

Histological Pattern of Cervical Malignancies in South-South Nigeria

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Abstract: Background: Cervical malignancies are common among women in the developing countries of the world. They are thought to be sexually transmitted and they contribute significantly to reproductive ill-health and mortality among women. Their histological patterns however vary with differences in their clinical characteristics and prognosis.

Objective: This was to determine the histological pattern of cervical cancers as they presented at the University of Port Harcourt Teaching Hospital (UPTH), Alakahia between 2005 and 2010.

Materials and Methods: The data was collected retrospectively from the surgical day book and the original request forms of the Anatomical Pathology Department of UPTH. All cervical biopsies and hysterectomy specimens (from which a diagnosis of malignant tumour of the cervix was made) were assessed.

Results: This showed that out of the 227 cervical biopsies and hysterectomy specimens taken over the period of study, 60 (26.43%) were malignant. The age range of the patients was 10 to 89 years with a single patient who had cervical cancer at 18 years of age. The peak age incidence was 50-59 years. Squamous cell carcinoma was the most common histological pattern, constituting 81.67% with a preponderance of large cell keratinizing squamous cell carcinoma in 43.33% of cases, large cell non-keratinizing squamous cell carcinoma in 20% and small cell non-keratinizing type in 8.33% of cases. 10% of the squamous cell carcinomas were not further classified. Adenocarcinoma and adenosquamous carcinoma were seen in 8.33% and 3.33% respectively while the rare neuroendocrine carcinoma was seen in 1.67% of cases.

Conclusion: Squamous cell carcinoma was the predominant histological type with preponderance of the large cell keratinizing variety, and the peak age incidence from this study is 50-59 years.

Key Words: Histological, pattern, cervical, malignancies, south-south, Nigeria.

I. INTRODUCTION

The cervix occupies the lowermost portion of the uterus and it serves as the entrance to the uterus, occupying a strategic position in sexual and reproductive functions. It is therefore prone to insults which may eventually lead to malignant changes.

Cancer of the cervix is the commonest form of female genital cancer in the developing countries.¹ Worldwide, about 500,000 women acquire the disease annually and 75% of

these are from the developing countries. About 300,000 of the women die annually and it therefore constitutes a threat to reproductive health and general wellbeing.¹ It is thought to be a sexually transmitted disease caused by oncogenic stains of human papilloma virus notably types 16 and 18.² About 99.7% of cases of cervical cancer and severe CIN 11 and 111 are associated with previous oncogenic human papilloma virus infection.³

The risk factors associated with the condition include high risk behaviours such as multiple sexual partners, high parity and early coitarche. The others include familial predisposition, cigarette smoking, immunosuppression, oral contraceptive pills, age, race and socio-economic status.¹

Patients with cancer of the cervix may be without symptoms and in such cases it is usually detected on routine screening with the Papanicolaou smear developed by George Papanicolaou in 1943.¹ When symptomatic, they may present with offensive vaginal discharge with or without bleeding. In advanced cases, there may be urinary symptoms, cachexia, rectal symptoms, pelvic pain, low backache and pedal oedema. An ulcerative or a fungating mass may be seen on vaginal examination.

The final diagnosis depends on cervical biopsy. Histological examination of the biopsy specimen reveals the cell types of the malignancy.¹

The various histological types include carcinomas, sarcomas and secondary tumours. The carcinomas which are predominant can further be differentiated into squamous cell carcinoma (85-90%), adenocarcinoma (10-15%) and the mixed variety. The squamous cell carcinoma can be large cell keratinizing/non-keratinizing, small cell or verrucous. The adenocarcinoma can be typical endocervical, endometrioid, clear cell or adenoid cystic while the mixed type may be of adenosquamous or glassy cell types. The well differentiated squamous cell type are associated with better 5-year survival rates and low incidence of regional node involvement while the small cell type is associated with poor prognosis.^{4,5}

A study done at Ile-Ife Southwestern Nigeria, in 2004 supported the fact that carcinomas are the commonest with the squamous cell type being the most predominant.⁶ There is

however paucity of information on the pathological identity in the south-south sub-region thus necessitating this study.

II. STUDY DESIGN/ METHODOLOGY

The study was carried out with data obtained from the surgical day books of the Department of Anatomical Pathology of the University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt from the period of January 2005 to December 2010 (6 years). The original request forms were retrieved and vital statistical data such as age, relevant clinical information and histological diagnosis were noted. The data retrieved included all cervical biopsy and hysterectomy specimens collected within the 6-year period.

The malignant tumours were classified into carcinoma, sarcoma and secondary tumours. The carcinomas were classified according to the modified WHO histological classification of epithelial tumours.⁷ Squamous cell carcinoma of the cervix was classified based on the degree of differentiation of the tumour cells into keratinizing (well differentiated), large cell non-keratinizing (moderately differentiated) and small cell non-keratinizing (poorly differentiated) variants.

III. RESULTS

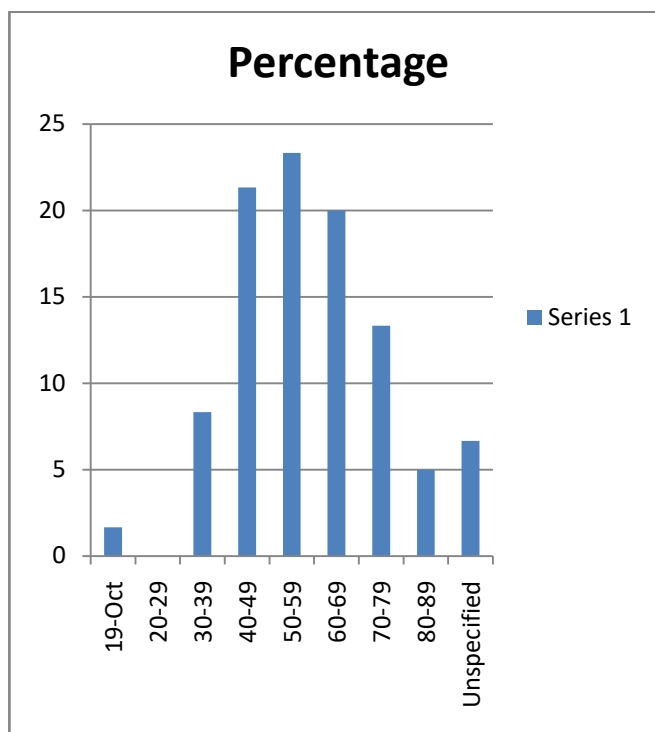
Two hundred and twenty-seven (227) cervical biopsy and hysterectomy specimens were received in the department of Anatomical Pathology of UPTH between the period of January 2005 and December 2010. Of these, 60 (26.43%) of the cervical lesions were malignant with 57 (95%) being carcinomas and 3 (5%) being sarcomas.

Table 1 shows the age distribution of patients with malignant tumours of the cervix with an age range of 10 to 89 years.

Table 1: Age Distribution of Patients with Malignant Tumours of the Cervix.

Age group	Number of cases	Percentage (%)
10-19	1	1.67
20-29	0	0.00
30-39	5	8.33
40-49	13	21.67
50-59	14	23.33
60-69	12	20.00
70-79	8	13.33
80-89	3	5.00
Unspecified	4	6.67
Total	60	100.00

Figure 1: Bar chart showing the age distribution of patients with malignant tumor of the cervix



In this study, cervical cancer was found to be highest in the age group 50-59 with 14 patients (23.33%). This was closely followed by the age group 40-49 accounting for 13 (21.67%) and 12 (20%) for age group 60-69. There were 8 patients (13.33%) in the age group 70-79 and 3 patients (5.00%) in the age group 80-89. The ages of four (4) patients below the age of 30 years were not recorded. Only one patient below the age of 30 years had cervical cancer and the occurrence also decreased markedly after 60-69 years. The peak age incidence is thus 50-59 years as shown in Figure 1.

Forty nine (49), that is 81.67% of the carcinomas were squamous cell carcinoma (SCC) while 5 (8.33%) were adenocarcinomas. Adenosquamous carcinoma accounted for 2 cases (3.33%) while the rare neuroendocrine carcinoma accounted for 1 case (1.67%).

Of the squamous cell carcinomas, 6 (10%) were not further classified into the various sub-types. However 26 (43.33%) were keratinizing SCC. Large cell non-keratinizing type constituted 12 cases (20%) while small cell non-keratinizing SCC accounted for 5 cases (8.33%).

There were 2 cases (3.33%) of rhabdomyosarcoma and one case (1.67%) of adenocarcinoma making up the three cases of sarcoma that were seen.

Table 2 shows the histological types of malignant tumours of the cervix while Table 3 shows the percentage comparison of the histological types of invasive cancer of the cervix from different studies.

Table 2: Showing the Histological types of malignant tumours of the cervix.

S/N	Tumour types	Number of cases	Percentage of Total (%)
1.	Carcinoma	57	95.00
a.	Squamous cell carcinoma (SCC)	49	81.67
i.	Keratinizing SCC	26	43.33
ii.	Large cell non-keratinizing	12	20.00
iii.	Small cell non-keratinizing	5	8.33
iv.	Unclassified SCC	6	10.00
b.	Adenocarcinoma	5	8.33
c.	Adenosquamous carcinoma	2	3.33
d.	Neuroendocrine carcinoma	1	1.67
2.	Sarcoma	3	5.00
a.	Adenosarcoma	1	1.67
b.	Rhabdomyosarcoma	2	3.33

IV. DISCUSSION

Cancer of the uterine cervix is the most common genital tract malignancy especially among modern day African women. They cause a high rate of morbidity and mortality. These tumours occur as carcinomas, sarcomas and metastatic tumours and variation in the distribution of the histological types exists geographically and biologically accounting for the different incidences, age distribution and cell types.⁶

In this study, the malignant lesions of the cervix accounted for 26.43% of the cervical lesions examined over a 6-year period. Of these, 95% were carcinomas while 5% were sarcomas. This was in line with previous studies done at Ilorin and Ife.⁷ The sarcomas noted in this study were a case of adenosarcoma and two cases of rhabdomyosarcoma constituting 1.67% and 3.33% of the cervical malignancies respectively. This further confirms the rarity of sarcoma of the cervix.

The carcinomas have also been classified into various subtypes with squamous cell carcinoma accounting for 81.67%. This is in support of the fact noted worldwide, that squamous cell carcinoma (SCC) is the commonest histological type just as the previous studies done in Nigeria.^{6,7} In Ife it accounted for 85.4%, Sule AA et al reported 82.2% in Kano⁸ while 92.8% and 81.3% were reported in Ilorin and among black Americans respectively.

Generally, large cell non-keratinizing SCC has been known to be the most predominant histological cell type of SCC⁹ and this was supported by the study done at Ife where it constituted 41.1% being the most predominant histological type. However, in this study, large cell keratinizing SCC was the most predominant histological type accounting for 43.33% of the squamous cell carcinomas. This agrees with the study done at Ilorin and Ibadan where it accounted for 60.1% and 63.2% respectively. In this study, large cell and small cell

non-keratinizing types accounted 20.00% and 8.33% respectively.

The proportion of adenocarcinoma was 8.33% while that of adenosquamous was 3.33%. This is similar to the proportion obtained at Ife.⁶ These varieties are uncommon. Neuroendocrine carcinoma accounted 1.67% of the malignant lesions in this study but this was not found in other centres. It is a very rare variety of carcinoma of the cervix and is associated with very poor survival rate.¹⁰ its natural history differs from the more commonly seen squamous cell carcinoma or adenocarcinoma of the cervix.¹¹

The biologic behavior of the different histological types of SCC are similar, however, large cell non keratinizing SCC appears to progress slowly with better 5-year survival when compared to the other histological types.¹² Adenocarcinoma has worse prognosis and survival than the squamous variety^{13,14} and the rate of distant metastasis is also higher with this variety.¹⁵ Adenosquamous carcinoma tend to be worse than adenocarcinoma.^{16,17}

From this study, cancer of the cervix occurred typically between ages 30 to 79 years with a modal peak of 50-59 years. This was closely followed by 40-49 and then 60-69 years almost forming a plateau. The peak age varies from centre to centre and from one geographical area to another. All the cases seen were invasive carcinoma of the cervix and this reflects the poor utilization of screening services for early detection of the disease. Since the pre-invasive lesion of cancer of the cervix is thought to occur at least ten years before the development of the frank invasive lesion, it is necessary to recommend screening for cervical cancer in this environment from 20 years of age or less for those with early coitarche. This will aid detection at the pre-invasive or microinvasive level and thus enhance cure.

Squamous cell carcinoma is the predominant histological type in this centre, with preponderance of the large cell keratinizing variety, therefore early detection will improve the survival rate. Also policies that will improve health education and prevention of the disease should be implemented in order to reduce its incidence.

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