



Original Research Article

Histopathological study of cervix in hysterectomy specimen

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ABSTRACT

Aims & Objective: The aim of the study was to analyze and classify various cervical lesions on histopathology and to correlate histopathological findings with the clinical presentation of patients.

Materials and Methods: The 150 hysterectomy specimen with whole cervix sent for histopathological examination. These cases were assessed for histopathological examination in cervix. The clinical and histopathological data of the patients were collected for analysis of associated factors.

Result & Conclusion: Among all cervical lesions, cervical inflammatory lesions are the most common cervical lesions on histopathology, followed by malignant lesions. Among inflammatory lesions, nonspecific chronic cervicitis was commonly found followed by papillary endocervicitis seen in sexually active females with pelvic inflammatory disease, dysfunctional uterine bleeding, uterine prolapsed and so on. Histopathology is considered as a gold standard in diagnosing the lesions of the cervix.

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1. Introduction

The cervix is a cylindrical shaped neck of tissue that connects the vagina and uterus, located at the lower most portion of the uterus and is composed primarily of fibromuscular tissue.¹ The development of female genital track is closely influenced by chromosome XY and XX¹ and cervix is developed from fused lower vertical parts of the two paramesonephric ducts.² The uterus and cervix being a vital reproductive and hormone-responsive organ, is subjected to a variety of physiological changes and benign and malignant disorders.³ Uterine cervix acts as a “gateway” of various infections, which affects cervix, uterus and upper genital tract, thus working under various pathological conditions leading to various lesions of cervix as well as a sentinel for upper genital tract infections.⁴ Hysterectomy is the most common major Gynaecological procedure in the world. It can be done through either abdominal or vaginal route.³ Cervical specimens like biopsies and sections of cervix from

hysterectomy specimens form a significant part of surgical specimens in any histopathology laboratory. Among all cervical lesions, cervical inflammatory lesions are the most common cervical lesions on histopathology, followed by benign and malignant lesions.⁵ The organisms most commonly responsible for active inflammation in the cervix are *Candida albicans*, *Trichomonas vaginalis*, *Neisseria gonorrhoeae*, *Gardnerella vaginalis*, herpes simplex virus (HSV), *Chlamydia trachomatis*, human papillomavirus (HPV) and cytomegalovirus (CMV).^{6,7} Benign tumors includes Leiomyoma, Blue nevus, Squamous papilloma and Condyloma acuminatum.⁶ Microscopic types of malignant tumors includes squamous cell carcinoma and its variants (Verrucous carcinoma, Spindle cell carcinoma, Basaloid (squamous cell) carcinoma, Lymphoepithelioma-like carcinoma, Transitional cell (urothelial) carcinoma), adenocarcinoma and its variants (Endometrioid adenocarcinoma, Serous (papillary) carcinoma, Adenoma malignum, Villoglandular (papillary) adenocarcinoma, Adenosquamous (mixed) carcinoma, Glassy cell carcinoma, Mucinous carcinoma of the endocervix, Adenoid cystic carcinoma, Adenoid

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basal carcinoma, Clear cell carcinoma, Mesonephric (adeno)carcinoma), Neuroendocrine carcinoma, Botryoid rhabdomyosarcoma, Alveolar rhabdomyosarcoma, Mixed müllerian tumors, Malignant lymphomas of the cervix, Metastatic carcinomas.⁸

2. Materials and Methods

This is a study of gross and histological findings of cervix in 150 hysterectomy specimens received in pathology department, Government medical college, Bhavnagar. Gross examination was carried out on specimens. Specimens immediately transferred to 10% formalin. Tissue sections were given from anterior and posterior cervix and lesions if any. Tissue bits were routinely processed, 3 to 5 micron thick sections were made from paraffin embedded blocks and stained with H & E stain. Sections were examined with the help of light microscopy. Only resected uterus without cervix was excluded from study. The data were analysed in percentage, frequency, Chi-square test.

3. Results

Table 1: Age wise distribution of hysterectomy specimen reviewed in histopathology department

S. No.	Age group	No.	Percentage
1	20-29 years	3	02.00%
2	30-39 years	29	19.33%
3	40-49 years	71	47.33%
4	50-59 years	29	19.33%
5	60-69 years	14	09.33%
6	70-79 years	4	02.66%
7	Total	150	100%

It is evident from Table 1 that age of the patient ranged from 28-78 years and peak age for incidence for hysterectomy was 4th decade of life. Lesser number of hysterectomy specimens were received below 30 year and above 60 year of age.

Table 2: Clinical symptoms wise distribution of hysterectomy specimen

S. No.	Clinical symptoms	No.	Percentage
1	Menorrhagia	33	22.00%
2	Cyclic pelvic pain with menorrhagia	30	20.00%
3	Menorrhagia with cramps	23	15.33%
4	Bleeding per vagina	20	13.33%
5	Severe abdominal pain and per vaginal bleeding	22	14.66%
6	Mass per vagina	17	11.33%
7	Abnormal uterine bleeding	5	03.33%
8	Total	150	100%

It is evident from Table 2 that menorrhagia with or without abdominal cramps was commonest symptoms and abnormal uterine bleeding and uterine prolepse was least common clinical symptoms.

Table 3: Histopathological findings in Cervix in hysterectomy specimens

S. No.	Cervical changes	No of cases	Percentage
1.	Chronic Cervicitis	68	45.33%
2.	No remarkable pathology	24	16.00%
3.	Squamous epithelial hyperplasia	19	12.66%
4.	Chronic papillary endocervicitis	19	12.66%
5.	Chronic cervicitis with squamous hyperplasia	04	02.66%
7.	Chronic cervicitis with squamous metaplasia	03	02.00%
8.	Squamous metaplasia	03	02.00%
9.	chronic endocervicitis with reactive hyperplasia	01	0.66%
10.	Hyperkeratosis of cervical squamous lining	03	02.00%
11.	Keratinised cervical squamous lining and squamous metaplasia of cervix	01	0.66%
12.	Epithelial hyperplasia and squamous metaplasia	01	0.66%
13.	Chronic cervicitis and keratinised cervical squamous lining	01	0.66%
14.	Chronic endocervicitis	01	0.66%
15.	Proliferative squamous epithelium	01	0.66%
16.	Squamous cell carcinoma of cervix-small cell type	01	0.66%
17.	Total	150	100%

It is evident from Table 3 that chronic nonspecific inflammation of cervix was found in 97/150 hysterectomy specimen which is commonest finding. Malignant cervical lesions are less common findings in hysterectomy specimen.

4. Discussion

Hysterectomy is commonly performed surgical procedure in gynecology in perimenopausal age.¹¹ Uterine cervix forms the major portal for the non-neoplastic lesions in the routine

Table 4: Tabulated comparison of microscopical cervical findings between Dr. Varsha Dhuliya, Dr. Jayadeep Garewal and Dr. Priyadarshini D. study with present study:

S. No.	Cervical changes	Dr. Varsha Dhuliya ³	Dr. Jayadeep Garewal ⁹	Dr. Priyadarshini D. ¹⁰	Percentage
1.	Chronic Cervicitis	77.33%	49.50%	48.00%	45.33%
2.	No remarkable pathology	17.33%	-	-	16.00%
3.	Squamous epithelial hyperplasia	-	-	-	12.66%
4.	Chronic papillary endocervicitis	4.67%	-	31.20%	12.66%
5.	Chronic cervicitis with squamous hyperplasia	-	-	-	02.66%
7.	Chronic cervicitis with squamous metaplasia	-	-	-	02.00%
8.	Squamous metaplasia	-	12.09%	36.80%	02.00%
9.	Chronic endocervicitis with reactive hyperplasia	-	-	-	0.66%
10.	Hyperkeratosis of cervical squamous lining	-	-	-	02.00%
11.	Keratinised cervical squamous lining and squamous metaplasia of cervix	-	-	-	0.66%
12.	Epithelial hyperplasia and squamous metaplasia	-	-	-	0.66%
13.	Chronic cervicitis and keratinised cervical squamous lining	-	-	-	0.66%
14.	Chronic endocervicitis	-	-	-	0.66%
15.	Proliferative squamous epithelium	-	-	-	0.66%
16.	Squamous cell carcinoma of cervix-small cell type	0.67%	-	-	0.66%
17.	Chronic non-specific cervicitis with nabothian cyst	-	19.70%	-	-
18.	Chronic non-specific cervicitis with koilocytic changes	-	9.20%	27.20%	-
19.	Prolepse changes	-	-	9.6%	-
20.	Basal cell hyperplasia	-	5.60%	-	-
21.	Microglandular adenosis	-	-	3.20%	-
22.	Endocervical glandular hyperplasia	-	-	4.00%	-
23.	Endocervical polyp	-	2.82%	7.2%	-
24.	Tunnel clusters	-	0.40%	0.40%	-
25.	Tubal metaplasia	-	-	2.80%	-
26.	Intestinal metaplasia	-	-	1.60%	-
27.	Follicular cervicitis	-	-	0.80%	-
28.	Diffuse lamina endocervical glandular hyperplasia	-	-	0.80%	-
29.	Suprabasal bulla	-	-	0.80%	-
30.	Exocytosis	-	-	0.80%	-
31.	Mesonephric rests	-	-	0.40%	-
32.	Endometriosis	-	-	0.40%	-
33.	Condylomata accuminatum	-	0.40%	-	-

histopathology specimens. Accordingly, for the diagnosis of non-neoplastic uterine cervical lesions, histopathological examination still remains gold standard.¹² 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. On the basis of this, the present study was undertaken to identify the various histological features of the uterine cervix. As

such, the hysterectomy specimens which are associated with the non-neoplastic lesions of the cervix do not exhibit any major morphological variations.¹³

It is evident from Table 4 that nonspecific cervicitis was most common findings in adult females in this present study, which is similar observation in Dr. Varsha Dhuliya, Dr. Varsha Dhuliya and Dr. Priyadarshini D. Chronic cervicitis affects preferentially squamocolumnar junction and endocervix. Lesions with focal and sometimes

dense inflammatory cell infiltrate seen most commonly in patient who underwent hysterectomy for various reason like prolapsed of uterus, fibroid uterus and dysfunctional uterine bleeding and pelvic inflammatory disease and found in all age group. Incidence of epithelial cell abnormality was different in different studies. The difference in the incidence of epithelial cell abnormalities are mostly due to difference in geographic area of study and difference in socioeconomic standards, racial, religious and other ethnic factors peculiar to the population studied. As our study was done on Hospital based patients and majority of them were of low socioeconomic class and more than 50% were from rural area having poor genital hygiene and early age at marriage.

5. Conclusions

In our study, 150 hysterectomy specimens of cervix of Sir T. Hospital, Bhavnagar were examined for gross and microscopic feature and reported with the help of light microscopic examination; the age group was between 20 and 79 years, of which 68.66% were in reproductive age group; 68.66% had healthy looking cervix; 45.33% specimens had chronic cervicitis on microscopic examination. In our study mode of presentation for hysterectomy was leiomyoma which is 64% and most common presenting age group was 4th decade of life. On gross examination, majority of cervix are normal which is 68.33% but on microscopic examination majority of the cervix had non-specific chronic inflammatory features which is 45.33%. One case of small cell carcinoma of cervix was noted during study. Out of 11.33% case of uterovaginal prolapse, 41.17% cervix had hyperkeratinisation and mean age group of presentation was 6th decade of life. Peak age for incidence for hysterectomy was 4th decade of life, which is 47.33%.

6. Financial support and Sponsorship

None.

7. Conflicts of Interest

There are no conflicts of interest.

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