

Original Research Article

A Morphological spectrum of benign lesions of the uterine cervix at a tertiary care hospital in Tamilnadu

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Abstract: Uterine cervix usually constitutes the majority of specimens received at histopathology section in department of pathology. A variety of rare but interesting lesions may occur in the cervix and create problems in diagnosis. Difficulties in distinction from well-differentiated adenocarcinoma can result in potentially major adverse consequences for the patient in the form of inappropriate therapy. Such, detailed histomorphological study of the non neoplastic lesions of the cervix are helpful in this regard. The study included 833 specimens of uterine cervix obtained either in the form of biopsies or hysterectomy specimens. These cervixes were subjected to detailed gross and microscopic examination and were further classified into various non-neoplastic lesions. A total of 16 types of benign lesions were encountered in the study. Chronic cervicitis (non specific) is the most frequently occurring lesion, seen in 678 (81.39%) cases, least common are decidual change in 1 (0.12%) , endometriosis in 1 (0.12%) , and tuberculosis in 1 (0.12%) . During the study, a number of non-neoplastic lesions of the cervix were encountered, which caused a great deal of morbidity to the patients. This study is an attempt to study these more common but less frequently published lesions.

Keywords: uterine cervix, benign lesion, histomorphological, chronic cervicitis, morbidity, inappropriate therapy.

INTRODUCTION

Gynecological specimens from the major proportion of the workload in most of the histopathology departments. Non neoplastic lesions of the cervix form a major part of the diagnosis in histopathology departments. A wide variety of non-neoplastic lesions occur in the uterine cervix, the most important being inflammation, hyperplasia, dysplasia and heterotopias. Chronic cervicitis, an extremely common condition in adult females is of importance because it may lead to ascending infection [1].

Viral infections in the cervix may result in stimulated mitotic activity, which sometimes leads to overt neoplasia [2]. A variety of pseudoneoplastic lesions may occur in the cervix and create problems in differential diagnosis, specifically with regard to their distinction from well-differentiated adenocarcinoma, resulting in potentially major adverse consequences for the patient in the form of inappropriate therapy [3, 4].

Histopathological examination is the gold standard for the diagnosis of the nonneoplastic lesions of the cervix. And hence the study is undertaken.

MATERIALS AND METHODS:

The present study is a cross sectional study done using histopathology and medical records of 2 years (January 2014 to December 2015) in the department of Pathology, Dhanalakshmi Srinivasan Medical College & Hospital, Siruvachur, Perambalur, Tamilnadu.

The study included 833 specimens of uterine cervix obtained either in the form of biopsies or hysterectomy specimens. All inadequate biopsy specimens and in-situ and invasive malignant lesions of uterine cervix were excluded from the study. A detailed clinical examination including age, parity, clinical findings and provisional diagnosis were collected from the Medical records department.

All the specimens received at histopathology section were fixed in 10% formalin. The macroscopic findings of the hysterectomy specimens were examined and recorded, followed by fixation in 10% formalin for 24 hours. The hysterectomy specimen was later sampled carefully and tissue pieces were processed. The entire tissue piece of the biopsy specimen was submitted for processing. After routine processing, sections were cut at 4-6 μ thickness and stained

routinely using Hematoxylin and Eosin stain [5]. These stained sections were analyzed by light microscopy. Ziehl Neelsen stain was performed wherever required.

RESULTS:

A total of 16 types of benign lesions were encountered in study (Table1). In the present study

chronic cervicitis (non specific) is the most frequently occurring lesion, seen in 678 (81.39%) cases, least common are decidual change in 1 (0.12%), endometriosis in 1 (0.12%), and tuberculosis in 1 (0.12%).

Table1. Showing different Benign Lesions of Uterine Cervix encountered in the present study

S.No	LESIONS	No. of cases	Frequency (%)
1	Mesonephric remnants	3	0.36%
2	Decidual change	1	0.12%
3	Tubo-endometrial metaplasia	81	9.7%
4	Endometriosis	1	0.12%
5	Chronic cervicitis (non specific)	678	81.39%
6	Koilocytic change (Subclinical papilloma virus infection)	38	4.56%
7	Tuberculosis	1	0.12%
8	Follicular cervicitis	48	5.76%
9	Micro glandular hyperplasia	12	1.44%
10	Tunnel clusters	20	2.40%
11	Diffuse laminar end cervical glandular hyperplasia	7	0.84%
12	Florid deep glands	4	0.48%
13	Leiomyoma	12	1.44%
14	Mild dysplasia	7	0.84%
15	Moderate dysplasia	5	0.60%
16	End cervical glandular dysplasia	3	0.36%
	Total	833	

Age wise distribution of benign lesions of uterine cervix encountered in the present study show highest number of cases of 382 in the age group of 40-49 years, followed by, 310 in 30-39, 117 in 50-59, 62 in 20-29, 43 in 60-69, and 7 in 70-79 (table2).

Table 2: Age wise distribution of benign lesions of uterine cervix

Age range (yrs)	No. of cases
20-29	62
30-39	310
40-49	382
50-59	117
60-69	43
70-79	7

Excessive vaginal bleeding is the most common presenting complaint seen in 346 cases, least common are dribbling of urine in 1, amenorrhea in 1, and post menopausal bleeding in 1 (table3).

Table 3: Presenting complaints of the cases studied

Presentation	No. of cases
Excessive vaginal bleeding	346
Mass per vagina	271
Pain abdomen	169
White discharge per vagina	152
Pain during menstruation	62
Irregular vaginal bleeding	39
Mass per abdomen	35
Burning micturition	21
Retention of urine	20
Low back pain	8
Constipation	7
Pain during coitus	4
Post coital bleeding	2
Fever	2
Dribbling of urine	1
Amenorrhea	1
Post menopausal bleeding	1

**DISCUSSION:
MESONEPHRIC REMNANTS**

Estimates of the frequency of persistence of mesonephric duct remnants in the uterine cervix of adults have ranged from less than 1% to 22% [6]. Frequency of persistence of mesonephric duct remnants in the present study is 0.36 %. All the three lesions of mesonephric remnants observed in the present study show, tubules lined by single layer of cuboidal cells and pink hyaline material in the lumen. Study by Judith A and R E Scully [6] showed similar feature except for the additional finding of presence of central duct in three of their cases.

DECIDUAL CHANGE

In the present study only one case of decidual change was observed in a 24-year-old woman. Microscopic features were similar in both the present study and the study done by R G Bausch *et al.*; [7] and showed sub epithelial sheets of large polygonal cells having basophilic, finely granular cytoplasm and small round nucleus.

TUBO-ENDOMETRIAL METAPLASIA

Frequency of occurrence of tubo-endometrial metaplasia was 9.7% in the present study, and 23.0 in A. Al-Nafussi and M Rahilly [8] study.

Microscopic features were similar in the present study and in study by A. Al-Nafussi and showed normal architecture of endocervical glands. Glands were lined by low columnar to cuboidal epithelium. Luminal border showed ciliation, usually focally. Cytoplasm-lack mucin secretion and nuclei were oval showing minimal pseudo stratification.

ENDOMETRIOSIS

Only one case of endometriosis of uterine cervix was encountered in the present study in a 42-year-old woman.

Frequency of endometriosis of uterine cervix in the present study was 0.12% and it was 43.0 in a study by S M Ismail on 42 post-conization hysterectomies. High frequency in a study by S M Ismail [9] can be attributed to conization as the cervical endometriosis and tubo-endometrial metaplasia are common complications of conization.

Microscopic features were similar in both present and S M Ismail study and showed endocervical glands lined by columnar epithelium. Cells show high N: C ratio and cytoplasm lack mucin. The stromal cells are densely packed and resemble those of an endometrium with round-oval-spindle shaped nuclei and moderate cytoplasm.

KOILOCYTIC CHANGE (SUBCLINICAL PAPILOMA VIRUS INFECTION)

Table4. Comparison of frequency of occurrence of koilocytic change (subclinical papilloma virus infection)

Study (no. of cases)	Frequency (%)
Present study (n=833)	4.56
Christopher P C <i>et al.</i> ; (1983) (n=400)	4.00

Frequency of occurrence of subclinical papilloma virus infection was 4.56% in the present study and 4.0 in a study by Christopher P C *et al.*; [10] (Table 4).

Microscopic features noted in the present study were koilocytic change, individual cell keratinisation, and occasional multinucleation. Christopher P C *et al.*; considered few additional features in their study like-parabasal cell hyperplasia, minimal basal and parabasal cell atypia and nuclear enlargement.

TUBERCULOSIS

In the present study only one case of tuberculosis of uterine cervix was noted in a 35-year-old HIV positive woman.

In the present study presenting complaint of patient who had an obstetric history of P3 (Para 3) was pain abdomen, whereas in F Nogales-Ortiz *et al.*; [11] study all the patients presented with either primary (94%) or secondary (6%) infertility.

In the present study frequency of occurrence of tuberculosis of uterine cervix was 0.12%. In a study by F Nogales-Ortiz *et al.*; 10 cases of tuberculosis of uterine cervix were encountered out of 1436 cases of female genital tuberculosis.

Microscopic features were similar in both the present and F Nogales-Ortiz *et al.*; study and showed epithelioid cell granulomas-central langhans giant cells, surrounded by epithelioid cells and lymphocytes. In the present study sections from uterine cervix were negative for acid-fast bacilli but positive in sections from endometrium. In a study by F Nogales-Ortiz *et al.*; acid-fast bacilli were demonstrated in less than 2% of the lesions of genital tuberculosis.

FOLLICULAR CERVICITIS

Table 5: Comparison of frequency of occurrence of lymphoid follicles in the cervix

Study (no. of cases)	GERMINAL CENTERS	
	No. of cases	Frequency (%)
Present study (n=833)	23	2.76
Roberts and Ng (1975) (n=450)	-	2.4
M J Hare <i>et al.</i> ; (1981) (n=34)	10	29.4

Frequency of occurrence of lymphoid follicles was 2.76% in the present study, 2.4 in Roberts and Ng study and 29.4 in a study by M J Hare *et al.*; on sexual partners of men with non-gonococcal urethritis [12] (Table 5).

Microscopic features were similar in both the present and a Nancy B K *et al.*; [13] study and showed lymphoid follicles with predominant plasma cell infiltrate or the dense plasma cell infiltrate alone with few lymphocytes.

MICROGLANDULAR HYPERPLASIA

Micro glandular hyperplasia is observed in 12 cases out of 833 cases studied with a frequency of 1.44%. Microscopic features were similar in the present, John CC *et al.*; [14] and R H Young and R E Scully's study [15] and showed superficial tightly packed glands, lined by low columnar to cuboidal epithelium and sub nuclear vacuolation were often present. R H Young and R E Scully noted few atypical findings in their study like- solid sheet like proliferation of cells, pseudo infiltrative pattern, abundant stromal hyalinization, signet ring cells, hobnail cells and presence of moderate degree of nuclear atypicity.

TUNNEL CLUSTERS

Twenty cases of tunnel clusters are noted out of 833 cases of benign lesions of uterine cervix studied. Frequency of occurrence of tunnel clusters was 2.4% in the present study and 5.9 in a study by G H Segal and W R Hart [16].

Microscopic features noted in the present study were presence of lobular proliferation of glands appearing as closely packed tunnels with a small amount of intervening stroma. Tunnels were lined by cuboidal to columnar mucinous cells. G H Segal and W R Hart noted similar features, but have described proliferation of predominantly dilated tubular endocervical glands.

DIFFUSE LAMINAR ENDOCERVICAL GLANDULAR HYPERPLASIA

Seven cases of diffuse laminar endocervical glandular hyperplasia are encountered in the study with a frequency of 0.84%.

Microscopic features noted in the present study were diffuse proliferation of well-differentiated endocervical glands limited to inner third of cervical wall, sharply demarcated from the underlying cervical stroma. Glands were lined by bland, mucin containing columnar epithelium. M A Jones and R H Young [3] noted similar findings in their study.

FLORID DEEP GLANDS

Four cases of florid deep glands of the uterine cervix were noted in the present study with a frequency of 0.48%.

In the present study microscopy showed florid proliferation of endocervical glands deeply infiltrating the underlying stroma. The glands extended into the endocervical stroma to a depth of more than 9mm and were lined by a single layer of columnar mucinous epithelium. D Daya and R H Young [4] noted similar findings in their study.

LEIOMYOMA

Twelve cases of cervical leiomyoma were encountered out of 833 cases studied with frequency of 1.44%. The frequency of occurrence of cervical leiomyoma was 1.44% in the present study and 0.6% in a study by Tiltman A J [2]. Microscopy showed bundles of spindle cells arranged in fascicles and whorls. Cells have oval nucleus and long, slender bipolar cytoplasmic processes.

MILD SQUAMOUS DYSPLASIA (CIN 1)

Mild dysplasia is observed in 7 cases out of 833 cases studied with a frequency of 0.84%. In the present study microscopy showed squamous differentiation confined to the upper two thirds of stratified squamous epithelium, with lower third showing high N: C ratio, nuclear pleomorphism, hyperchromasia and occasional mitosis. C Bergeron *et al.*; [17] noted similar findings in their study.

MODERATE SQUAMOUS DYSPLASIA

Moderate dysplasia was noted in 5 cases out of 833 cases studied with a frequency of 0.60%. In the present study microscopy showed differentiation confined to upper half of stratified squamous epithelium, with lower half showing high N: C ratio, nuclear pleomorphism, hyperchromasia and occasional mitosis. M G Weaver *et al* [18] noted similar feature in their study.

ENDOCERVICAL GLANDULAR DYSPLASIA

Endocervical glandular dysplasia was observed in 3 cases out of 833 cases studied with a frequency of 0.36%.

Table 6: Comparison of frequency of occurrence of endocervical glandular dysplasia

Study (no. of cases)	Frequency (%)
Present study (n=3)	0.36
M Wells and L J R Brown (1986) (n=105)	15.00
N S Goldstein <i>et al.</i> ; (1998) (n=221)	1.80

In the present study frequency of occurrence of endocervical glandular dysplasia was 0.36%, and was 15% in study by M Wells and L J R Brown [19] on 105 cases with cervical intra-epithelial neoplasia, and 1.8% in an N S Goldstein *et al.*; study [20] (Table 6).

In the present study microscopy showed endocervical glands with normal architecture lined by cells showing high N: C ratio and nuclear atypia. Cytoplasm lacked mucin. M Wells and L J R Brown and N S Goldstein *et al.*; noted similar finding in their study.

CONCLUSIONS:

This is an attempt to know more about the benign lesions of the uterine cervix. Cervicitis can be of specific etiology, like koilocytosis and follicular cervicitis. Importance of these benign lesions of the Cervix Uteri lies in the fact that Chlamydial infection has specific therapy and Papilloma virus infection may progress to malignancy. Familiarity with interesting lesions like Microglandular hyperplasias, florid deep glands and tunnel clusters goes long way in avoiding inappropriate therapy.

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