ORIGINAL ARTICLE

Morphological spectrum of non-neoplastic lesions of the uterine cervix in Warri, South-South, Nigeria

FN Nwachokor, GD Forae[1]

Department of Pathology, Delta State University Teaching Hospital, Abraka, [1]Department of Pathology, University of Benin Teaching Hospital, Benin City, Nigeria

Abstract

Background: The uterine cervix is a gateway to several non-neoplastic and neoplastic gynecological lesions. Most of these non-neoplastic lesions are commonly found in women of reproductive age. These lesions constitute a source of morbidity and mortality in women worldwide hence the need to analyze them to provide a baseline data of the pattern of these lesions in our local environment.

Objective: The purpose of this study is to determine the frequency and morphological patterns of non-neoplastic cervical lesions at the central hospital, Warri, Nigeria.

Materials and Methods: All uterine cervical biopsies received at the Department of Pathology, Central Hospital, Warri over a 7 year period (January 2005-December 2011) were the specimens for this study. Slides were retrieved from the archives of the Department of Pathology. Where necessary, new sections were made from formalin fixed, paraffin embedded blocks.

Results: A total of 176 cervical specimens were received in the Pathology Department during this period. Of these, 56.3% were benign lesions while 43.7% were malignant. Among the benign cases, non-neoplastic lesions accounted for 92.9% of benign cervical lesions. The age range of non-neoplastic cervical lesions was 20 to 89 years with a mean age of 54.9 ± 4.6 years. The peak age incidence of non-neoplastic cervical lesion was 40-49 years which accounted for 33.7%. Inflammatory lesions and tumor-like lesions accounted for 59.8% and 40.2% of non-neoplastic cervical lesions respectively. Among the inflammatory lesions, chronic non-specific cervicitis was the most commonly encountered lesion constituting 72.2% of all inflammation. Human papilloma virus (HPV) cervicitis with koilocytic changes accounted for 14.5% of all inflammatory lesions.

Conclusion: Inflammatory lesions were the most frequent non-neoplastic cervical lesions. These lesions therefore account for significant amount of gynecological problems in our environment. Adequate cervical screening with follow up histological biopsies is a relevant tool in diagnosing them to enhance early detection of premalignant and malignant cervical lesions.

Key words: Benign, cervical lesions, non-neoplastic, diagnosis, histopathology

Date of Acceptance: 06-Sep-2012

Introduction

Non-neoplastic cervical lesions cut across all age groups amongst women but are more commonly seen in sexually active women. These lesions include inflammatory and tumor-like non-neoplastic lesions. Majority of non-neoplastic lesions are inflammatory in nature.[1] Inflammatory lesions of clinicopathological importance are acute cervicitis, chronic cervicitis and chronic granulomatous cervicitis.[1,2] These can result from both infective and non-infective aetiology. Infective causes of acute and chronic cervicitis include a wide

Address for correspondence:
Dr. Gerald Dafe Forae,
Department of Pathology, University of Benin Teaching Hospital, Benin City, Nigeria.
E-mail: jforae2000@yahoo.com

Access this article online

Quick Response Code:

Website: www.njcponline.com

DOI: 10.4103/1119-3077.116883

PMID: *******

spectrum ranging from bacterial, viral, protozoan and fungi microorganisms commonly encountered in sexually transmitted infections (STIs) and urinary tract infections (UTIs). Studies have shown that chronic granulomatous cervicitis is mostly caused by tuberculosis.[3] Sexual transmitted viruses include human papilloma virus (HPV) and herpes simplex virus. HPV cervicitis is a causal risk factor for condylomata acuminatum, pre-invasive cervical intraepithelial neoplasia (CIN I, II, III) and eventually cervical cancer.[4]

Tumor-like non-neoplastic cervical lesions according to the World Health Organization include endocervical hyperplasia, endometriosis, nabothian cyst, endocervical polyps.[5] Study done by Pallipady *et al.* have shown that polypoidal endocervicitis, squamous metaplasia, micro glandular hyperplasia, accounted for 29.3%, 73.4%, 2.6% of all non-neoplastic lesions of the cervix respectively.[2]

The aim of this study is to establish the prevalence and histological types of non-neoplastic cervical lesions of the cervix in Delta State, Nigeria. It is hoped that data derived from this research will be useful in the management of these lesions and as well serve baseline data for further research.

Materials and Methods

All uterine cervical biopsies received at the Department of Pathology, Central Hospital, Warri over a 7 year period from January 2005-December 2011 were the materials for this study. These specimens were sent from the Obstetrics/Gynecology and Consultant's out patient clinic of this hospital, and other hospitals in the Warri metropolis and all over Delta State of Nigeria. Clinical and demographic data including age, sex, clinical history, diagnosis was obtained from surgical day books, request cards and case files. Slides were retrieved from the archives of the Department of Pathology. Where necessary new sections were made from formalin fixed, paraffin embedded blocks and stained with Hematoxylin and Eosin. Where necessary special stains were used to further characterize cervical lesions. These lesions are classified using the World Health Organization (W.H.O.) criteria[5]

Data obtained were analyzed using the SPSS version 16 statistical package.

Results

Demographic analysis

During this seven year period, a total of 176 cervical specimens were received in the Pathology Department. Of these, 99 cases (56.3%) were benign lesions while 77 cases (43.7%) were malignant. Among the benign cases, 92 were non-neoplastic accounting for 92.9% of benign cervical lesions.

Table 1 shows the age distributions of non-neoplastic cervical lesions. The age range of non-neoplastic cervical lesions was 20 to 89 years with a mean age of 54.9 ± 4.6 years. The peak age incidence was 40-49 years accounting for 33.7% of non-neoplastic cases. Only 7 cases (7.6%) and 5 cases (5.5%) occurred before 30 years and after 70 years respectively.

Clinicopathological Analysis

Table 2 shows the histological types of non-neoplastic cervical lesions. Inflammatory lesions accounted for 55 cases (59.8%) of non-neoplastic cervical lesions. Thirty seven cases (40.2%) were tumor-like non-neoplastic cervical lesions. Among the inflammatory lesions, chronic non-specific cervicitis was the most commonly encountered lesion constituting 40 cases (72.2%) of all inflammation. Our study show that 75.2% of all chronic non-specific cervicitis occurred in the 4th to 6th decades of life.

Human papilloma virus (HPV) cervicitis with koilocytic changes accounted for 14.5% of all inflammatory lesions. The second most common lesion was endocervical polyps accounting for 15 cases (16.3%) of non-neoplastic cervical lesions. Ectropion with squamous metaplasia was rare accounting for 11.1% of non-neoplastic cervical lesions. Endocervical hyperplasia, nabothian cyst, and endometriosis, were extremely uncommon lesions accounting for (n = 4;

Table 1: Age Distribution of Patients with Non-Neoplastic Cervical Lesions

Age range	Frequency	Percentage
20-29	7	7.6
30-39	20	21.7
40-49	31	33.7
50-59	22	23.9
60-69	7	7.6
70-79	4	4.4
80-89	1	1.1
Total	92	100.0

Table 2: Histological Types of Non-Neoplastic Cervical Lesions

Histological Diagnosis	Frequency	Percentage
Acute cervicitis	7	7.6
Chronic non-specific cervicitis	40	43.5
Chronic cervicitis with HPV koilocytosis	8	8.7
Ectropion	11	11.9
Endocervical Hyperplasia	4	4.3
Endocervical polyps	15	16.3
Cervical prolapsed	1	1.1
Nabothian cyst	3	3.3
Endometriosis	2	2.2
Granulation Tissue	1	1.1
Total	92	100

4.3%) (n = 3; 3.3%), and (n = 2; 2.2%) of non-neoplastic cervical lesions respectively.

Discussion

In these 7 years retrospective study 176 histological confirmed benign cervical lesions were reported. Of these, 56.3% were benign and 43.7% were malignant lesions. The ratio of benign to malignant accounted for 1.3:1. This data clearly shows that benign lesions were more common than their malignant counterparts in our environment. This finding is in keeping with previous reports by Ozumba *et al*. where benign lesions were more common than malignant lesions.[6,7] However our report is at variance with reports by some researchers from other parts of the world where malignant cervical lesions were more common than benign lesions. The reason for this variation may be partly due to differences in geo-ethnic variation, inadequate cancer register in our locality and the fact that most cancer patients seek alternative/trado-medical therapy hence most cancer cases are not reported.

The peak age range of non-neoplastic cervical lesions was 40-49 years accounting for 33.7%. This finding is similar to previous reports from Ile-Ife where its peak age of 40-49 years accounting for 34.7%. Our findings have shown that among the non-neoplastic cervical lesions biopsied, 59.8% were associated with features of cervicitis. Thus, it constitutes the highest percentage of non-neoplastic cervical lesions in our environment. This report again is similar to previous studies by researchers where cervicitis accounted for 80% and 98% respectively.[1,8] However our findings are lower than these reported values. The reason attributed to this is that most cases in our environment go unreported. In addition, it is also important to note that most cases are treated empirically by physicians or by self-medication. Therefore only few difficult cases would present at the gynecological clinic for proper evaluation when symptoms are recurrent and or persistence.

In this study, chronic non-specific cervicitis accounted for 72.7% of all cervicitis. This report is similar to previous work done by Omoniyi-Esan *et al*. where chronic non-specific cervicitis accounted for 82% of all non-neoplastic lesions.[1] The reason for this is that the cervix is a gateway for reproduction and sexual intercourse and hence can be prone to STIs and UTIs during intercourse, conception, pregnancy, delivery and post-partum. Studies have showed that sexually transmitted infections implicated in cervicitis include *Neisseria gonorrhoeae, chlamydia trachomatis and staphylococcus aureus* in women of developing countries. Thus it accounted for 10%, 7.7% and 7% in Kenya, Ghana and Gambia respectively.[9,10,11] Reports have it that the frequency of chronic cervicitis in sexually active adolescent girls is 10.5% in Nigeria.[1] In our study chronic non-specific cervicitis occurred between the age range of 20-79 years with a peak incidence at the 5th decades of life. No case was seen before menarche. This is similar to previous reports by Craig and Lowe.[12] The reason being that that most girls are not sexually active before menarche. However in this study chronic cervicitis is a common phenomenon in post-menopausal women. This finding also corroborate previous reports by other researchers.[1,12] The reasons for this are linked to sexual activities, reduction in immunity, use of replacement hormone therapy.

Studies have shown that HPV cervicitis is on the increase worldwide.[13] Modern diagnostic techniques including polymerase chain reactions, HPV genotyping, *In situ* hybridization and molecular studies have increased the specificity of this diagnosis. The frequency of HPV cervicitis, particularly high risk biotypes that usually result in cervical cancer varies world-wide.[13] The prevalence of chronic cervicitis with koilocytic changes of HPV infection in this study accounted for 14.6% of all cervicitis. This occurred in sexually active women between the ages of 30 to 59 years in this study. Our finding is in keeping with reports from Argentina where HPV accounted for 15% of sexually active women between the ages of 15 to 65 years.[14] Nevertheless, this finding is slightly at variance with the prevalence of HPV positivity of 26.3% in Ibadan.[15] The reasons for this variations is attributed to the different methods used. Other studies from Africa also supported the high prevalence of HPV cervicitis in Sub-Saharan Africa.[15] Studies done in Uganda reported 17% prevalence of HPV cervicitis. Although the method used (Hybrid capture assay II) is more sensitive.[15]

In this study acute cervicitis accounted 12.7% and 7.6% of all cervicitis and non-neoplastic cervical lesions respectively. This is at variance with other reports where it accounted for 2% of non-neoplastic cervical lesions.[1,16] The reason for this discrepancy cannot be ascertained although acute cervicitis could result from post-abortal sepsis, post-partum infections, acute urethritis and primary cervical infections resulting from the use of tampons. Most cases are treated clinically because of its acute discomfort nature of symptoms.

No case of TB cervicitis was seen in this study. This finding is not strange. The reason been that TB is an extremely rare finding accounting for 0.1% to 0.6% of cases world-wide and it normally affect the upper genital tracts mainly the endometrium and fallopian tubes.[16]

Our findings showed that endocervical polyps accounted for 16.3% of non-neoplastic cervical lesions and the peak age range was in the 5th decade. This is similar to reports where cervical polyps were more commonly seen in the reproductive age especially after 40 years of age.[2,17,18] Our finding also show that ectropion accounted for 11.9% of non-neoplastic cervical lesions. This is a physiological

change that cut across all age group and is a common microscopic finding and is in keeping with previous report by Pallipady.[2] Endocervical hyperplasia was a less common finding which accounted for 4% of non-neoplastic cervical lesions with prevalence in the 5th decades of and is usually an incidental finding. Our findings are similar to reports by Pallipady *et al*. where this lesion was seen in 4.3% of non-neoplastic cervical biopsies.[2,18]

Conclusion

In this study, cervicitis including HPV cervicitis was the most common non-neoplastic cervical lesions. This constitutes a scourge of morbidity and mortality if not properly diagnosed and managed. Adequate cervical screening with follow up histological biopsies is a relevant tool in diagnosing them to enhance early detection of premalignant and malignant cervical lesions.

References

1. Omoniyi-Esan OG, Osasan SA, Ojo OS. Non-neoplastic diseases of the cervix in Nigeria: A histopathological study. Afr Health Sci 2006;6:76-80.
2. Pallipady A, Illanthody S, Vaidya R, Ahmed Z, Suvarna R, Metkar G *et al*. A Clinico-Morphological spectrum of the Non-neoplastic lesions of the uterine cervix at AJ Hospital Mangalore. Journal of Clinical and Diagnostic Research 2011; 5: 546-50
3. Chakraborty P, Roy A, Bhattacharya S, Addhya S, Mukherjie S. Tuberculous cervicitis: A clinicopathological and bacteriological study. J Indian Med Assoc 1995;93:167-8.
4. Bosch FX, Lorincz A, Munoz N, Meijer CJ, Shah KV. The causal relation between human papilloma virus and cervical cancer. J Clin Pathol 2002;55:244-65.
5. Siimionescu C, Margaritescu CL, Georgescu CV, Mogoanta L, Marinescu AM. Pseudo-tumoral lesions of the cervix. Rom J Morphol Embryol 2005;46:239-47.
6. Ozumba BC, Nzegwu MA, Anyikam A. Histological patterns of gynaecological lesions in Enugu, Nigeria. A five year review. Adv Biores 2011;2:132-6
7. Okamoto Y, Tanaka YO, Nishida M, Tsunoda H, Yoshikawa H, Itai Y. MR imaging of the uterine cervix: Imaging-Pathologic correlation. Radiographics 2003;23:425-45;quiz,534-5.
8. In: Padubidri VG, Daftary SW, editors. Howkins and Bourne Shaw's text book of gynaecology. New Delhi: Churchill Livingstone; 2004.
9. Loyal M, Plummer F, Nganze H, Namaara W, Brunham RC, Ndinya-Achola JO, *et al*. Epidemiology of ophthalmia neonatorium in Kenya. Lancet 1986;2:1145-9.
10. Bentsi C, Klufio CA, Perine PL, Bell TA, Cles LD, Koester CM, *et al*. Genital infections with Chlamydia trachomatis and Neisseria gonorrhoeae in Ghanaian women. Genitourin Med 1985;61:48-50.
11. Mabey DC, Lloyd-Evans NE, Conteh S, Forsey T. Sexually transmitted diseases among randomly selected attenders at an antenatal clinic in the Gambia. Br J Vener Dis 1984;60:331-6.
12. Craig P, Lowe D. Non-neoplastic lesions of the cervix. In: Fox H, Well M, editors. Haines and Taylor Obstetrical and Gynaecological Pathology. 5th ed. Edinburgh: Churchill Livingstone; 2003. p. 273-96.
13. Munoz N, Bosch FX, de Sanjose S, Herrero R, Castellsague X, Shah KV, *et al*. Epidemiologic classification of human papilloma virus types associated with cervical cancer. N Engl J Med 2003;348:518-27.
14. Matos E, Lotia D, Amestoy G, Herrera L, Prince MA, Moreno J, *et al*. Prevalence of human papillomavirus infection among women in Concordia, Argentina: A population-based study. Sex Transm Dis 2003;30:593-9.
15. Thomas JO. Prevalence of HPV in Ibadan. Br J Cancer 2004;90:638-45.
16. Richards MJ, Angus D. Possible sexual transmission of genitourinary tuberculosis. Int J Tuberc Lung Dis 1998;2:439.
17. Jones MA, Young RH. Atypical oxyphilic metaplasia of the endocervical epithelium: A report of six cases. Int J Gynecol Pathol 1997;16:99-102.
18. Nigatu B, Gebrehiwot Y, Kiros K, Eregete W. A five year analysis of histopathological results of cervical biopsies examined in a pathology department of a teaching hospital (2003-2007). Ethiop J Reprod Health 2010;4:52-7.

How to cite this article: Nwachokor FN, Forae GC. Morphological spectrum of non-neoplastic lesions of the uterine cervix in Warri, South-South, Nigeria. Niger J Clin Pract 2013;16:429-32.

Source of Support: Nil, **Conflict of Interest:** None declared.