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Pathology

Clinico-Histomorphological Spectrum of Non-Neoplastic Lesions of the Uterine Cervix at a Tertiary Care Center of a Remote Indian Island

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Abstract **Original Research Article**

The uterine cervix is liable to suffer from several neoplastic and non-neoplastic gynaecologic lesions commonly seen in sexually active women. It is important to categorize and recognize the histomorphological features of cervical non-neoplastic lesions for better management of the patient. The present study was undertaken to study the microscopic features of the uterine cervix in non-neoplastic lesions**.** It was a retrospective cross-sectional study conducted over a period of two years in Department of Pathology. The study included 282 specimens of uterine cervix received at histopathology section. Detailed clinical details including age, parity, clinical findings and provisional diagnosis were noted. Out of these 282 specimens, 27.3% (77/282) were from cervical biopsy either endocervical curettage or punch biopsy, and 72.7% (205/282) were hysterectomy specimen. Most common clinical symptoms was irregular/excessive menses (44.68%, 126/282) followed by white discharge per vaginum (34.4%, 97/282). Out of 282 of the cases, 80.5% (227/282) showed chronic non-specific cervicitis (CNSC) followed by endocervical polyp (33/282, 11.7%) followed by squamous metaplasia (21/282, 7.4%). Koilocytic change was seen in 3.2% of cases (9/282). One case each for granulomatous cervicitis, microglandular hyperplasia, tunnel cluster, and condyloma acuminata was also noted**.** CNSC is the most common inflammatory lesion followed by endocervical polyp and squamous metaplasia. Prevalence of HPV related koilocytosis and condylomata acuminata is low in the study area as compared to other parts of India.

Keywords: Chronic cervicitis; Koilocytosis; Human papilloma virus; Condylomata acuminate.

INTRODUCTION

The uterine cervix is liable to suffer from several neoplastic and non-neoplastic gynaecologic lesions commonly seen in sexually active women [1]. In the hysterectomy or cervical biopsy specimens, majority of cases are of infective or noninfective inflammatory non-neoplastic cervical lesions [1-3]. The chronic cervicitis, a commonest diagnosis at least at microscopy may suggest the more duration of the symptoms rather than nature of lesion and is difficult for the gynaecologist to correlate with clinical diagnosis [1-3]. However chronic cervicitis may lead to pelvic inflammatory disease, endometritis, salpingitis, pregnancy related complications such as chorioamnionitis and may also be responsible for initiation or promotion of cervical neoplasia [1]. The viral infections of cervix may cause cell degeneration and death and sometimes leads to neoplasia [2]. The other non-neoplastic cervical lesions such as microglandular endocervical hyperplasia, tunnel clusters, and endometriosis and mesonephric hyperplasia sometimes may be misinterpreted as malignant [1]. Thus misinterpretation may lead to inappropriate management and causing potentially adverse consequences for the patient [1, 3]. It is important to categorize and recognize the histomorphologic features of cervical non-neoplastic lesions in progress towards better management of the patients [1-3]. The present study was undertaken in to study the microscopic features of the uterine cervix in non-neoplastic lesions.

MATERIAL AND METHODS

The present retrospective cross-sectional study was conducted over a period of two years in the Department of Pathology. The study included 282 specimens of uterine cervix received at histopathology section either in the form of biopsies or hysterectomy specimens done for any gynaecological disorder in patients age >18 years. All inadequate, dysplastic,

carcinoma in-situ (CIN) and malignant neoplasm of uterine cervix biopsy specimens were excluded from the study. Detailed clinical details including age, parity, clinical findings and provisional diagnosis were noted from the histopathology requisition forms received from the Gynaecology Department.

All the specimens were fixed 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. Sections were cut at 3-5µ thickness after tissue processing and stained routinely using Haematoxylin and Eosin stain. Ziehl Neelsen stain and Periodic Acid-Schiff stain was performed wherever required. The percentage of individual lesion and associated lesions were calculated.

RESULTS

A total of 282 non-neoplastic lesions from cervical specimen either from hysterectomy or cervical biopsy were included in this study. Out of these 282 specimens, 27.3% (77/282) were from cervical biopsy either endocervical curettage or punch biopsy, and 72.7% (205/282) were hysterectomy specimen.

The age of patient was ranges from 22-70 years. The majority of the patients were from 5th decade (38.65%, 109/282) followed by 4th decade (28.37%, 80/282). Multiparty was seen in 84% of cases.

Clinically some of the patients were presented with more than one symptom. However the most common clinical symptom was irregular/excessive menses (44.68%, 126/282) followed by white discharge per vaginum (34.4%, 97/282) and mass per vaginum (20.92%, 59/282) (Table 1).

Table-1: Clinical Spectrum of the Cases

Clinical Symptoms	Number	Percentage (out of 282 cases)
Irregular/excessive menses	126	44.68
White discharge per vagina	97	34.4
Mass per vagina	59	20.92
Bleeding per vagina	47	16.67
Pain abdomen	45	15.96
Post coital bleeding	15	5.32
Others	14	4.96

In hysterectomy specimens, the cervix appeared normal in 80.98% (166/205), hypertrophied in 10.24% (21/205) and epidermidized in 8.78% (18/205). On cutting, cut surface was unremarkable in 74.63% (153/205), nabothian cysts were seen in 20.49% (42/205) cases and polyp were seen in 4.88% (10/205) (Table 2).

Table-2: Gross Appearance of Hysterectomy Specimens

Gross Feature	No. of Cases (n=205)	Percentage
EXTERNAL SURFACE		
Normal	166	80.98%
Hypertrophied	21	10.24%
Epidermidised	18	8.78%
TOTAL	205	100
CUT SURFACE		
Unremarkable	153	74.63%
Nabothian cyst	42	20.49%
Polyp	10	4.88%
TOTAL	205	100

Out of 282 of the cases, 80.5% (227/282) showed chronic non-specific cervicitis (CNSC) followed by endocervical polyp (33/282, 11.7%) followed by squamous metaplasia (21/282, 7.4%) (Figure 1A). Papillary and acute on chronic endocervicitis constituted 4.6% (13/282) (Figure 1B) and 2.1% (6/282) (Figure 1C) of cases respectively.

Koilocytic change was seen in 3.2% of cases (9/282) (Figure 1D). There were 2.8% (8/282) cases and 1.4% (4/282) of leiomyomatous polyp (Figure 1E) and ectocervical polyp (Figure 1F) respectively.

One case each for granulomatous cervicitis (Figure 2A and 2B), microglandular hyperplasia, tunnel cluster (Figure 2C), and condyloma acuminata (Figure 2D) was also noted (Table 3).

Table-3: Spectrum of Non-Neoplastic Cervical Lesions

LESION	TOTAL	Percentage (out of 282 samples)
CNSC	227	80.5
Endocervical Polyp	33	11.7
Squamous metaplasia	21	7.4
Papillary endocervicitis	13	4.6
Koilocytosis	09	3.2
Leiomyomatous Polyp	08	2.8
Acute on chronic endocervicitis	06	2.1
Ectocervical polyp	04	1.4
Granulomatous cervicitis	01	0.4
Microglandular hyperplasia	01	0.4
Tunnel Cluster	01	0.4
Condyloma acuminata	01	0.4

In 227 cases of CNSC, 75 cases were associated with other histopathological change such as nabothian cyst, squamous metaplasia, endocervical polyp, and tunnel cluster (Table 4).

Table-4: Lesions associated with CNSC

Associated lesions	Total (n=227)	Percentage
No Associated lesion	152	66.96
Squamous metaplasia	18	7.93
Endocervical Polyp	11	4.85
Leiomyomatous Polyp	3	1.32
Tunnel Cluster	1	0.44
Nabothian Cyst	42	18.5

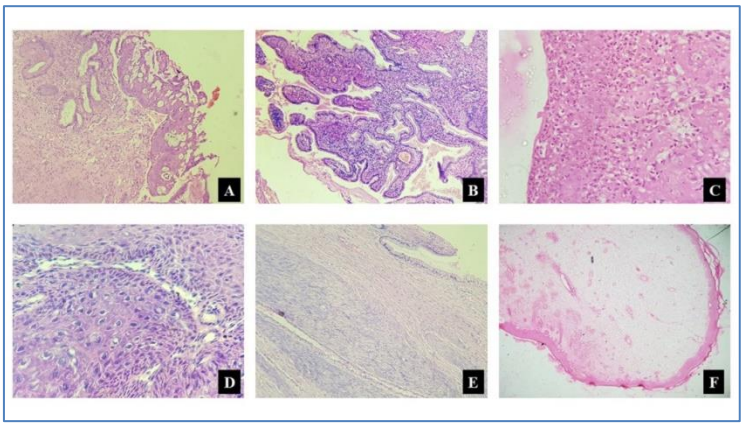

Fig-1

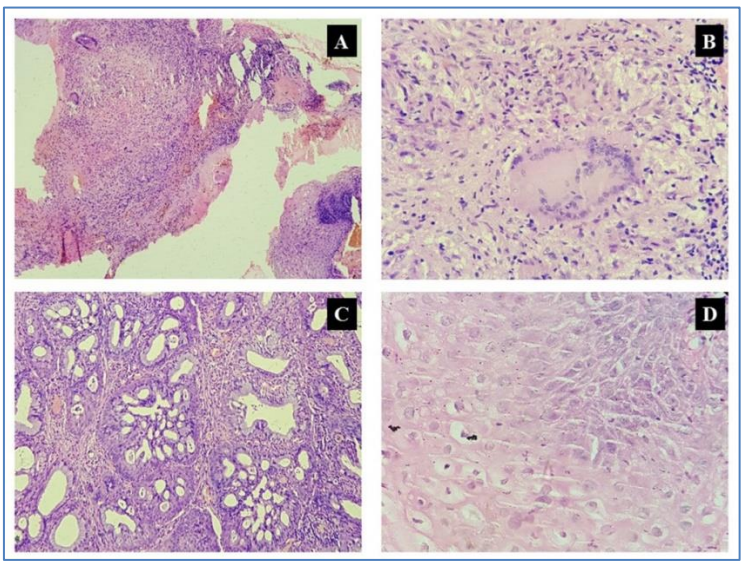

Fig-2

DISCUSSION

The non-neoplastic lesions of the uterine cervix constitute the main bulk of gynaecology specimen in pathology department [1,4]. Histopathology is the best diagnostic tool to diagnose varieties of non-neoplastic lesion [4]. The peak age of non-neoplastic lesions of cervix is 40-49 years as similarly observed in the present study [4-6]. The external surfaces of the cervix in non-neoplastic hysterectomy specimens are predominantly do not manifest any major morphological changes [4]. In the present study, 80.97% of the cervix in hysterectomy specimens appeared to be normal.

CNSC is the most common inflammatory lesion varying form 72.2% to 89.23% [1-6]. The CNSC occur either through urinary tract infection or sexually transmitted disease [4]. In the present study, 80.5% cases were showed features of CNSC.

The squamous metaplasia is common microscopic findings occur as a physiological change seen throughout the life after puberty. It is important to recognize and to avoid an over diagnosis of CIN [3]. In the present study, squamous metaplasia was seen in 7.4% cases.

Cervical polyps are outgrowth arise either from endocervix (endocervical polyps) or from ectocervix (cervical polyps) seen in 4-10% cases of all cervical lesions [7]. They commonly affect perimenopausal multigravida female between 30 to 50 years of age. They are most commonly asymptomatic [7]. In the present study, 11.7% endocervical and 1.4% of ectocervical polyp's cases was seen.

Cervical leiomyoma is usually solitary arises from the cervical muscular tissue measuring 0.5–1 cm in size [8]. It affects females of all age group but commonly seen in female under 30 years of age [8]. The mostly cervical leiomyomas actually arise from the isthmus of the uterus [8]. In the present study, 2.8% cases of cervical leiomyoma were seen.

Microglandular hyperplasia is an uncommon finding found in the fourth decade of life [3]. Its association with oral contraceptives is debated with contrasting reports from different studies [3]. Tunnel clusters are incidental findings in cervices and are of two types: Type a (non-cystic) and Type B (cystic) [3]. In the present study, only one case each of microglandular hyperplasia with no history of hormonal intake and type a tunnel cluster was found.

Koilocytosis is considered as the pathognomonic hallmark of subclinical papilloma virus infection and the prevalence of HPV cervicitis is varies from 3.75% to 26.3% [2, 4]. As compared to the prevalence of high-risk HPV infection among population of India which is 5%-15%, the females of the Andaman and Nicobar Islands had prevalence of high-risk HPV infection is 3.6% [8]. In the present study, 3.2% cases showed koilocytic change.

The condylomata acuminata of the cervix are not common and they are frequently associated with human papilloma virus types 6 and type 11 infections. The histologically cervical condyloma shows hyperkeratosis, parakeratosis, acanthosis, koilocytotic atypia and papillomatosis with each papillary frond has fibrovascular core [9]. One case of cervical condylomata acuminata was also seen in the present study.

The chronic granulomatous cervicitis probably due to tuberculosis is commonly seen in tropical areas. However the cervical tuberculosis accounts only 0.1 to 0.6% cases in worldwide population. In this study only one case of chronic granulomatous cervicitis is reported which was proven to be of tubercular etiology on polymerase chain reaction.

CONCLUSION

CNSC is the most common inflammatory lesion followed by endocervical polyp and squamous metaplasia. Prevalence of HPV related koilocytosis and condyloma acuminata is low in the study area as compared to other parts of India. However, community based studies with larger cohort and microbiological correlation is recommended to arrive at a definite conclusion.

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