The pattern of cervical cytology in Obstetrics and Gynaecology clinics in Nnewi, South-Eastern Nigeria

Obi B Nwosu[1]
Charles I Okafor[1]
Nworah J Obiechina[1]
Maxy A Odike[2]

[1]*Department of Obstetrics and Gynaecology*
[2]*Department of Pathology*

Nnamdi Azikiwe University Teaching Hospital
Nnewi
Nigeria.

Author for Correspondence
Dr. BO Nwosu
Department of Obstetrics & Gynaecology
Nnamdi Azikiwe University Teaching Hospital
C/O: Box 2828 Nnewi Anambra State
Nigeria.

E-mail: drobinwosu@yahoo.com

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ABSTRACT

Background: Cervical cytology screening has decreased the incidence of and mortality from invasive cervical cancer in developed and even some developing countries. The story is still different in Nigeria because there is no national screening programme in place.
Objectives: The aim of this study was to evaluate the pattern of cervical cytology and relate it to some known risk factors such as age, parity, age at coitarche, number of sexual partners and clinical presentation.
Subjects and Methods: A total of 100 women were seen at two Obstetrics and Gynaecology clinics in Nnewi over a three month period (May-July 2005) were screened. Conventional method of staining was used. The first fifty sexually active women that consented to completing the study questionnaire in the two clinics were included.
Main Outcome Measures: The work noted the pattern of reports in relation to some known risk factors and adequacy of the sampling.
Results: Sampling adequacy was 93%; epithelial cell abnormality was reported in only one smear; 58 were reported as normal; 14 showed benign cellular changes (i.e. infective); and 18 reactive changes (i.e. atrophy).
Conclusion: Now that infective aetiology has been established in cancer of the cervix, the co-factors may be some of these causes of benign cellular changes of the cervix.

Keywords: *A typical squamous cells, cancer, cervical, co-factors, Pap smear*

INTRODUCTION

Cervical cancer results from the uncontrolled growth of severely abnormal cells in the cervix particularly the transformation zone. Population screening by regular cervical cytology has been shown to reduce the incidence of and mortality from invasive cancer. Accurate cytological reporting may reveal cervical cells that are normal or abnormal cells such as dyskaryosis, koilocytosis (cells infected with HPV), etc.

Human papilloma virus having fulfilled disease - causal (or aetiology) relationship of Koch's postulation may have some co-factors (or co-carcinogens) because of the following observations; the time span it takes appears rather long (10years) to reach carcinoma in situ and a further number of years before invasion during which time many of the lesions disappear.[1] Secondly, the incidence of viral infection in a population is so high that by comparison the occurrence of cancer of cervix is a rare event.[2] HPV affects an estimated 50% to 80% of sexually active women at least once in their lifetime. [2]

The co-factors may come in the forms of hormonal, social (e.g. tobacco use) and disease conditions such as HIV and these other causes of benign changes of cervix. In a report of cervical cytological patterns at Port Harcourt Nigeria, the infection rate was highest in women on IUCD, followed by those on hormonal contraceptives and lowest among those with no contraceptive.[3]

A simple conventional method of staining the smear was used because this was readily available and was also what our resources could support. We set out to evaluate the pattern of cervical cytology and relate it to some known risk factors and clinical presentation.

SUBJECTS AND METHODS

Researcher administered questionnaires were applied on 100 women (who consented to the study) from the Gynaecology and postnatal clinics at Nnamdi Azikiwe University Teaching Hospital (NAUTH) and Chimex Specialist Hospital and Maternity in Nnewi. Over a three month period (May – July 2005) cervical smears were taken from 50 patients in each of the hospitals. The questions provided pertinent information on patient's biodemographs in addition to clinical data such as last menstrual period, age at marriage/coitarche, parity, marital status, contraceptive method, if any, and number of sexual partners. The clinical diagnosis and other relevant information about the patient were completed by the researchers. Those who were on their menstrual period were excluded so also were those who were not willing to give information on the questions.

Cervical smears were then taken using the Ayre's spatula and immediately immersed in a glass jar containing 95% ethyl/alcohol to avoid air drying. These previously identified slides were later (30minutes) removed and stained by papanicoloau staining (orange G, Bismarck brown, and haematoxylin). They were examined by the pathologist. The Bethesda system was used in reporting the findings.

RESULTS

The sampling adequacy was 93%. Epithelial cell abnormality was reported in only one smear. The age distribution cytology report and infective cytology pattern results are as shown in tables 1-3 and figures 1 - 2.

Seventeen out of the 100 patients were on six weeks postnatal visit, eleven of them had smear diagnosed as reactive changes (atrophy). By the age of 14 years, majority of the patients have had their first sexual intercourse (Fig 1).

There were only 17 postnatal patients and no pregnant woman consented to the study. The only patient, whose cervical smear showed epithelial cell abnormality (ASCUS), was a single mother, who became sexually active by 14years of age, has multiple sexual partners, and was 25years old during the study.

Table 1: Age distribution and number of patients in the study

Age (years)	No. of cases	%
15 – 19	2	2
20 – 24	20	20
25 – 29	35	35
30 – 34	23	23
35 – 39	10	10
40 – 44	6	6
45 – 49	2	2
50 – 54	2	2

Table 2: Cytology report analyzed following Bethesda System

Cytological diagnosis	No. of cases (Pap smear)	%
Normal smear (i.e. negative)	58	58
Reactive cellular changes	18	18
Benign cellular changes	14	14
Epithelial cell abnormality (ASCUS) (premalignant)	1	1
Satisfactory but limited (not specified)	2	2
Unsatisfactory	7	7

Table 3: Infective cytology pattern vs. number of sexual partners

No. of sexual partners	No. of infective cytology pattern	%
Multiple sexual partners	8	57.2%
Single sexual partners	6	42.8%
Total	**14**	**100%**

Fig 1: Chart showing age at coitarche

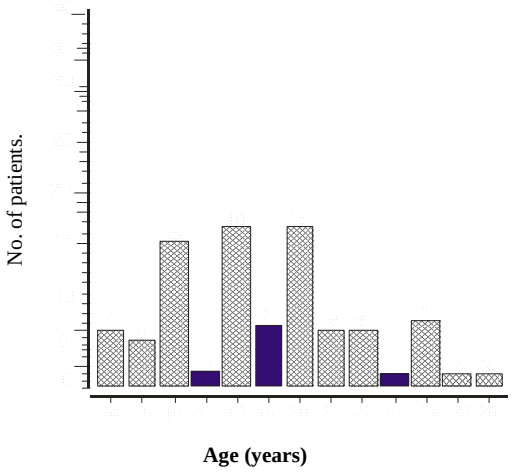
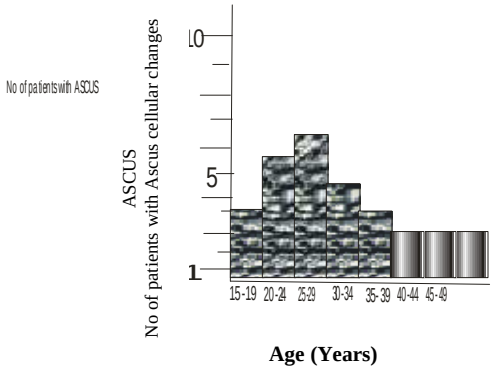


Fig 2: Age distribution



DISCUSSION

Cervical Cytology is generally reliable in identifying women who do not have precancer.[4] However, the test misses some women who have abnormal cells (i.e. false negative). Studies have shown that only 20 to 50 % of women with precancer are correctly identified.[5] Pap smear screening, therefore, needs to be repeated over time to ensure that premalignant cases are not missed out. This may be impossible in the resource-limited settings such as ours.

In this study, cervical cytology was reported negative in 58% in a setting of 93% sampling adequacy. We appreciate the fact that Pap smear test has a high false negative value, therefore, a follow up study is planned following this preliminary work.

The sample was limited in number (100 patients) because it was a preliminary work and we considered the financial burden on the investigators. Cervical cytology is not advised for the purpose of diagnosing or excluding gynaecological infections.[6] We were mindful of this unsettling tendency and will therefore analyze our information towards establishing supports, that infections may be co-carcinogens in the development of carcinoma of cervix with primary aetiological agent is human papilloma virus.

Epithelial abnormality of the atypical squamous cell of undetermined significance (pre-malignant type) ASCUS was found in only one patient. The prevalence of dysplasia found by cytologic examination varies from 5 to 65 per 1000, depending on the population group being screened.[7] This low prevalence of cervical dysplasia found in our study was similar to that reported in a similar work done in Port Harcourt.[3] This may similarly be due to the low number of patients involved.[3]

The cervical cytology pattern also showed cellular changes, [both reactive and benign inflammatory cellular changes] in 32 of the samples. The theoretical and practical implications of this finding are the fact that our study identified these changes, and their age distribution is similar to the epidemiology of premalignant group worldwide.[8] Secondly, the pathogenesis of cervical cancer starts similarly with cellular changes. It may suffice to conclude that the underlying factors of these changes, (be it hormonal, infective, or social factors) are co-carcinogens or co factors in the aetiology of carcinoma of the cervix.

CONCLUSION

The underlying factors in the pathogenesis of carcinoma of the cervix may be those of the cellular changes (reactive and inflammatory). These changes then transform when human papilloma virus is contracted the vaccine, cervarix, which acts on human papilloma virus needs to be fortified against these factors.

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