FEMALE GENITAL TRACT MALIGNANCIES IN A NIGER- DELTA REGION OF NIGERIA

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ABSTRACT

Background: *Gynecological malignancies are easily a paramount cause of morbidity and mortality in women in most sub-Saharan countries. We aim to determine the prevalence and highlight the spectrum of female genital malignancies in Benin City, Mid-Western Nigeria, an oil producing region.*

Methods: *Data of all women with histologically diagnosed genital cancers within a five-year period at University of Benin Teaching Hospital, Benin City, was reviewed, analysed and presented.*

Results: *A total of 119 females had histologically confirmed genital tract malignancies during the study period. Cervical cancer was the most common malignancy with 98 cases (82.4%), followed by ovarian cancer with 10 cases (8.4%) and endometrial malignancies in 6 (5.0%) patients. There were two cases of ovarian Non-Hodgkins lymphoma. Overall, the peak age at presentation was 40 -50 years, while the peak ages for cervical cancer, ovarian cancer and endometrial malignancies were 40-50years, 30-40years and 40-50years respectively.*

Conclusion: *Female genital malignancies, cervical carcinomas in particular, are an important public health problem in Nigeria. National or Regional cervical cancer screening programmes need to be established and sustained. Human Papilloma Virus (HPV) vaccines should be made affordable and available to women from low resource settings in Sub Saharan Africa.*

Key words: *Female genital tract; malignancy; tumor*

INTRODUCTION

Malignancies of the female genital tract are a public health issue globally contributing significantly to cancer morbidity and mortality from cancer.[1] The most common types of gynecologic malignancies are cervical cancer, ovarian cancer, and endometrial (uterine) cancer. Gynecological cancers claimed the lives of more than 27,000 women in 2005, in North America alone .[2]

With a few exceptions,[3] cervical carcinoma has been cited as the most prevalent female genital tract cancer in developing countries, accounting for 80% of the estimated 231,000 deaths that occur from the disease annually .[4-7] Cervical cancer was the leading cause of cancer deaths in the United States 50 years ago but the death rate, as in many other developed countries, has declined by two-thirds to its present rank as the eight leading cause of cancer mortality, as a direct result of effective cervical cytology screening programmes.[8] In sub-Saharan Africa, the HIV/AIDS pandemic has compounded the situation as patients with AIDS also have an increased occurrence of carcinoma of the cervix.

The incidence and prevalence of other female genital malignancies vary from one geographical region to another. Endometrial carcinoma is the most common malignant female genital tract tumor in the United States. [9] Among cancers of the female genital tract, the incidence of ovarian cancer ranks below only carcinoma of the cervix and endometrium. [8] Primary malignancies of the vagina and vulva as well as choriocarcinoma are relatively rare.

The aim of this study is to determine the frequency and histological types of gynecological malignancies seen at the

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University of Benin Teaching Hospital, (UBTH) Benin City, Nigeria and thereby highlight the magnitude of the problem to enable policy makers and clinicians improve health care delivery to cancer patients and encourage further research in this area. To the best of our knowledge, no similar study has been done in Edo State, a Niger-Delta region of Nigeria.

METHODS

The surgical pathology records of all women who presented with genital malignancies within a 5 year period (January 1994 to December 1998) were obtained from the Pathology department of the University of Benin Teaching Hospital (UBTH), Benin City, Edo State, Nigeria. At this time, this was the only referral center with a functioning histopathology unit so surgical specimens from all over Edo State, neighboring Delta State, and its environs were sent here for histopathological analysis. These states all belong to the oil-producing Niger-Delta region of Nigeria where oil spillages are frequent with attendant associated environmental pollution. All biopsy specimens from the female genital tract were processed routinely and reviewed by both the resident doctors and at least one consultant pathologist. Special stains and ancillary investigations were used to ascertain the diagnosis, where necessary. The tumors were classified by histological type and organ site. Relevant clinical data of patients were obtained from patients request cards and clinical records where necessary. To avoid duplication of data, we excluded those patients whose initial histological diagnoses were made outside this hospital.. Also, those patients whose request cards, slides and archival pathological material were unavailable for review were excluded. Metastatic tumors to the genital tract were excluded.

Table 1: Histological types of female genital malignancies in Edo, Nigeria

Histological type/Variant	Number (n)		(%)
CERVICAL CANCER	**98**		
Squamous cell carcinoma		**87**	**88.8**
Adenocarcinoma		**4**	**4.1**
Small cell carcinomas		**4**	**4.1**
Adenosquamous		**3**	**3.0**
OVARIAN TUMORS	**10**		
Serous carcinomas		**5**	**50.0**
Malignant germ cell tumors		**2**	**20.0**
Lymphomas		**2**	**20.0**
Malignant granulosa cell tumor		**1**	**10.0**
ENDOMETRIAL TUMORS	**6**		
Adenocarcinoma		**1**	**16.7**
Stromal sarcomas		**2**	**33.3**
Malignant mixed mulleran tumor (MMMT)		**3**	**50.0**
VAGINA TUMORS	**2**		
Squamous cell carcinoma		**2**	**100.0**
VULVAL TUMORS	**2**		
Squamous cell carcinoma		**1**	**50.0**
Leiomyosarcoma		**1**	**50.0**
CHORIOCARCINOMA	**1**	**1**	**100.0**
TOTAL	**119**	**119**	

RESULTS

Our data showed 119 female patients with genital tract malignancies that were histologically confirmed during the five year study period. Out of these 3 did not have records of their age.

Cervical cancer was the most common malignancy with 98 cases (82.4%), followed by ovarian cancer with 10 cases (8.4%) and endometrial malignancies in 6 (5.0%) patients. Malignancies of the vagina and vulva were seen in 2 (1.7%) patients each while a single case of choriocarcinoma (0.8%) was seen. Table 1, shows the malignancies according to the major histological types and variants. The majority (87.9%) of the cervical cancers were squamous cell carcinoma while only 4% were adenocarcinoma. There were 3(3.0%) cases of adenosquamous carcinoma and 4(4.0%) cases of small cell carcinoma. Fifty percent of ovarian malignancies were serous tumors while 50% of endometrial malignancies were malignant mixed tumors. Other less frequent ovarian tumors were germ cell tumors (20%), lymphomas (20%), and a granulosa cell tumor (10%), while less frequent endometrial tumors that occurred included stromal sarcomas (33.3%) and one adenocarcinoma. All the vaginal and 50% of vulval malignancies were squamous cell carcinomas, while a single case of vulvar leiomyoma was also encountered

Table 2, shows the distribution of these malignancies by age. The age range of our subjects was 8-85years. The youngest patient was an 8 year old girl with Non-Hodgkins lymphoma of Burkitt's type, while the oldest was an 85year old woman with invasive squamous cell carcinoma of the cervix. The peak ages at presentation were 40 -50 years in general, and 40-50years, 30-40years and 40-50years for cervical cancer, ovarian cancer and endometrial malignancies respectively. The average (mean) age of patients according to the site distribution of genital malignancies were 52.4years for cervical cancer, 32.1years for ovarian cancer, 41years for choriocarcinoma, 56years for endometrial cancer, 56.5years for vaginal cancer and 52.5years for vulval cancer..

Table 2: Age and site distribution of female genital malignancies in Edo, Nigeria

Age (yrs)	Cervix	†Endomet	††Chorio	Ovary	Vagina	Vulva	Total
<10	-	-	-	2	-	-	2
10-19	-	-	-	-	-	-	-
20-29	1	1	-	1	-	-	3
30-39	12	-	-	4	-	-	16
40-49	29	3	1	2	1	1	37
50-59	20	-	-	1	-	-	21
60-69	27	1	-	-	1	1	30
70-79	2	-	-	-	-	-	2
⩾80	5	-	-	-	-	-	5
Total	**96**	**5**	**1**	**10**	**2**	**2**	**116**

† Endometrium
††Choriocarcinoma

DISCUSSION

From our results, cervical cancer is the most common genital malignancy in females in Edo state. This is in conformity with other reports from Nigeria. [4-6] Cervical cancer is preventable and curable if detected early, but in many parts of sub-saharan Africa, cervical cancer screening is often opportunistic .[10]This is in sharp contrast to developed countries

where the detection frequency of precancerous lesions and early cancer is high due to effective, population based cervical cancer screening programmes. [8] Although a vaccine for the prevention of human papilloma virus (HPV) 16 and 18 induced cervical cancer has been approved and is currently being administered in well developed countries, in low resource countries where the end users are required to pay for it, it is largely unaffordable to the average woman. In this study, most cases of cervical cancer occurred in the 5th decade of life with an age range of 25-85years. This approximates the peak incidence of the disease in the US where it is occurring at an increasingly younger age of 40-45 years for invasive cancers. [8] In Nigeria, Mohammed A et al reported that 89.5% of 513 cases of female genital tract malignancies in their study were cervical carcinomas and most presented late. [5] Late presentation may be due the absence of an established national cervical cancer screening programme, [11] lack of awareness, and the penchant to patronize witchdoctors and unorthodox health practitioners like 'traditional healers', 'homeopathic doctors' and 'prayer houses'. [12] In this study, unfortunately, very few (less than 10%) of these tumors were graded while accurate data on the stages was only available for a similar proportion, hence stage at presentation cannot be discussed objectively.

Squamous cell carcinoma, was the most common histological variant of cervical cancer (88.8%) while adenocarcinomas (4.1%) and other variants were much less frequent. Adenocarcinomas appear and behave biologically like squamous cell lesions with the exception of association with HPV type 18 while small cell carcinomas, a subset of neuroendocrine tumors with aggressive behavior, are also frequently associated with HPV 18. [8] Metastatic tumors to the cervix often arose from the endometrium but were not the focus of this study.

Ovarian tumors were the second most common genital tumors in females in this study, similar to other Nigerian reports. [4-6] In Pakistan, ovarian tumors are the most common genital tract malignancy, superseding cervical cancer. [3] Five were serous tumors including 3 papillary carcinomas and 2 serous cystadenocarcinomas. Serous cystadenocarcinomas were the most common histological variety reported by other authors in Nigeria. [4-6] In this study, two cases of ovarian Non-Hodgkins lymphoma (NHL) were encountered, an 8year old girl with Burkitt's type NHL and a 27 year old with small lymphocytic lymphoma. Primary lymphomas of the female genital tract are quite rare and were not reported in most of the other series we cited. [13] It is possible that the occurrence of female genital tract lymphomas in patients in this Niger-Delta region has an environmental association. Omoti and Halim, in a study of 205 patients with lymphomas in the Niger-Delta area of Nigeria, found that Non-Hodgkins lymphomas were the most common lymphomas in young adulthood. [14]This oil rich area is also prone to environmental pollution from frequent oil spills with their attendant health hazards.[14,15] Other risk factors for ovarian malignancies include nulliparity, family history, and hormonal treatment for infertility. Tumor markers such as CA 125 can be assayed in patients at risk for early detection, in conjunction with clinical examination and radiological investigations. [15]

Endometrial malignancies were the third most common in this study. Out of the 6 cases we had, 50% were malignant mixed Mullerian tumors (MMMT) or carcinosarcomas. These are rare, heterogenous lesions encountered in the uterus, usually in elderly women of about 65years. [9] Two of these patients were under 50 years old and both presented with a polypoid mass extruding out of the cervical os. MMMT is usually an aggressive tumor and preoperative tumor markers at diagnosis have been proposed by some authors. [17] Only 1(0.8%) case of an endometrial adenocarcinoma was encountered in this study. Previous studies indicate that this lesion is uncommon in Nigeria. [4, 5, 18] In contrast, endometrial carcinomas is the most common malignant female genital tract tumor

in the United States accounting for 7% of invasive cancer in women, excluding skin cancer. [8,9] Increase in endometrial carcinomas in younger age groups as well as the earlier detection and eradication of cervical intraepithelial neoplasia (CIN) have contributed to its predominance over cervical cancer in this population. Stromal sarcomas, although rare, occurred in 2 patients.

Choriocarcinoma was infrequent in this study, occurring in a 41 year old (0.8%), in contrast to the reported frequency in Ibadan, Nigeria where it occurs in 1 in 2500 pregnancies.[8,19] Choriocarcinoma is a gestational tumor that most often arises in the uterus but can also occur in sites of ectopic pregnancies. Low biopsy rates, due to the dependence on biochemical levels of human chorionic gonadotrophin(HCG) levels alone without recourse to histopatholgical analysis for diagnosis of the tumor may account for the low number seen in our study as our study was based on histopathological diagnosis. The sensitivity of the choriocarcinoma to chemotherapy has markedly reduced mortality from it in recent times.[19,20]

Vaginal carcinoma occurred in 2 women aged 40 and 68 years and both were squamous cell carcinomas. Primary vaginal cancers are rare. Most are squamous cell carcinomas and associated with high risk HPV. Vulva lesions were equally few in this study, with 2 cases, one squamous cell carcinoma and a leiomyosarcoma. The squamous cell types are also high risk HPV associated.

CONCLUSION

Cervical cancer is the most common female genital malignancy in Edo, Nigeria. Most patients were in the 4th decade of life while squamous cell carcinoma was the most predominant type. Female genital malignancies were most common in the 4th decade of life and rarely occurred in patients younger than 30years. Larger scale studies are still required before reaching definite conclusions about these frequencies.

We, however, advocate that governmental and non- governmental bodies establish sustainable National or regional cervical cancer screening programmes. Avenues to ensure HPV vaccines are made affordable and accessible to resource poor countries should be explored. It is hoped that this study will spur more research on cervical cancer and HPV serotypes in African countries.

COMPETING INTERESTS

The authors declare that they have no competing interests.

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