squamous cell carcinoma remains overwhelmingly preponderant in the developing world, its frequency has slightly decreased in the developed world, with a relatively increased prevalence of adenocarcinoma.[8]

Although several studies have been done on this subject in Nigeria, the aim of this work is to find out the spectrum of this malignancy in our centre and compare it with findings in other centres in Nigeria and Africa at large.

MATERIALS AND METHOD

This is a 10-year hospital-based retrospective review of all histologically diagnosed cases of cervical carcinomas in the Histopathology laboratory of Lagos State University Teaching Hospital between 1st January 2009 and 31st December 2018. The age, clinical and histopathological information relating to these tumours were obtained from the requisition form, and records of the histopathology department. Histology slides on all cases were retrieved and sections were cut from archival paraffin blocks when the slides could not be found or when the quality of the stains is sub-optimal.

All specimens had been fixed in 10% formal saline then routinely processed for paraffin embedding. Microtome sections were cut at 4µ and stained with hematoxylin and eosin. All the slides were reviewed by two independent pathologists and all the cases were confirmed to be carcinomas. Collated results were in the form of tables and photomicrographs.

Inclusion criteria:

Cervical biopsy and hysterectomy performed for various carcinomas of the cervix submitted to the Department irrespective of the age between January 2009 and December 2018 with traceable archival H&E slides or tissue blocks as well were included in the study.

Exclusion criteria:

Metastatic tumours and malignant mesenchymal tumour tissue blocks found were excluded from the study.

Statistical Analysis

The data extracted from the histopathology records were entered into SPSS version 21 software for analysis. The age was grouped into 10-year bands and frequency tables and charts were generated to show proportions. Of uterine carcinoma cases and their histological types and sub-types by age group. A Chi-square test was used to test for associations between age and uterine carcinoma type. The level of significance was set at $p<0.05$.

ETHICAL CLEARANCE

This has been obtained in written form from the Lagos State University Teaching Hospital Health Research and Ethical Committee.

RESULTS

There was a total of 24,879 surgical samples received within the study period of which 6,214 cases were malignancy. There were 204 cases of cervical carcinomas over the review period, constituting 0.8% and 3.3% of the total surgical samples and total cancer load respectively. The ages of patients ranged from 24 years to 86 years, and the mean age at diagnosis was 56 ± 12.9 year (Table 1). The majority of patients were within the 41-70 age group, with a peak in the 6th decade, while rarely was it seen before the 3rd decade (Figure 1). Squamous cell carcinoma and cervical adenocarcinoma where the only two variants seen during the period under review. Squamous cell carcinoma was the most common cervical cancer with 91.2%, followed by cervical adenocarcinoma which was only 8.8% of the cases (Figure 2). Squamous cell carcinoma mostly occurred in a slightly older age group from 5th to 7th decades, while adenocarcinoma occurred more in the 4th to 6th decades, although these differences were not statistically significant (p=0.53) (Table 2).

In this study, within the squamous cell types, large cell keratinizing type was the most common 56.9%, and the least common was carcinoma-in-situ 1.5%, while the Non-keratinizing and small cell type were 20.6% and 12.7% respectively (Table 3). The large cell keratinizing squamous cell carcinoma was also found to increase in age from 43.3% for those in the 4th decade to 73.2% amongst those in the 5th decade (Table 2).

Table 1: The distribution of uterine cervical carcinomas according to age groups

Age category	Frequency	Percentage (%)
21 – 30	1	0.5
31 – 40	30	14.7
41 – 50	41	20.1
51 – 60	56	27.5
61 – 70	50	24.5
Above 70	26	12.7
Total	204	100

Mean: 56.0 ± 12.9 years

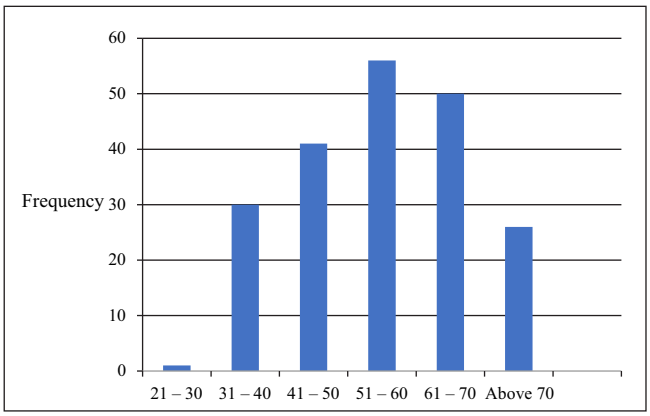

Figure 1: The distribution of cervical carcinomas according to Age Group

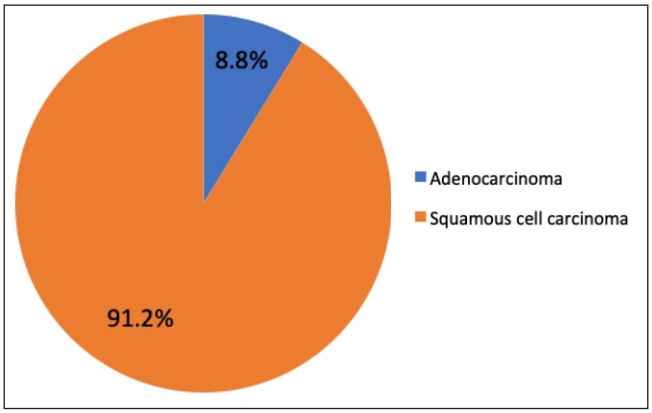

Figure 2: Histological classification of uterine cervical carcinomas

Table 2: Distribution of histological types of uterine carcinoma by age

Age (years)	Histological type of uterine carcinoma					
	Adenocarcinoma	Squamous cell carcinoma	Large cell keratinizing	Large cell non-keratinizing	Small cell carcinoma	Carcinoma-in-situ
21-30	0 (0)	1 (100.0)	1(100.0)	0(0)	0(0)	0(0)
31-40	4 (13.3)	26 (86.7)	13(43.3)	7(23.3)	6(20.0)	0(0)
41-50	2 (4.9)	39 (95.1)	30(73.2)	5(12.2)	2 (4.9)	2(4.9)
51-60	8(14.3)	48 (85.7)	33(58.9)	10(17.9)	4 (7.1)	1(1.8)
61-70	2(4.0)	48 (96.0)	24 (48.0)	15(30.0)	9 (18.0)	0(0)
Above 70	2 (7.7)	24 (92.3)	14(53.8)	5(19.2)	5(19.2)	0(0)

p= 0.39

Table 3: The distribution of uterine cervical carcinomas according to histological types (WHO histological classification of epithelial tumours of uterine cervix)

Histological type	Frequency	Percentage (%)
Adenocarcinoma	18	8.8
Squamous cell carcinoma	186	91.2
Large cell keratinizing	116	56.9
Large cell non-keratinizing	42	20.6
Small cell type	26	12.7
Carcinoma-in-situ	3	1.5
Total	204	100.0

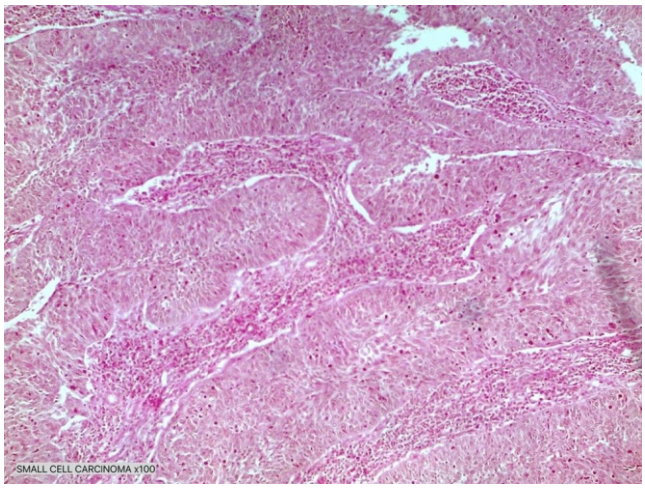

Figure 3: Histologic sections show sheets, islands and trabeculae of small neoplastic squamous epithelial cells

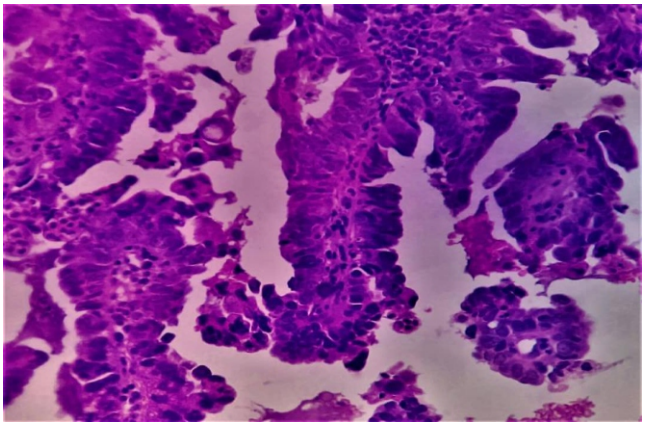

Figure 4: Adenocarcinoma (H&E x400)
Histologic sections show sheets and nests of malignant epithelial cell with glandular formation

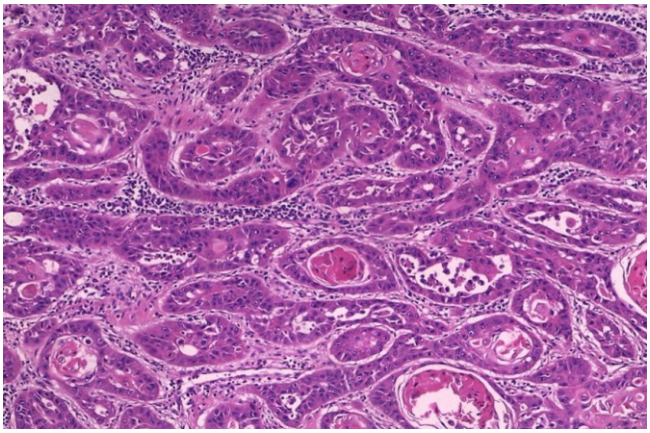

Figure 5: Large cell keratinizing squamous cell carcinoma (H&E x100)
Histologic sections show nests, sheets and cords of malignant squamous epithelia cells invading the stroma. There are keratin perls and individual cell keratinization.

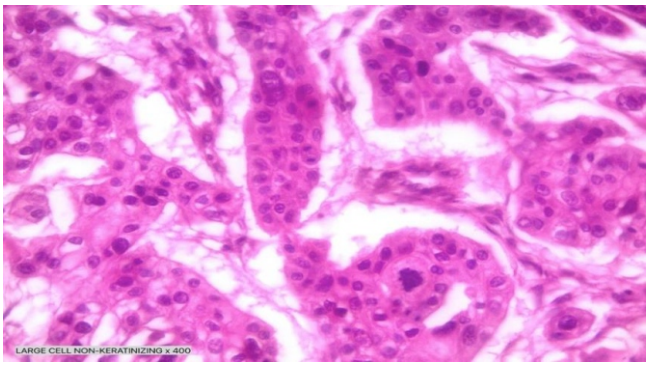

Figure 6: Large cell non keratinizing squamous cell carcinoma (H&E x100)
Histologic sections show nests, sheets and cords of malignant squamous epithelia cells invading the stroma with no keratin perls or individual cell keratinization.

DISCUSSION

A total of 204 cases of cervical carcinoma were histologically diagnosed at the Department of Pathology and Forensic Medicine of the Lagos State University Teaching Hospital within the 10-year study period, which accounted for approximately 0.8% of surgical pathology samples processed at the laboratory during the same period. It is at variance with a study in Port Harcourt by Uzoigwe et al,[9] in which cervical carcinoma accounted for approximately 8.4% of all surgical pathology samples seen within 13 years. The longer duration

of the study and the fact that the institution is much older than our centre may account for the higher percentage in the centre. Again, Lagos as a lot of private centre for surgical sample processing and our centre is one of the three tertiary institutions in Lagos. This may also account for the lower percentage as compared to the Port Harcourt study.

The overall age range of patients with invasive cervical carcinoma in this study was 24 to 86, peaking in the 6th decade (27.5%) which was followed closely by the 7th decade 24.5%. Some studies in other parts of the countries reveal similar findings. [10,11]

The mean age at diagnosis was 56±12 years. This is in agreement with other studies in Lagos, and Ilorin, [12,13] but slightly at variance with other studies in Kano, Zaria, Ibadan and Sokoto.[14-17] We observed that in recent studies, the peak of incidence was in the older age groups in contrast to previous works which peaked at childbearing and premenopausal age. This may be due to increased awareness and screening.

Squamous cell carcinoma (SSC) was the most common (91.2%) histologic pattern. This is consistent with most other studies observed elsewhere in Nigeria. [10,14] However, this is at variance with studies in the USA, which shows a decreasing trend in the incidence of squamous cell carcinoma when compared with adenocarcinoma; this is as a result of the effectiveness of cervical screening programs consisting of mainly Papanicolaou smear examination which has better sensitivity and specificity for squamous lesions in contrast to adenocarcinoma.[18]

The majority of SSC occurred within the 6th to 7th decade, which appears consistent with findings in other parts of the country where most patients fell within the 40-69 years age group.[15,17]

The most common histological variant of cervical carcinoma observed in the study is the large cell-keratinizing variant, which accounted for 56.9% of all the cervical carcinomas studied. The least seen was carcinoma-in-situ (1.5%), followed by adenocarcinoma (8.8%). The large cell non-keratinizing and small cell type both have percentages of 20.6% and 12.7% respectively. This is similar to findings in Ilorin and Gombe,[19,20] but at variance with studies in Kano, Ile-Ife. Where large cell non-keratinizing type is the major histological variant.[14,21] It thus appears that there is no consistent pattern within the country.

A few limitations were observed in this study. Since it was a hospital-based study, it might not reflect the exact distribution for the entire community because not all cases in the community will have their specimens sent to our histopathology department. Secondly, few of the biodata and clinical details were not available and retrieval of such details was not possible, being a retrospective study. Furthermore, a few of the archival slides and blocks were missing and could not be made available for re-examination. The combination of all these factors resulted in a reduced total number of cases.

CONCLUSION

This study highlights the fact that cervical carcinomas are common and still a burden in our setting. Therefore, data on improved policy on health education and awareness, the need for screening, vaccination, and improved cancer treatment facilities, are recommended, in the hope to reduce the burden of cervical cancer.

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CONFLICT OF INTEREST

The authors declare no competing interest

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