

A Clinico-Morphological Spectrum of the Non Neoplastic Lesions of the Uterine Cervix at AJ Hospital, Mangalore

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ABSTRACT

Background and Objectives: Cervices from hysterectomies and biopsies constitute the majority of gynaecological specimens which are received in the department of histopathology and non-neoplastic lesions form the huge chunk of diagnosis among them. However, there are many lesions that appear to be exuberant and can be misdiagnosed to be malignant. On the basis of this, a detailed histomorphological study of the non-neoplastic lesions of the cervix was taken up .

Methods: 1015 non-neoplastic cervices were evaluated either from hysterectomy or biopsy specimens. These cervices were subjected to detailed gross and microscopic examination and were further subclassified into various non-neoplastic lesions.

Results: All the 1015 (100%) cervical specimens showed the features of cervicitis. However, acute on chronic cervicitis was found in only 43 cervices (4.23%) and tuberculous cervicitis was encountered in only one patient (0.9%). The commonest

endocervical epithelial lesions which were encountered were polypoidal endocervicitis (29.26%) and squamous metaplasia (73.390%) and the uncommon lesions included microglandular endocervical hyperplasia (2.6%), tunnel clusters (2.46%) and mesonephric rests (1.18%). A majority of the ectocervical changes were attributed to the patients who presented with uterine prolapse (214 patients), which included hyperplasia with and without hyperkeratosis and parakeratosis and rarer lesions like decubitus ulcer and prominent melanocytes in the basal layer of the ectocervix.

Interpretation and Conclusion: During the study, a number of non-neoplastic lesions of the cervix were encountered, which caused a great deal of morbidity to the patients. It has been recommended to take up further community based studies in association with a microbiological and colposcopic correlation to evaluate the exact incidence of these non-neoplastic lesions of the cervix.

Key Words: Non-neoplastic cervix , Cervicitis

INTRODUCTION

Gynaecological specimens form the substantial proportion of the workload in most of the histopathological departments [1].

The accessibility of the cervix to direct examination makes it the object of intensive and large scale studies. Diagnostic procedures and instruments are available in almost innumerable varieties. Cervical diseases can be attacked by using the accurate means and can be treated successfully by well worked out measures in a more satisfactory manner, than is possible in the management of the diseases of practically any other organ.

Cervical cytology has come of age and it is very frequently used to screen for cervical diseases. However, a review of the cytology slides after subsequent cervical biopsy reports has shown a reduction in the accuracy of the cervical cytology. Therefore, the histopathological examination of the biopsies of cervical lesions is the single best gold standard for the diagnosis of the non-neoplastic lesions of the cervix [2].

Non neoplastic lesions of the cervix form a major bulk of the diagnosis among the gynaecological specimens, either the hysterectomy or the biopsy specimens. However, the reports are very non-specific, the commonest being "chronic cervicitis". The term "chronic" in chronic cervicitis implies more on the duration of the symptoms rather than on the nature of the inflammatory cells in the cervical lesion. Therefore, a report of chronic cervicitis means nothing to the clinician, as it becomes very difficult to correlate a clinical diagnosis.

A wide variety of non-neoplastic lesions occur in the uterine cervix and are prone to varying extents of misinterpretation. The most common error is to mistake one of these benign but sometimes exuberant processes as neoplastic, with potentially adverse consequences for the patient in the form of inappropriate treatment.

AIM AND OBJECTIVES

The present study was undertaken with the following aims and objectives:

- To study the various gross and microscopic features of the uterine cervix in non neoplastic lesions.
- To categorize these lesions into different groups.

METHODOLOGY

This histomorphological study on the non-neoplastic lesions of the uterine cervix was undertaken in the Department of Pathology at AJ Medical College, Mangalore, over a two year period from March 2008 to February 2010.

The material for this study was obtained from the cervices, either from hysterectomy specimens or biopsies which were received in the department during this period. Relevant and available clinical information regarding age, parity, clinical features and provisional diagnosis were obtained from the histopathology request forms.

These specimens were sent in 10% formalin and were analysed in detail both macroscopically and microscopically to evaluate the different lesions which affected the cervix.

The cervical biopsies which were received were either punch or wedge biopsies. After a thorough examination, all the adequately fixed cervical biopsies were embedded in toto.

Those hysterectomy specimens were excluded from whom prior cervical biopsies were taken up for the study.

The hysterectomy specimens were subjected to a detail gross examination and the following parameters were noted: the length and width of the uterus, size and macroscopic abnormalities of the cervix like the nature of the mucosa, growth, polyps, etc. The uterus along with the cervix was cut open by a longitudinal midline incision which separated the two halves.

After adequate fixation, the tissues for microscopic examination were taken as follows:

1. A minimum of three representative bits were taken for study from the hysterectomy specimens. The bits were taken from the anterior and posterior portions of the cervix including the squamo columnar junction.
2. The tissues were processed routinely and 5 thickness paraffin sections which were stained with H and E were taken for microscopic examination.
3. Special stains like PAS for mucin and ZN stain for AFB were done whenever necessary.
4. The non-neoplastic lesions of the cervix were classified and studied according to the inflammatory and the epithelial changes, which are explained in detail in the results which were obtained.

RESULTS

A total of 1038 cervical specimens were received in the department during the study period. Out of these, 1015 cervical specimens accounted for non-neoplastic lesions. 857 cervical specimens were obtained as a part of hysterectomies and 158 specimens were received as cervical biopsies. CLINICAL PROFILE The clinical symptoms are profiled in [Table/Fig 1].

A majority of the patients who formed a part of this study were in the 4th decade of life (47%) and 85% of these patients were multiparous.

Clinical symptoms: A white discharge per vagina was seen in 270 patients while the presenting symptom was mass per vagina in 214 patients. The details of the clinical symptoms are shown in [Table/Fig 1].

GROSS FEATURES OF CERVIX

857 cervixes from the hysterectomy specimens were examined. The cervix appeared to be normal in 599 cases (69.8%) and hypertrophied in 142 cases (16.5%).

The external surface and the cut section findings are shown in [Table/Fig 2 and 3].

DISCUSSION

Cervixes, either from hysterectomies or biopsies continue to form the major bulk of gynaecological specimens which are received in the histopathology department even after the incidence of carcinoma cervix has declined in the industrialized countries [3].

A closer study of the pathology of the uterine cervix reveals a number of non-neoplastic lesions of local origin, which are of great importance to the clinician and the pathologist. The diagnosis of these lesions have been grossly neglected [4, 5].

On the basis of this, the present study was undertaken to identify the various non-neoplastic histomorphological features of the uterine cervix.

THE GROSS PATHOLOGY OF THE CERVIX IN THE HYSTERECTOMY SPECIMENS

As such, the hysterectomy specimens which are associated with the non-neoplastic lesions of the cervix do not exhibit any major morphological variations [3, 4].

In the present study, the cervix looked predominantly unremarkable on the external surface (599 cases, 70%), while epidermidisation was noted in 100 cases (11.66%). An ulceroproliferative growth which could simulate malignancy was the morbid anatomy which was noted in a single case of cervical tuberculosis. On cut section, a majority of the cervixes appeared to be unremarkable ie, 352 cases (41%) while NF cysts were seen in 283 cervixes (33%).

MICROSCOPY OF THE NON-NEOPLASTIC LESIONS OF THE CERVIX

Please refer to [Table/Fig-4] for the details on the epithelial changes in the cervix.

Cervicitis

Inflammation of the cervix was found in all the 1015 non-neoplastic cervixes which were included in the study which was similar to the observations which were made by other authors like Howard et al (98% of 400 specimens) and Howkins and Bourne (80%).[6]

Cut Section	Number	Percentage
Unremarkable	352	34.67%
NF cyst	283	27.88%
Polyps	9	0.88%
Erosion	267	26.30%

[Table/Fig-1]: Gross features of cervix on cut section

External Surface	Number	Percentage
Normal Cervix	599	69.8%
Hypertrophied and elongated	142	16.5%
Epidermidised	100	11.6%
Ulcerated	16	1.8%
TOTAL	857	100%

[Table/Fig-2]: Gross Features Of Cervix On External Surface

Clinical Symptoms	Number	Percentage
White discharge per vagina	270	26.6%
Mass per vagina	214	21.08%
Irregular menses/excessive bleeding per vagina	300	18.0%
Pain abdomen * *	183	13%
Post coital bleeding	148	14.58%
Others *	62	6.1%
TOTAL	1015	100%

[Table/Fig-3]: Clinical Symptoms

* Others Included Ruptured Uterus, Chronic Back Pain Due To Pid Etc.,

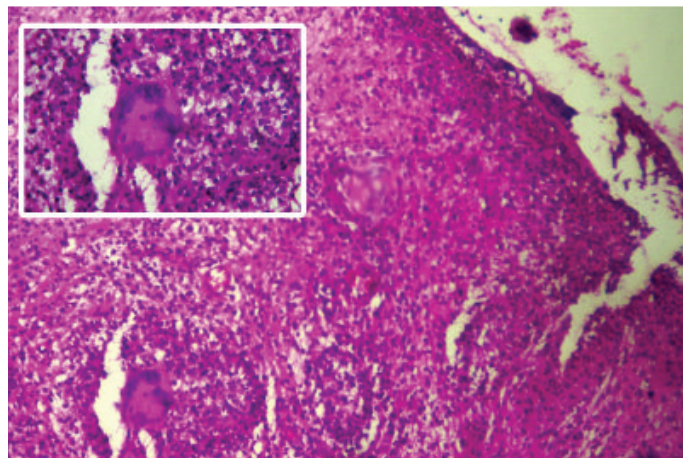
** Pain Abdomen Due To Fibroid Uterus, Or Ovarian Cysts.

Squamous Metaplasia

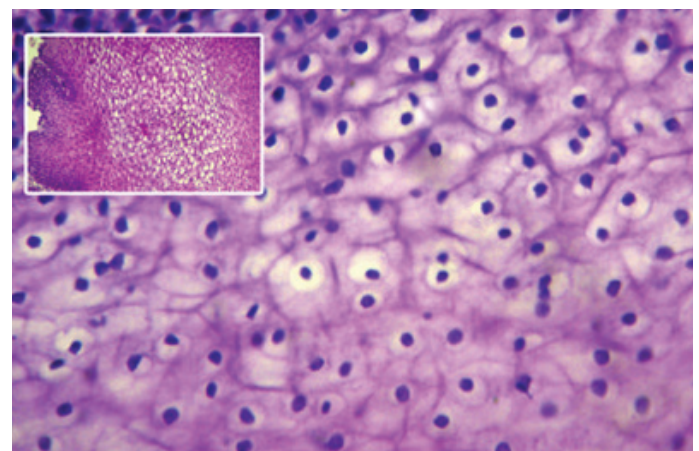
Squamous metaplasia is as such a physiological change which is seen in the cervix through puberty, the reproductive years and menopause and hence, it is a very common finding on microscopy

Sl. No.	Endocervical changes	No.	Percentage among non-neoplastic cervix
1	Polypoidal endocervicitis	297	29.26%
2	Squamous metaplasia	744	73.30%
3	NF Cysts	295	29.06%
4	MEH	27	2.6%
5	Tunnel clusters	25	2.46%
6	Mesonephric rests	12	1.18%
	Ectocervical changes	No.	Percentage
7	Hyperplasia	488	48.07%
8	Koilocytosis	39	3.84%
9	Exocytosis	36	3.54%
10	Supra basal bulla	2	0.19%
11	Changes in prolapse	214	21.08%
	Others	No.	Percentage
12	Polyps	19	1.87%
13	Pregnancy changes	1	0.098%

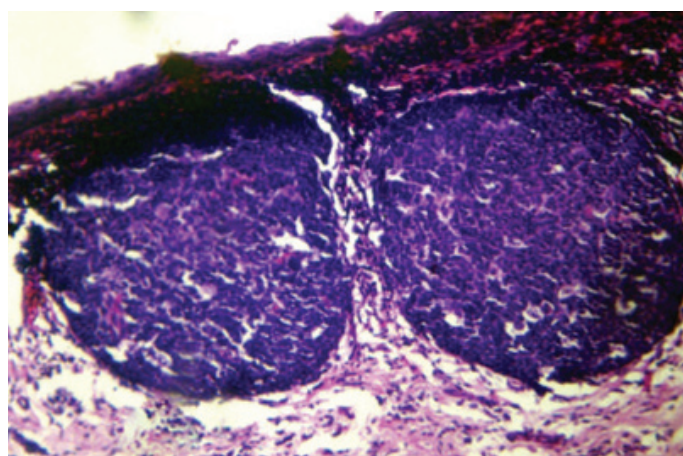
[Table/Fig-4]: The various Epithelial changes encountered in the cervix



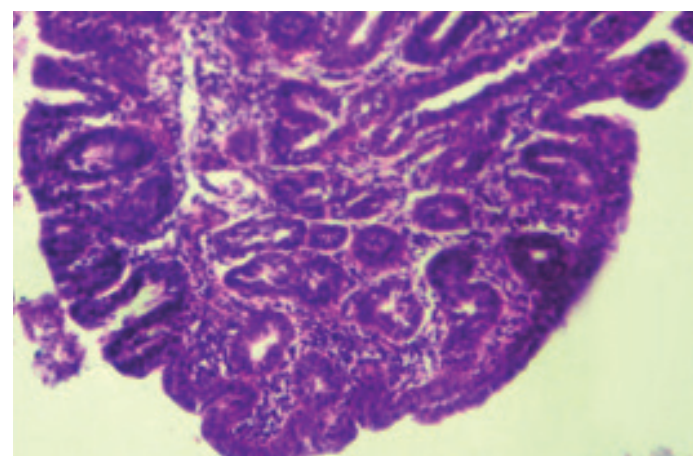
[Table/Fig-5]: Tuberculous cervicitis . Inset - langhans giant cell



[Table/Fig-6]: Koilocytosis (40x) inset -Koilocytosis (10x)



[Table/Fig-7]: Follicular cervicitis- high power



[Table/Fig-8]: Microglandular hyperplasia

[3,4,7,8]. In the present study, a majority of the cervixes (73.20%) showed squamous metaplasia, which was in correlation with the studies of Prathima KM (1998) and Bhattacharya S et al (1996) [9,10]. An abrupt transition between immature and mature squamous metaplasia is known. It is important to recognize this entity histopathologically and hence avoid an over diagnosis of CIN. [6, 9, 11]

RARE ENDOCERVICAL CHANGES

Microglandular Endocervical Hyperplasia

Microglandular hyperplasia was a less common finding which was present in only 2.6% of the 1015 non-neoplastic cervixes. None of these patients gave a history of oral contraceptive use. A majority of the patients who were diagnosed with MEH were in the 4th decade of life (55.5%), with a mean age incidence of 37 years. Nichols et al (1971) observed 31 cases of MEH (24%), of which more than half the patients had given a history of the use of oral contraceptives. However, in contrast, another study which was done by Chumas et al, who evaluated cervixes over a period of 3.5 years and found 43 cases of MEH, reported that more than half of the patients had no history of the use of oral contraceptives [12,17]

Tunnel Clusters

Twenty five cases (2.7%) of tunnel clusters were identified in the present study and most of them i.e., 24 (96%) belonged to type B i.e. cystic tunnel clusters and only one case (4%) was of type A i.e. non cystic. Most commonly, tunnel clusters are confused with minimal deviation adenocarcinomas. All the tunnel clusters were

incidental findings in cervixes which were removed for unrelated causes, as observed by Fluhman et al [3, 8, 13].

CHANGES IN THE ECTOCERVICAL EPITHELIUM

Koilocytosis

This is considered as the histological hallmark of the papilloma virus infection [6,13,14]. Koilocytosis was diagnosed in only 39 cases (3.84%) among all the cervical specimens during the study period which is in correlation with the findings of Prathima KM (1998) and Ramdas Naik et al as shown below [13, 15].

It is important to not confuse the normal basket weave hyperkeratosis with koilocytosis, as the diagnosis of koilocytosis has important therapeutic implications on the patient [3, 4]. Many studies have also proven that HPV infection (koilocytosis) in association with HIV infection and lower CD4 counts have predisposed to cervical intraepithelial carcinoma and malignancy [19]. Hence, the positive identification of koilocytosis goes a long way in preventing malignancies in such HIV positive patients.

Changes of the cervix with prolapse of the uterus :Uterine prolapse was the second most common cause for hysterectomy after WDPV i.e. in 214 patients (21.08%).The most common microscopic changes which were noted in cervixes with uterine prolapse were hyperplasia without hyperkeratosis and parakeratosis (47%) and hyperplasia with hyperkeratosis and parakeratosis (45%). Decubitus ulcer was noted only in a minority of patients with genital prolapse i.e. in 19 cases (8.8%). The cause for these changes is postulated to be chronic irritation. However, there is neither any morphological nor clinical indication that either of the above changes are precursor lesions of cervical neoplasia [16].

Cervical Polyps

Non neoplastic cervical polyps were a rare entity, constituting only 19 (1.87%) of the total cervical specimens which were studied. Almost an equal number of these were isolated from the cervical biopsies (10 cases, 52.63%) and the hysterectomy specimens (9 cases, 47.37%). In an independent study, cervical polyps were removed from 988 women. Each case of polyps was considered as a separate episode. The recurrence rate was 15%. All polyps were benign except two (0.2%) symptomatic polyps which showed high grade cervical intraepithelial neoplasia [18].

RARE ECTOCERVICAL CHANGES

Follicular cervicitis was observed in 14 cases, out of which 8 cases were in the 4th decade of life. Tuberculosis of the female genital tract, other than maternal causes, is a leading cause of death among women [20].

Tuberculous cervicitis was encountered in only one patient (0.09%), in whom a provisional clinical diagnosis of carcinoma of the cervix was made.

The transepithelial migration of leucocytes into the squamous epithelium was seen in 36 cases (3.5%). All these cases were associated with a severe degree of chronic cervicitis.

Suprabasal bulla with acantholytic squamous cells was a rare lesion which was seen in only 2 cases (19%). Both of these were associated with severe chronic cervicitis.

3 cases with prominent melanocytes in the basal layer were encountered in patients who were in the in the 5th decade of life.

Decidualisation (pregnancy changes) of the uterine cervix was noted in only one case of a 21 year old nulliparous woman.

CONCLUSION

During the course of this study, a number of non-neoplastic lesions of the cervix were encountered. These lesions were significant enough in their clinical presentations, as they caused a considerable amount of morbidity and loss of work hours, which was thus a financial burden.

Histopathology is considered as a gold standard in diagnosing the lesions of the cervix. However, there are many lesions that are mistakenly over diagnosed to be neoplastic. Therefore, it is recommended to take up further studies to evaluate these non-neoplastic lesions of the uterine cervix on a community basis.

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