Original Research Article

Histopathological Evaluation of Non Neoplastic and Neoplastic Lesions of Uterine Cervix

Trupti Patil[1], Smita P.Bhide[2*], Sneha R. Joshi[3]

[1] Resident,Dept of Pathology,MIMER Medical College,Talegaon Dabhade Pune,Maharashtra, India
[2]Professor,Dept of Pathology,MIMER Medical College ,Talegaon Dabhade,Pune,Maharashtra,India
[3]Professor &Head,Dept of Pathology,MIMER Medical College ,Talegaon Dabhade,Pune,Maharashtra,India

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Abstract

Introduction: The cervix is elongated fibro muscular portion of the uterus, it measures 2.5 to 3.0 cm.Uterine cervix acts as a "gateway" for various infections, which affects cervix, uterus and upper genital tract, leading to cause various lesions of cervix as well as acting as a sentinel for upper genital tract infections and a target for viruses and other carcinogens, which may lead to invasive carcinomas.**Aims and objectives** :1.To study the occurrence & age distribution of various lesions of cervix. 2. To study and classify cervical lesions histopathogically. 3. To study the occurrence of histopathogical variants of carcinoma of cervix.**Materials and methods**:Present study was a prospective study conducted in the Dept of Pathology during the period of October 2016 to August 2018. The study involved analysis of specimens received in histopathology laboratory of Dept of Pathology from Dept of OBGY in the form of hysterectomy, cervical biopsy & cervical polypectomy.**Results** :The present study was a prospective study done over a period of two years from October 2016 to August 2018. In this study a total of 288 uterine cervical specimens were studied. Out of these specimens, Inflammatory lesions formed the major part accounting to 74.30%, followed by Malignancies (13.54%).Among the Inflammatory cervical lesions, Chronic non specific cervicitis was the most common in 188/214 (87.86%) cases. Benign cervical lesions were found in 19/288 (6.59%) cases. Total 39/288 (13.54%) cases of Invasive cervical malignancies were encountered. Among cervical malignancies, Squamous cell carcinoma was the commonest in 36/39 (92.32%) cases. Of these Large cell non keratinizing was the most common histological subtype**.Conclusion** :Cervical malignancies are most common malignancies of female genital tract Histomorphological studies of the cervix along with clinical correlation is very important for early diagnosis in diseases of the cervix as they have advantage of being readily available, relatively cheap and technically easy. Histopathological examination of biopsy specimen is the single best gold standard for the diagnosis.

Keywords:Cervix, Histopathology,Malignancy

Introduction

The cervix is elongated fibro muscular portion of the uterus, it measures 2.5 to 3.0 cm.[1] Uterine cervix acts as a "gateway" for various infections, which affects cervix, uterus and upper genital tract, leading to cause various lesions of cervix as well as acting as a sentinel for upper genital tract infections and a target for viruses and other carcinogens, which may lead to invasive carcinomas.The normal cervix comprises of two different regions, ectocervix and endocervix, the ectocervix is lined by nonkeratinizing stratified squamous epithelium (i.e. native squamous epithelium) and the endocervix by simple columnar epithelium. The junction where the two regions adjoin, is the squamo-columnar junction.[2-3] Under certain physiological or pathological conditions, the epithelium at the squamo-columnar junction is replaced by stratified squamous epithelium (or metaplastic squamous epithelium), giving rise to a region referred to as the 'transformation zone'. The transformation zone is the most common site for development of cervical neoplasia. This epithelium is vulnerable to many pathological changes ranging from inflammation to an extremely lethal malignant transformation.[3]The

**Correspondence*
Dr. Smita P.Bhide
Professor,Dept of Pathology,MIMER Medical College , Talegaon Dabhade,Pune,Maharashtra,India
E-mail: smitapbhide@gmail.com

uterine cervix is prone to develop several non neoplastic and neoplastic lesions. Non-neoplastic diseases of the cervix are predominantly inflammatory in nature but they at times resemble carcinoma clinically.[4] Thus, categorization and familiarity of the cervical non-neoplastic lesions with their histomorphological findings are essential in their recognition and could improve the approach towards better management of the patient. Also, early detection of these non-neoplastic lesions can prevent further complications.[5] Histopathological studies of the cervix along with clinical correlation is very important for definitive diagnosis in diseases of the cervix. [6]

The present study was undertaken to study histopathological features of non neoplastic and neoplastic lesions of uterine cervix.

Aims and objectives.

1.To study the occurrence & age distribution of various lesions of cervix.

2.To study and classify cervical lesions histopathogically.

3. To study the occurrence of histopathogical variants of carcinoma of cervix.

Material and methods

The present study was a prospective study conducted in department of pathology, at Medical College &Hospital located in rural area, during the period of October 2016 to August 2018 A total of 288 specimens received from hysterectomy, cervical biopsy & cervical polypectomy, during the study period satisfying the inclusion and exclusion criteria were included.

Inclusion criteria: All the specimens received from hysterectomy, cervical biopsy, cervical polypectomy, were included in the study.

Exclusion criteria: Various lesions arising from the uterus, vulva, vagina and parametrium were excluded. Lesions arising from neighbouring organs extending in cervical canal but not involving cervical tissue were excluded.

In all such cases the clinical and relevant investigative data was recorded. Thus formalin fixed & paraffin embedded tissue sections from these specimens were used for microscopic study. The sections were stained with haematoxylin & eosin stains. Special stains like mucicarmine, PAS, were employed wherever necessary. Microscopic findings were studied in detail and histopathological diagnosis were given. The histopathological classification of tumours was done according to the recommendation by W.H.O 2014.

Results

A total of 288 specimens of cervix were received in histopathology section of Department of Pathology of our hospital. The specimens were received in the form of hysterectomy, cervical biopsy and polypectomy.

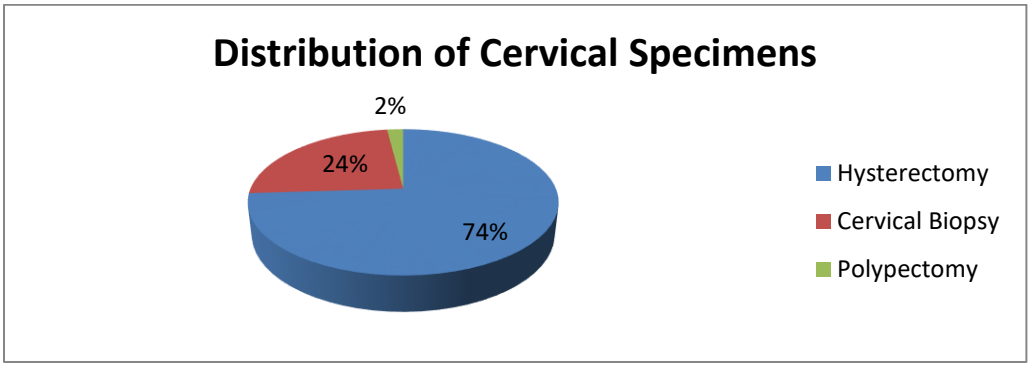

Fig 1: Distribution of Cervical Specimens

The most common type of specimen received in histopathology section of Department of Pathology, of our Hospital, was hysterectomy in 213/288 (74%) cases, followed by cervical biopsy and polypectomy.

Table 1 :Histopathological distribution of Lesions of Cervix

Cervical Lesions	Number Of Cases	Percentage %
I Non-neoplastic		
Inflammatory	214	74.30%
Non-neoplastic cervical glandular lesions	03	0.05%
II Neoplastic		
Benign	8	06.59%
Precursor lesions	13	04.52%
Malignant	39	13.54%
Total	288	100

Inflammatory lesions were the commonest cervical lesions in 214/288 (74.30%) cases, Malignancies being the second most common lesions in 39/288 (13.54%) cases, followed by Benign cervical lesions in 19/288 (6.59%) cases, Precursor lesions in 13/288 (4.52%) cases and Non neoplastic glandular cervical lesions were the least common in 3/288 (1.05%) cases.

Table 2: Distribution of various Inflammatory Cervical lesions

Inflammatory Cervical Lesions	Number of Cases	Percentage %
Acute Cervicitis	06	02.80%
Chronic Non Specific Cervicitis	188	87.86%
Chronic Papillary Endocervicitis	20	09.34%
Total	214	100

Among the Inflammatory lesions Chronic non specific cervicitis was the commonest in 188/214 (87.86%) cases, followed by Chronic papillary endocervicitis in 20/214 (9.34%) cases and Acute cervicitis in 6/214 (2.8%) cases. Chronic non specific cervicitis was associated with changes like Squamous metaplasia, Nabothian cyst, Koilocytosis and Epidermidization. The prevalence of Non neoplastic cervical glandular lesions was 3/288 (1.05%) cases in this study and included Microglandular endocervical hyperplasia and Tunnel clusters.

Table 3 : Distribution of Benign Cervical lesions

Benign Cervical Lesions	Number of Cases	Percentage %
Endocervical Polyp	15	78.94%
Leiomyomatous Polyp	02	10.53%
Fibroepithelial Polyp	02	10.53%
Total	19	100

Benign lesions were found in 19/288 (6.59%) cases. Among Benign lesions, Endocervical polyp was most common in 15/19 (78.94%) cases, followed by Leiomyomatous and Fibroepithelial polyp 2/19 (10.53%) cases each.

Precursor lesions of cervix were seen in 13/288 (4.52%) cases. Squamous Intraepithelial Lesions included Low grade Squamous Intraepithelial Lesions in 5/13 (38.46%) cases and High grade Squamous Intraepithelial Lesions in 8/13 (61.54%) cases.

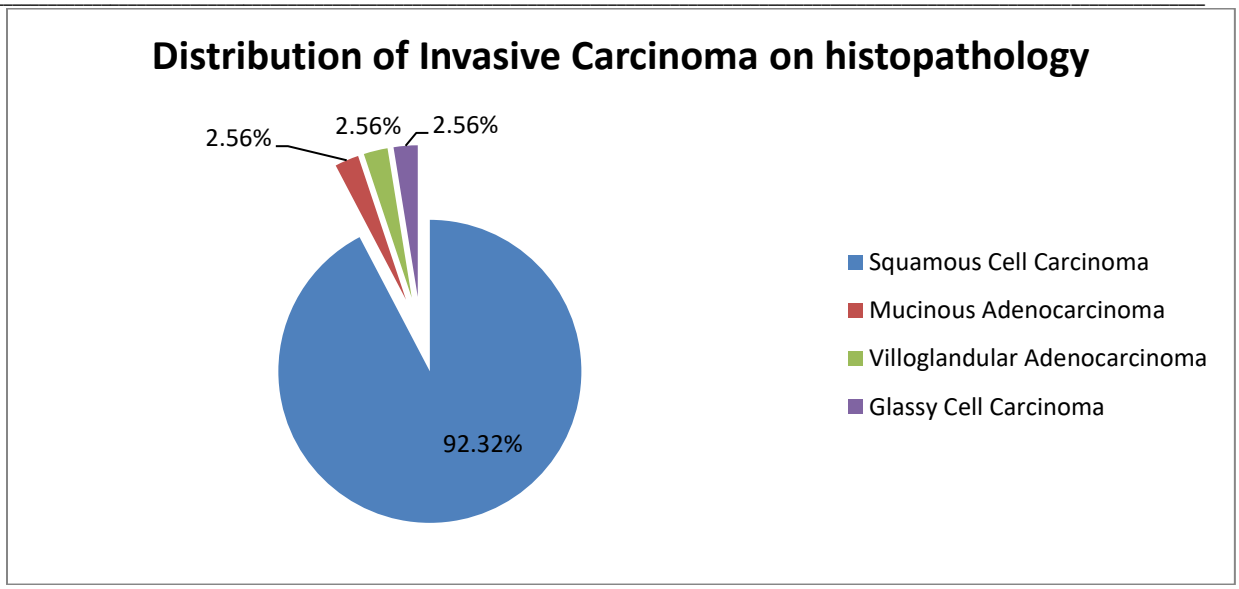

Fig 2 : Distribution of Invasive carcinoma on histopathology

Squamous Cell Carcinoma was the most common histopathological type of Invasive Cervical carcinoma in 36/39 (92.32%) cases, followed by Mucinous Adenocarcinoma, Villoglandular Adenocarcinoma and Glassy Cell Carcinoma in 1/39 (2.56%) case each. Squamous Cell Carcinoma was graded according to Broder's grading system into Well, Moderately and Poorly differentiated types.Moderately differentiated type was the commonest in 25/36 (69.45%) cases, followed by Well differentiated type in 10/36 (27.78%) cases. Among the histological subtypes of Squamous Cell Carcinoma, Large cell non keratinizing type was the most common in 25/36 (69.45%) cases, followed by Large cell keratinizing type.

Table 4 : Distribution of presenting symptoms of patients with various Cervical Lesions

Symptoms	Number of Cases	Percentage %
Per vaginal discharge	173	60.06%
Heavy menstrual bleeding	82	28.47%
Intermenstrual bleeding	41	14.23%
Abdominal pain	29	10.06%
Mass per vaginum	21	07.29%
Postmenopausal bleeding	18	06.25%
Postcoital bleeding	16	5.55%
Dysuria	04	01.38%

The above table shows presenting symptoms in patients diagnosed with various lesions of Cervix, among which Per vaginal discharge was the most common symptom, followed by Heavy menstrual bleeding, Intermenstrual bleeding, Abdominal pain, Mass per vaginum, Postmenopausal bleeding, Postcoital bleeding and Dysuria. Majority of patients presented with more than one symptom.

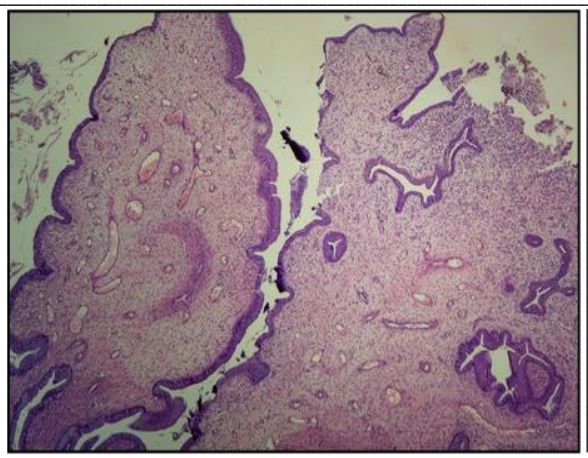

Fig 3: Photomicrograph showing Endocervical polyp (H&E,5X)

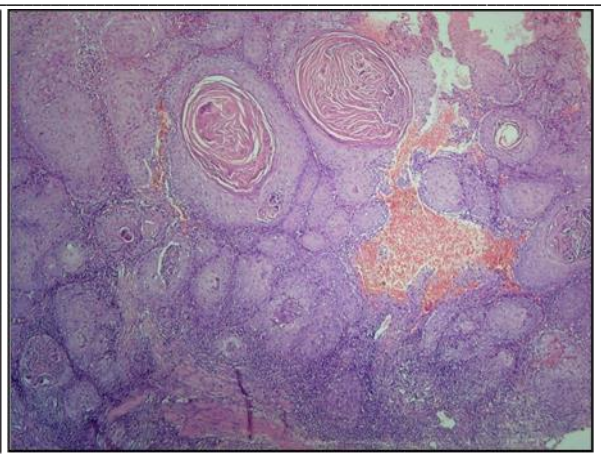

Fig 4: Photomicrograph showing CervicalWell differentiated Large cell keratinizing Squamous cell carcinoma (H&E,10X)

Discussion

The uterine cervix is easily accessible and vulnerable part of the female genital tract. Accurate and complete histopathological diagnosis of the disease is important to understand the prognosis and proper management. The present study was undertaken to highlight the importance and patterns of various cervical lesions on histopathology. This prospective study included 288 specimens of uterine cervix which were received from October 2016 to August 2018 in histopathology section.The cervical specimens were received in the form of hysterectomy, cervical biopsy and polypectomy in the histopathology section of department of Pathology of our hospital. The most common type of cervical specimen received in present study was hysterectomy (74%). While reviewing the literature, it was seen that hysterectomy was the commonest type of cervical specimen in studies done by Deepa Hatwal et al [7]and Jayadeep Garewal et al [8], while Cervical biopsy was the commonest cervical specimen in the studies done by Gamit B G et al[9] and Gupta M et al.[10] In the present study,Inflammatory lesions were the commonest cervical lesions in 217/288 cases (74.30%) followed by Malignancies in 39/288 cases (13.54%), Benign lesions in 19/288 cases (6.59%), Precursor lesions in 13/288 cases (4.52%), and Non-neoplastic glandular cervical lesions in 3/288 cases (1.05%). In study done by Indira S Bangera et al[11]. Inflammatory lesions were the commonest cervical lesions in 56.67%, however second most common were Precursor lesions 18.88%, followed by Benign lesions in12.23%, Malignancies in 8.88%, and Non-neoplastic glandular cervical lesions in 3.34%.In study done by Gamit B G et al,[9]Inflammatory lesions were most commonly found followed by Precursor lesions and then Malignancies.

Chronic non specific cervicitis was the most common Cervical Inflammatory lesion followed by Chronic papillary endocervicitis and Acute cervicitis in our study. Similar pattern was observed in the work done by Harshal A Patil et al[12] and DeepaHatwal et al.[7] Chronic non specific cervicitis (CNSC) was the commonest type of cervical pathology noted in the present study. Similar pattern was noted in the studies conducted by Olutoyin G et al[13], Jayadeep Garewal et al[8] and Priyadarshini D et al.[14] Squamous metaplasia was the most common associated change with Chronic non specific cervicitis (CNSC) which correlated in study done by Priyadarshini D et al, [14] however CNSC with Nabothian cyst was the most common associated change in study by Jayadeep Garewal et al[8] CNSC with koilocytosis was less common pathology found in our study, which correlated with study done by Olutoyin G et al.[13]

In present study among the Non-neoplastic cervical glandular lesions, the most common were Micro-glandular endocervical hyperplasia followed by Tunnel clusters. This correlated with findings of study done by Pallipady et al[15], but in study by Poste et al,[16] it was found that Tunnel clusters were common than Microglandular endocervical hyperplasia.

Benign lesions were found in 19/288 (6.59%) cases in our study. Amongst Benign cervical lesions, Endocervical polyps were the most common type of lesion followed by Leiomyomatous polyp and Fibroepithelial polyp in our study. Similar pattern was observed by Gopalan U et al[17] in their work. The importance of diagnosing patients at the precursor

stage is that they can be treated earlier and progression to carcinoma can be prevented. Even if these lesions can be detected on pap smears, histopathological diagnosis still is definitive before starting the management. LSIL was common than HSIL in studies done by Atilgan R et al,[18] Reddy SD et al [19] and Shaki O et al,[20] however Poste et al[16] observed that HSIL were common than LSIL which was comparable to results in our study.Poste et al [16] in their study observed Malignant cervical lesions in 164 cases (13.01%), which is comparable to the present study. Our study revealed that Squamous cell carcinoma was the commonest cervical neoplasm followed by Adenocarcinoma. Studies by various other authors like, Reddy SD et al,[9]Jayadeep Garewalet al,[8]Kumari K et al [21]and Gammit BG et al [9] also confirmed the same.According to Broder's grading of SCC, Moderately Differentiated type was the commonest type followed by Well differentiated and Poorly differentiated types. Study by Qadir Fatima et al [22] showed Moderately Differentiated type was the commonest type of SCC, however the second most common type was Poorly differentiated and Well differentiated was the least common.The most common histological subtype of Squamous cell carcinoma found in present study was Large cell non keratinizing, followed by Large cell keratinizing and Small cell type, similar results were also found in studies done by Reddy SD et al[19] and Poste et al.[16]

Summary & Conclusion

A two years prospective study was performed to study histopathological evaluation of non neoplastic and neoplastic lesions of uterine cervix, from cervical specimens that were received in histopathology section of department of Pathology of our hospital, during October 2016 to August 2018.In this study a total of 288 uterine cervical specimens were studied. Out of these specimens, Inflammatory lesions formed the major part accounting to 74.30%, followed by Malignancies (13.54%), Benign lesions (6.59%), Precursor lesions (4.52%) and Non neoplastic glandular lesions constituted the least 1.05%. Among the Inflammatory cervical lesions, Chronic non specific cervicitis was the most common in 87.86% cases, followed by Chronic papillary endocervicitisin 9.34% cases and Acute cervicitis in 2.80% cases. The associated changes seen with Chronic cervicitis were Squamous metaplasia, Nabothian cyst, Koilocytosis which is pathognomic of HPV infection and Epidermidization usually seen with uterine prolapse.

Benign cervical lesions were found in 19/288 (6.59%) cases. Out of these Endocervical polyp was the commonest (78.94%), followed by Leiomyomatous polyp and Fibroepithelial polyp (10.53%) each. Precursor cervical lesions were seen in 13/288 (4.52%) cases. These were Squamous intraepithelial lesions which included LSIL in 38.46% cases and HSIL in 61.54% cases.Total 39/288 (13.54%) cases of Invasive cervical malignancies were encountered. Among cervical malignancies, Squamous cell carcinoma was the commonest in 92.32% cases. Of these Large cell non keratinizing was the most common histological subtype, followed by Large cell keratinizing type. Other Invasive cervical carcinoma included 1 case each of Mucinous Adenocarcinoma, Villoglandular Adenocarcinoma and Glassy cell carcinoma. Cervical malignancies are most common malignancies of female genital tract. Histomorphological studies of the cervix along with clinical correlation is very important for early diagnosis in diseases of the cervix as they have advantage of being readily available, relatively cheap and technically easy. Histopathological examination of biopsy specimen is the single best gold standard for the diagnosis.

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