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ORIGINAL ARTICLE

Histopathological Features of Cervical Cancer in a Tertiary Hospital in Kumasi Ghana: A 9 Year Retrospective Study

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Cervical cancer remains one of the commonest gynaecological cancers among women in developing countries. Knowing the general profile of the disease from institution-based studies would be important in reflecting the actual national prevalence. This was a retrospective study to determine the histopathological characteristics of specimen of the uteri cervix diagnosed in our center over a 9-year period. A total of 1,094 cervical histological findings were reviewed. Of these, 1087 (99.4%) were cervical carcinomas, 3 (0.3%) normal and 4 (0.4%) inflammatory. Mean age of patients was 58.9±15.9 years with 29% of the patients with cervical cancer being below 50 years while 71% were 50 years and older. Squamous cell carcinoma was the commonest histological sub-type with 51.7% being moderately differentiated. Clinical presentation included, cervical polyps, post-coital bleeding, fungating mass, bleeding per vagina, recurrent cervical cancer and metastatic cervical cancer. In conclusion, the findings suggest that cervical carcinoma is still common among women visiting our hospital to seek medical attention for various conditions of the uterine cervix with squamous cell carcinoma being the most prevalent histological type. Policies that promote the implementation, monitoring and evaluation, screening and vaccination have to be considered to reduce the burden of cervical cancer in our environment.
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Keywords: Cervical cancer, gynaecological, histopathology, developing countries.

INTRODUCTION

Cervical cancer is an important health problem among women worldwide. It is the fourth most common cancer in women globally claiming more than 250,000 deaths annually with 85% of these deaths occurring in low- and middle-income countries (International Agency for Research on Cancer, 2017). In the United States majority of the cases are seen women of low socioeconomic caliber and members of ethnic minorities who are medically underserved (Smith *et al.,* 2000). A 2012 report by Kesic *et al.* (2012) put the overall incidence rate of cervical cancer in Europe at 10.6 per 100,000. The incidence and mortality rates of cancer of the cervix uteri are high in Africa and some parts of Asia, and are low in Australasia and West Asia (Ferlay *et al.,* 2015).

In sub-Saharan Africa, it stands as the most common cancer in women, and trails behind only breast cancer in frequency for northern Africa (Jemal *et al.,* 2010), with about 34.8 new cases diagnosed per 100,000 women yearly and some 22.5 per 100,000 women dying from the disease (Ferlay *et al.,* 2015). The incidence and prevalence of the disease is higher in developing countries than developed countries (Jemal *et al.,* 2010) generally due to the fact that screening program to detect and treat precancerous cervical lesions as well as human papillomavirus (HPV) vaccination programme implementation faces many challenges in developing countries. In some parts of West Africa like Nigeria, cancer of the cervix accounted for 65.7% of gynecological cancers in Zaria (Oguntayo *et al.,* 2011) and 63.1% of gynecological cancers in

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Ilorin (Ijaiya *et al.,* 2004) and 58.5% in Kano (Gaya *et al.,* 2012). In Ghana, cervical cancer is the most frequent cancer among women with an estimated 3,052 new cases and 1,556 deaths according to a 2012 report (Ferlay *et al.,* 2015).

The cure or control of cases of cervical cancer is still challenging in sub-Saharan Africa because most cervical cancer patients, whether rural or urban dwellers, typically seek medical assistance at the time when their condition is far advanced (Walker *et al.,* 2002). However, risk factors for African patients and those of white patients are not substantially different. They include early age at first intercourse, numerous sexual partners, high parity, and low educational status (Walker *et al.,* 2002).

Knowing the incidence and mortality rates of cervical cancer is important for the formulation of policy and implementation of control measures (Nartey *et al.,* 2017). However, in Ghana, actual incidence and mortality rates for the general population are unknown due to an absence of a national-based population cancer registry (Nartey, 2017). Also, only few institution-based published reports on clinic-pathological characteristics are available. A recent work by Der et al (Der *et al.,* 2014) reported 70.8% cases of cervical cancer in a review of female genital malignancies in Korle Bu Teaching Hospital, Accra Ghana. This study from our center which covers approximately 50% of the population aims to review the histopathological pattern of cervical cancer over a period of years.

MATERIAL AND METHODS

Study design

The study was a retrospective review of all histologically diagnosed cervical cancer in the department of Pathology of our center over a period of 9 years from 2008-2016. Our centre (Komfo Anokye Teaching Hospital, Kumasi) serves as a major referral centre for the northern belt of the country.

Data collection

Data regarding demographics, clinical diagnosis and histological assessment were abstracted from the surgical daybook. The histological slides and reports of all cases were retrieved and reviewed. Where the slides were not found, the blocks were retrieved and new sections were cut from the blocks for histological review. All the investigations were done on paraffin-embedded tissues and the diagnoses were based on H&E stained slides.

Statistical analysis

The data were entered into SPSS software (version 21) and analysed. Results are presented in charts and tables.

RESULTS

During the period under review, a total of 1,094 cervical histological findings were reviewed. Of these, there were 1,087 (99.4%) cervical carcinomas, 3 (0.3%) normal and 4 (0.4%) inflammatory. Twenty nine percent (29%) of the patients with cervical cancer were below 50 years while 71% of the women were 50 years and older (Table 1).

Table 1: Age and frequency distribution of women with cervical cancer

Age groups (Years)	Frequency (n)	Percent (%)
<30	11	1.02
30-39	113	10.45
40-49	193	17.85
50-59	263	24.33
60-69	157	14.52
70-79	240	22.20
80-89	79	7.31
90-99	16	1.48
>100	9	0.83
Total	1,081	100.0

Data presented as frequency (n) and percent (%)

The ages of women with cervical cancer ranged from 9 to 120 years with a mean age of 58.9±15.9 years. The peak age range for cervical carcinoma among the patients was 50-59 years. The mean ages for adenocarcinoma and adenosquamous carcinoma were 56.8±13.0 and 52.1±16.3 years respectively (Table 2).

Table 2: Age characteristics of patients per major cervical carcinoma type

Age Characteristics	Minimum Age	Maximum Age	Mean Age	Standard Deviation	Modal Age	Modal Age Range
Overall Data	9	120	58.92	15.903	70	50-59
Squamous Cell Carcinomas	9	120	59.2	16.021	70	50-59
Adenocarcinomas	35	88	56.8	13	56	40-49
Adenosquamous Carcinomas	31	76	52.13	16.31	-	-

Table 3. Histological subtypes, grading and yearly distribution of cervical cancer

Year	08	09	10	11	12	13	14	15	16	Total
Adenocarcinoma	0	2	6	6	6	8	17	9	5	**59**
Squamous Cell Carcinoma										
Poorly differentiated	8	32	35	32	23	26	41	45	12	**254**
Moderately differentiated	9	40	103	82	73	64	60	69	27	**527**
Well differentiated	4	53	35	24	16	18	16	24	16	**206**
In-Situ		5				1	1	1	2	**10**
Basaloid		1		2	2	3	3	6	4	**21**
Pappillary								1	1	**2**
Adenosquamous Carcinoma		1				4	2		1	**8**
Normal				1					2	**3**
Inflammation				1	1				2	**4**
Total	**21**	**134**	**179**	**148**	**121**	**124**	**140**	**155**	**72**	**1094**

Data presented as frequency (n)

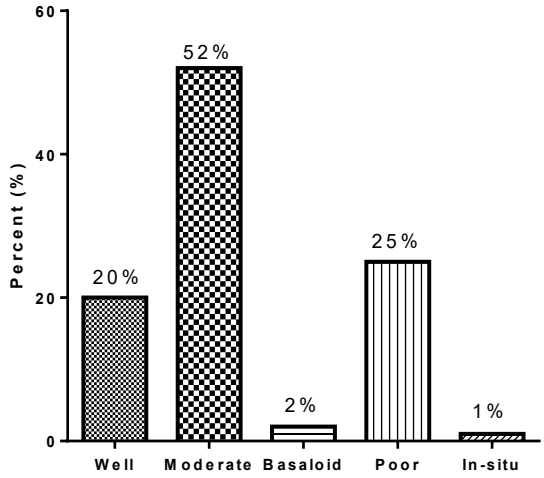

Figure 1: Distribution of squamous cell carcinomas

The highest prevalence of cervical carcinoma was recorded in the year 2010 and the lowest prevalence was seen in 2008 (Table 3). Considering the cervical carcinoma cases, 1,020 (93.8%) out of 1087 were squamous cell carcinoma (SCC), 59 (5.4%) were adenocarcinoma and 8 (0.7%) were adenosquamous carcinoma (Table 3). The histologic subtypes, grading and yearly distribution is as recorded in table 3 above. A large number of our cases of squamous cell carcinoma are of higher grades (II and III) (n = 881/1087).

DISCUSSION

The incidence of cervical cancer in sub-Saharan Africa is known to be very high (Oguntayo *et al.,* 2011; Der *et al.,* 2014; Nartey *et al.,* 2017). Unlike developed countries where cervical carcinoma prevalence has declined over the past two decades due to availability of national cervical cancer screening using Pap smears and HPV screening and also vaccination; the same cannot be said of most developing countries(Oguntayo *et al.,* 2011; Kesic *et al.,* 2012; Der *et al.,* 2014) where these are relatively unavailable or at best inefficient. In our current institutional review, the age distribution characteristics of cervical cancer patients suggest that almost 3 out of every 4 women were at least 50

years. The mean age of our study was 58.9 years. This is somewhat similar to some middle-income country like Tunisia (Missaoui *et al.,* 2010) and that of Nartey *et al.,* (2017) and Der *et al.,* (2014) all in Ghana; Nnadi et al. (2014) Sokoto and Okoye (Okoye, 2014) Benin all in Nigeria, but studies from Zaria, Nigeria (Oguntayo *et al.,* 2011) and Hawassa, Ethiopia (Ameya and Yerakly, 2017) reported lower mean age.

In the current study, invasive squamous cell carcinoma was found to be the predominant subtype (93.8%) of cervical cancer. Similar findings have been documented in previous studies done in Accra, Benin City, Port Harcourt, Nnewi and Calabar where squamous cell carcinoma constituted 90%, 84.2%, 90.2% 92.3% and 97.6% of cervical cancers respectively (Ikechebelu *et al.,* 2010; Olu-Eddo *et al.,* 2011; Der *et al.,* 2014; Okoye, 2014; Irabor *et al.,* 2017). Adenocarcinoma accounted for 5.4% of cervical cancers in this study which is similar to the 5.8% reported by Der *et al.,* (2014) in Accra (Ghana) while adenosquamous accounted for only 0.7%. The finding that squamous cell carcinoma is the predominant histological type is similar to studies in both the low- and high-income countries (Vizcaino *et al.,* 2000; Ikechebelu *et al.,* 2010; Olu-Eddo *et al.,* 2011; Okoye, 2014; Ameya and Yerakly, 2017; Irabor *et al.,* 2017).

Moderately differentiated squamous cell carcinoma (grade II) was the most common histological variant of cervical carcinoma based on tumour grade followed by poorly differentiated (grade III) and then well differentiated. This pattern is very common in Africa where most of patients present with high grade cancers some of which are even metastatic at first hospital visit. The reasons include but not limited to poor access to medical care, lack of awareness, poverty and ignorance; and of course, patronage of traditional and religious healing centers. The occurrence of cervical cancer in this study was very high and comparable to many studies from sub-Sahara Africa unlike that of the developed world. Cervical cancer screening and human papillomavirus (HPV) vaccination programmes are known to be effective in reducing the cancer burden due to cervical carcinoma. However, these programmes are virtually non-existent in many sub-Saharan African states, and where such programs may be, they are hindered in their implementation (Ikechebelu *et al.,* 2010). In Ghana, there is generally no population-based cervical cancer screening program (Der *et al.,* 2014).

CONCLUSION

Our study suggests that cervical carcinoma is still common among women visiting our hospital to seek medical attention for various conditions of the uterine cervix. Squamous cell carcinoma is the most prevalent histological type among cervical specimens at the facility. Policies that promote the implementation, monitoring and evaluation of screening and vaccination programs have to be considered to reduce the burden of cervical cancer in our environment.

COMPETING INTERESTS

The authors declare that they have no competing interests.

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