Prevalence of adenocarcinoma among cervical cancer patients in Igbos of Nigeria

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Abstract

Background: Adenocarcinoma of the cervix, although a common problem among females in Nigeria is often poorly screened and consequently under-detected. There is a need for improved awareness and early screening to stem the trend of increasing mortality. **Objective:** To determine the prevalence of adenocarcinoma among cervical cancer patients in Igbos of Nigeria. **Design:** Data sources from surgical specimens from 40 hospitals spread across the five states of South Eastern Nigeria. **Setting:** National Orthopedic Hospital, Enugu, in South Eastern Nigeria. **Materials and Methods:** A total of 206 cervical histopathology reports obtained from patients of the Igbo ethnic group of Nigeria between January 2007 and December 2010 were selected and studied. **Results:** Prevalence of adenocarcinoma is 11.5% with a mean age of presentation at 62 ± 6.4 years. It is associated with irregular vaginal bleeding (60%), vaginal discharge (15%), lower abdominal pains (13%), and post-coital bleeding (12%). Age and parity of the patients appeared to be significantly associated with the prevalence of the disease. **Conclusion:** There is a need for increased awareness and periodic screening to ensure early detection and institution of therapy.

Key words: Adenocarcinoma, Cervical Cancer, Igbos, Nigeria

INTRODUCTION

Cervical cancer is an important public health problem. It is the second leading cause of cancer death among women world-wide, resulting in 275,000 deaths annually.[1] It is also the most common gynecological malignant neoplasm all over the world.[2] According to recent data, an estimated 500,000 new cases occur annually worldwide, with the vast majority in the developing countries.[3] Over 80% of the estimated deaths which occur annually due to cervical cancer also occur in these countries. In Nigeria, the age-adjusted incidence rate of cervical cancer is approximately 24.1/100,000 from Ibadan Cancer Registry data (1998-1999). This is probably an under estimation as there is general under reporting of cancer cases. In general, women of low socio-economic status have higher rates.[2]

Cervical cancer is a potentially preventable disease. While screening programs have decreased the incidence of squamous cell cervical cancer, the incidence of adenocarcinoma of the cervix has risen from 5% to 24%.[3,4] It is, therefore, important to be aware of the risk factors, screening techniques and available diagnostic options with special attention to the management of the pre-invasion disease.[2] The risk factors of cervical cancer include women with multiple sex partners, early age of first intercourse, history of venereal disease,[5] women whose male partners have multiple partners,[6] association with Human papilloma virus,[7] (a sexually transmitted virus, especially of the type 16,18,31,33), smoking[8,9] and early marriage.[10]

Cervical cancer is associated with a broad age range.[11] In contrast, cervical intraepithelial neoplasm, which are the precursors of invasive disease frequently occur in younger

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women, often under 35 years of age. The observation that the precursor lesions occur at a younger age than does invasive disease is consistent with the notion that the malignant transformation of squamous epithelial cells requires a longer latency period. Significant declines in the incidence and mortality of cervical cancer have been noted in the last 20 years, particularly in advanced countries of the world where screening programs are better organized. Accessibility to treatment, early detection, reduction in parity, sexual behavioral change and awareness have contributed to its decline. Unfortunately, there has been no significant change in most developing countries like Nigeria. This is because the risk factors are still prevalent, and the awareness, as well as the huge material and human resources required for mass screening, are lacking.

Diagnosis of cervical carcinoma depends on a high index of suspicion. However, prime clinical findings may include irregular vaginal bleeding, vaginal discharge, lower abdominal pains, and post-coital bleeding. This study is aimed at determining the prevalence of adenocarcinoma among the Igbos with cervical cancer and to assess the relative associations of such factors as age and parity on the disease.

MATERIALS AND METHODS

A total of 206 cervical histopathology reports of surgical specimens obtained from patients of the Igbo ethnic group of Nigeria, between January 2007 and December 2010 were used for the study. The tissue blocks for these reports were also retrieved for the study. The surgical specimens with accompanying histopathological forms were obtained from 40 hospitals spread across the five states of South Eastern Nigeria. The reports on specimen taken from patients at National Orthopedic Hospital, Enugu, venue of the study, were excluded in order to demonstrate the true geographical pattern.

Each specimen was properly labeled with the name, age, ethnic group, address of hospital, date of operation and the referring doctor. Other data obtained from each patient histopathological form included a clinical diagnosis, complaints and its duration, clinical signs, parity and last menstrual period. The already processed paraffin wax blocks were sectioned at 5 μm with rotary microtome and sections were stained with hematoxylin and eosin techniques for general tissue architecture and diagnosis. The stained slides were then viewed and confirmed under high power microscope.

RESULTS

Four-year archival records of surgical biopsies, dating from January 2007 to December 2010, and containing 206 cases of diagnosed cervical cancer, were reviewed. The specimens retrieved for the study were from various Government, Mission and private hospitals situated in Eastern Nigeria. The patients' ages, which ranged from 30 to 78 years, were grouped into six age grades. The age and cervical cancer occurrence within these years is shown in Table 1 and Figure 1.

None of the cervical cancer patients was nulliparous, 19.5% had 1-4 pregnancies, 45% had 5-8 pregnancies while 35.5% delivered 9 or more children. Eighty and a half percent (80.5%) of the cervical cancer patients were grand multiparous as seen in Table 2. A relationship between parity and the incidence of the disease may exist.

Sixty percent (124) of the patients presented with a history of irregular vaginal bleeding alone while 72% (148) presented with a history of irregular vaginal bleeding and post-coital bleeding. Vaginal bleeding was, therefore, a major significant clinical finding ($P < 0.05$). Fifteen percent (30) of the patients presented with vaginal discharge alone as shown in Table 3.

Adenocarcinoma was seen in a total of 23 cases (11.5%).

DISCUSSION

Approximately 70-75% of cervical carcinomas are squamous cell; the remainder are composed of various types of

Table 1: Age distribution of patients

Age group	Number of patients	Percentage
20-29	0	0
30-39	9	4.5
40-49	22	10.6
50-59	61	29.5
60-69	73	35.4
70-79	41	20
Total	206	100

Table 2: Pregnancy distribution among patients

Parity group	Total	Percentage
1-4	40	19.5
5-8	93	45.0
9 or more	73	35.5

Table 3: Clinical findings among the patients

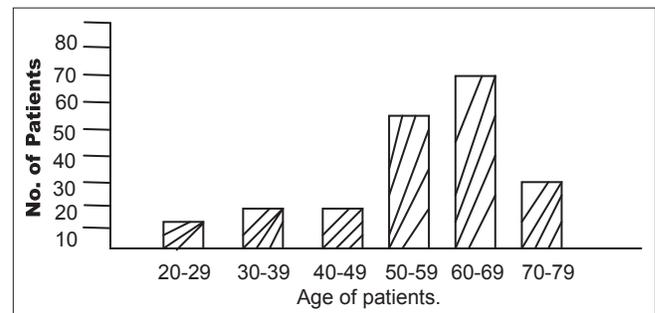| Clinical findings	Total	Percentage
Irregular vaginal bleeding	124	60
Vaginal discharge	30	15
Lower abdominal pains	28	13
Postcoital bleeding	24	12

Figure 1: Age distribution of patients

adenocarcinoma (20-25%), adenosquamous carcinomas (3-5%), and undifferentiated carcinomas. Adenocarcinoma of the cervix is derived from the glandular elements of the cervix [Figure 2]. The incidence of adenocarcinomas, including the mucinous, endometrioid, clear cell, and serous types, has been rising over the last several decades, especially in women younger than 35 years of age.[12] Part of this increase may be a result of an increasing prevalence of HPV infection and part may be a result of improvements in screening and prevention of squamous preinvasive disease, thus leading to a histologic shift towards adenocarcinoma.[3] The villiglandular-papillary variety of adenocarcinoma of the cervix tends to occur in younger women and have a more favorable prognosis.[13]

Most of the cases of cervical cancer in this study were seen in the peri-menopausal or post-menopausal periods. According to Edington and Gilles, peri-menopausal women are frequently affected by cervical carcinoma in the tropics.[14] This is true of the Igbos.[15] Cervical cancer is the second commonest malignancy seen in females in Nigeria and East Africa after breast cancer.[14] It is therefore of national importance as the present mortality from the disease is appalling. The mean age of presentation of cervical carcinoma in this study was in the sixth decade of life, about 20 years above the age reported in advanced countries like USA.[16] Most patients present too late at the hospital for curative therapy as the facilities for early screening and detection are grossly inadequate. The resources used in carrying out the hysterectomies in patients with the attendant high mortality may be better channeled to the preventive stage of the disease. The high incidence rate and the late presentation of the disease emphasize the importance of the tumor in Nigeria.[15]

The age of the patient was given in 200 (97.1%) of the histopathological reports. All histopathological forms must be filled correctly and must contain the patients' age and another clinical date as contained in the form. Errors in omitting the age or giving a wrong age will affect future screening programs. Future screening programs and awareness campaigns should include all girls above 20 years since the disease is beginning to appear in much younger women <30 years.[12,17]
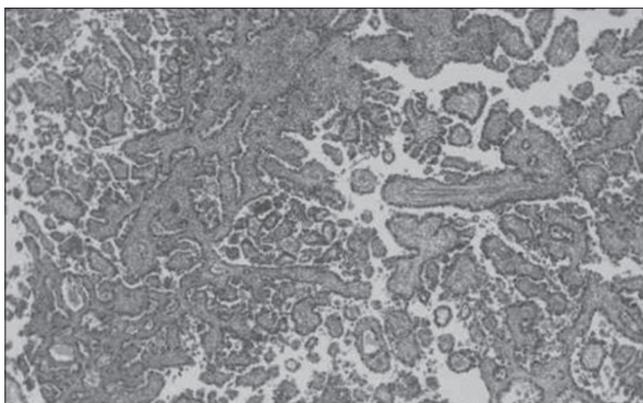

Figure 2: Photomicrograph of clear cell adenocarcinoma of the cervix showing numerous glands and cancer cell infiltration (H and E, ×40)

The steady increase in the yearly occurrence of the disease from 2007 to 2010 is worrisome. The number of cervical cancer patients seen in 2007 had doubled by 2010 [Table 2]. In all probability, with increasing morbidity and mortality, there is decreasing workforce and productivity. Hence, more awareness should be created by the relevant government agencies and more screening centres established to check the rising trend.

The finding that none of the cervical cancer patients in the study was nulliparous is very significant and agrees with earlier studies.[18] The disease is very rare in nuns.

The percentage of adenocarcinoma seen in this study is similar to that noted in the series from other parts of the world where it accounts for approximately 20% of malignant cervical tumors.[18] The screening based on exfoliative cytology introduced in the 1950s by Papanicolau, followed by colposcopy in appropriate patients, is an effective method for identifying squamous intraepithelial lesions.[19,20] The goals of colposcopy are to identify suspicious areas that require biopsy and to determine the extent of the lesions. Treatment of intraepithelial lesion is determined on the basis of the histological diagnosis and the extent of the lesions on colposcopic examination.[20] Unfortunately, the Pap-smear screening is less efficient or even of no benefit in cervical adenocarcinomas [Figrue 2].[21] A marked decrease in the incidence of cervical squamous cell carcinoma in the last decades in advanced countries, thanks to the screening, appears to be in contrast to the increasing rate of cervical adenocarcinomas.[3,4]

The question whether cervical clear cell adenocarcinoma and adenocarcinoma have worse prognosis than squamous cell carcinoma of the uterine cervix remains open.[22] Korhonen suggested, after the analysis of 163 cases of primary cervical adenocarcinoma of different subtypes that the prognosis of clear cell carcinomas is similar to that of non-clear cell cervical adenocarcinomas.[23]

While the antecedents of adenocarcinoma of the cervix and its natural history are uncertain, clinical opinion holds that the prognosis for survival is less than that of patients with squamous cell carcinoma.[24] Several studies have shown that adenocarcinoma confers a worse prognosis with higher rates of nodal involvement, distant metastasis, and decreased survival across stages, compared with squamous cell carcinoma.[4,25,26] Few studies have demonstrated the distinct molecular profiles between squamous cell carcinoma and adenocarcinoma that explain the observed clinical differences.[27] A graver prognosis may be expected in a disease which is not usually discovered in the pre-invasive stage by screening techniques, which may remain clinically undetected while advancing in the endocervical canal and which is said to be more resistant to radiotherapy than squamous cell carcinoma.[25] Patients treated with irradiation and conservative hysterectomy may have a better 5-year survival rates, up to 85%.[26]

If parity reflects the coital etiological factors associated with squamous cell carcinoma, then these factors are of

lesser importance in the development of adenocarcinoma. Reports have suggested that adenocarcinoma of the cervix is perhaps related to the use of hormonal contraceptives by women.[27] There is an absolute lack of clinical data on the use of hormonal contraceptives in the histopathological forms used in this study. Further studies are necessary to clarify this issue, especially the role of prolonged use of the contraceptives.

CONCLUSION

In view of the increasing prevalence and mortality of adenocarcinoma amongst the Igbos of Nigeria, early and periodic screening is inevitable. This will ensure early detection and commencement of therapy and a better survival rate.

ACKNOWLEDGMENT

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