

Histopathological spectrum of cervical lesions at tertiary care centre

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Abstract

Introduction: The cervical epithelium is vulnerable to many pathological changes ranging from inflammatory to extremely lethal malignant transformation. The cervical cancer is reduced in developed countries by effective screening program but still most common gynecological malignancy in the world and 2nd most frequently diagnosed cancer in a women after breast cancer.

AIMS

1. To study the histomorphological pattern of cervical lesions.
2. To study the age distribution and relative frequency of various cervical lesions.

Methods: In this study we included 400 cervical biopsies submitted for histopathology in the department of Pathology SMS Medical College, Jaipur, Rajasthan.

Results: In this study total 400 cases were studied, out of these 294 (73.5%) cases were non neoplastic, 11 (2.75%) cases were pre invasive and 95 (23.75%) cases were malignant. Cervicitis was most common non neoplastic lesion and squamous cell carcinoma was most common malignant lesion.

Conclusion: Proper screening and histopathological examination of cervical biopsies along with clinical correlation is very helpful in early detection of pre malignant and malignant lesions for their prompt treatment.

Keywords: cervicitis, CIN, squamous cell carcinoma

Introduction

The cervix is the elongated fibromuscular portion of the uterus that measures 2.5 to 3.0 cm^[1], lined by two types of epithelium, an outer squamous epithelium and internal mucin secreting columnar epithelium, with unique functional area containing reverse/basal cells. ^[2] This epithelium is vulnerable to many pathological changes ranging from inflammation to extremely lethal malignant transformation. Due to easy accessibility to the cervix and the effective screening programs, cervical cancer is reduced in developed countries by effective screening program but still most common gynecological malignancy in the world and 2nd most frequently diagnosed cancer in a woman after breast cancer, but is the number one cancer in Indian women constituting about 16% of world's annual incidence. ^[3] Various types of non-neoplastic and neoplastic lesions develop in cervix most commonly seen in sexually active women. Majority of non-neoplastic lesions are inflammatory in nature ^[4]. Inflammatory lesions of clinicopathological importance are acute cervicitis, chronic cervicitis and chronic granulomatous, infective cervicitis caused by bacteria, virus, protozoa and fungi. Tumor like non neoplastic cervical lesions according to the world health organization include endocervical hyperplasia, endometriosis, nabothian cyst, endocervical polyp. ^[5] Human Papilloma Virus (HPV) is a potent risk factor for CIN and cancer ^[6]. Histopathological study of cervix along with clinical correlation is very helpful in early diagnosis of cervical lesions as they have advantages of being relatively cheap, easily available and technically easy.

Aims and Objective

1. To study the histomorphological pattern of cervical lesions
2. To study the age distribution and relative frequency of various cervical lesions.

Material and Methods

This study consist of total 400 cases of cervical biopsies submitted for histopathology in the Department of Pathology, SMS Medical College, Jaipur. Relevant clinical information like age and presenting complaints were obtained. All the specimen received in 10% formalin, gross features of the specimen were recorded. After processing tissue paraffin blocks were prepared. 4-5 micron thick section were taken and stained with haematoxylin & eosin and histopathological features were studied.

Results

Table 1: Distribution of lesions.

S. No.	Cervical lesions	Total Number	Percentage (%)
1	Non neoplastic (Inflammatory and Tumor like lesions)	294	73.5%
2	Preinvasive cervical Intra Epithelial lesions	11	2.75%
3	Malignant lesions	95	23.75%
	Total	400	100%

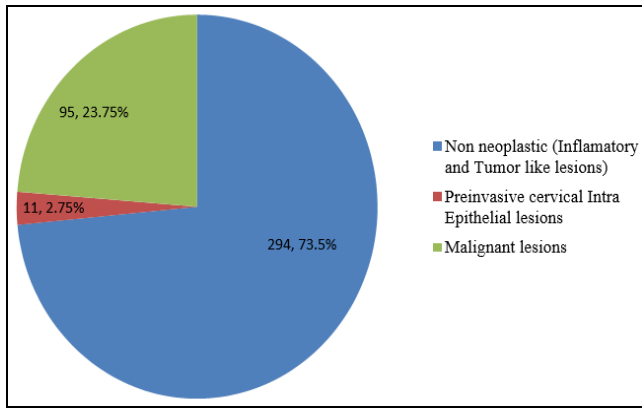


Fig 1: Distribution of lesions

In this study total 400 cases were studied. Out of these 294 (73.5%) cases were non neoplastic, 11 (2.75%) cases were preinvasive and 95 (23.75%) cases were malignant.

Table 2: Distribution according to Age

S. No.	Age Group (Years)	Cases	Percentage (%)
1	21-30	26	6.5%
2	31-40	114	28.5%
3	41-50	176	44%
4	51-60	41	10.25%
5	61-70	32	8%
6	> 70	11	2.75%
Total		400	100%

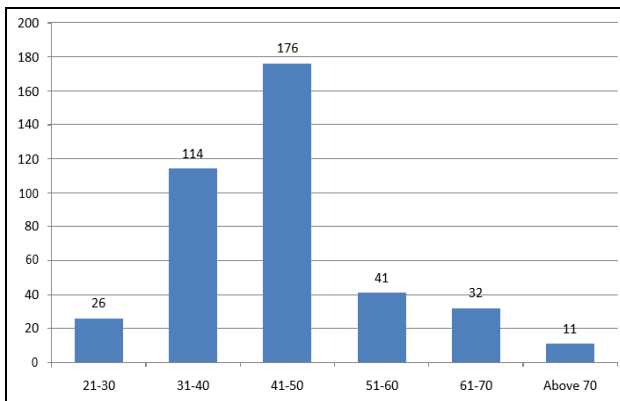


Fig 2: Distribution according to Age

The table showing age wise distribution of the study population where maximum numbers of patients were in 41-50 age group (44%), followed by 31-40 age group (28.5%) and minimum number were in age group of >70 years (2.75%).

Table 3: Distribution according to symptoms

S. No.	Symptoms	Total Number	Percentage (%)
1	White discharge	240	60.0%
2	Backache and Abdominal pain	110	27.5%
3	Bleeding per vagina	32	8.0%
4	Pelvic pain	12	3.0%
5	Dyspaerunia	06	1.5%
Total		400	100%

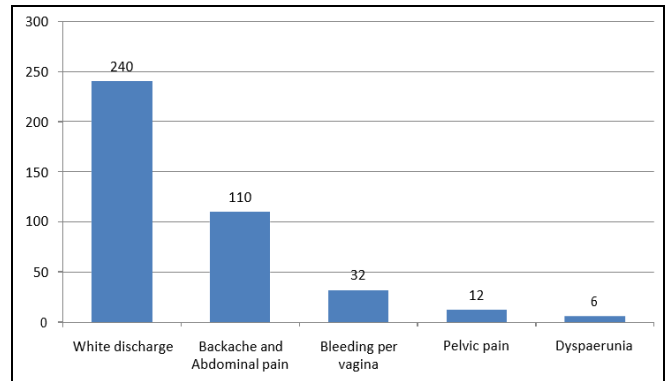


Fig 3: Distribution according to symptoms

In this study the most common presenting complaint was white discharge 240 (60%) followed by backache and abdominal pain 110 cases (27.5%), bleeding per vagina 32 cases (8%), pelvic pain 12 cases (3%) and dyspaerunia 06 cases (1.5%).

Table 4: Frequency of non-neoplastic lesions.

S. No.	Non neoplastic lesion	Number of cases	Percentage (%)
1	Chronic non-specific cervicitis	140	47.61%
2	Chronic non-specific cervicitis with retention cyst	14	4.76%
3	Acute cervicitis	10	3.40%
4	Acute on chronic cervicitis	05	1.70%
5	Tubercular cervicitis	02	0.68%
Polyp			
6	a. Endocervical polyp	66	22.44%
	b. Ectocervical polyp	02	0.68%
	c. Leiomyomatous polyp	20	6.80%
7	Squamous metaplasia	30	10.20%
8	Micro glandular hyperplasia	05	1.7%
Total		294	100%

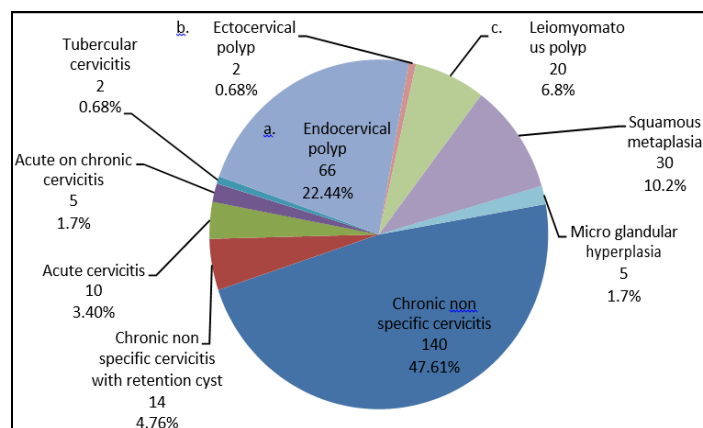


Fig 4: Frequency of non-neoplastic lesions.

This table showing distribution of various non-neoplastic lesions out of 294 cases, chronic non-specific cervicitis was most common 140 cases (47.61%) followed by cervical polyp 88 cases (29%), squamous metaplasia 30 cases (10.20%), chronic non-specific cervicitis with retention cyst 14 cases (4.76%), acute cervicitis 10 cases (3.40%), acute on chronic cervicitis 05 cases (1.70%) micro Glandular hyperplasia 05 cases (1.70%) and tubercular cervicitis 02 cases (0.68%). Maximum number of cases with inflammatory lesions (cervicitis) seen in 4th decade of life. In polyps the maximum number was endocervical polyp 66 cases (22.44%), leiomyomatous polyp 20 cases (6.80%) followed by ectocervical polyp 02 cases (0.68%).

Table 5: Frequency of various neoplastic lesions.

S. No.	Neoplastic lesion	Number of cases	Percentage (%)
1	Ephelial dssplasia		
	CIN-1	06	5.66%
	CIN-2	02	1.88%
	CIN-3	03	2.83%
	Total	11	10.37%
2	Squamous cell carcinoma		
	Well Differentiated	20	18.86%
	Moderately Differentiated	58	54.71%
	Poorly Differentiated	10	9.43%
	Total	88	83.00%
3	Adeno carcinoma	06	5.66%
4	Undifferentiated carcinoma	01	0.94%
	Total	106	100%

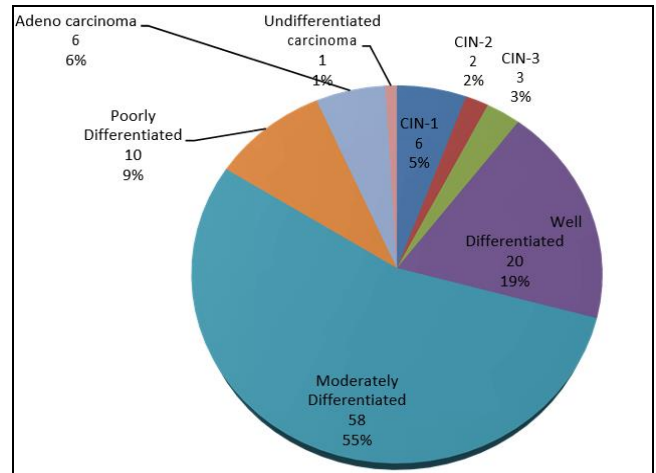


Fig 5: Frequency of various neoplastic lesions

This table showing distribution of various neoplastic lesions, out of 106 cases, squamous cell carcinoma has highest incidence with 88 cases (83%) and Adenocarcinoma was noted in 06 cases (5.66%). Cases of squamous cell carcinoma were more in 6th decade of life. Out of 88 cases of squamous cell carcinoma, moderately differentiated type SCC has highest incidence with 58 cases (54.75%), well differentiated SCC has 20 cases (18.86%) and poorly differentiated SCC in 10 cases (9.43%). A total 11 cases (2.75%) of preinvasive cervical intra epithelial lesions were seen and majority were low grade squamous intra epithelial lesions seen in 5th decade. Cases of high grade grade squamous intra epithelial lesions were also higher in 5th decade of life.

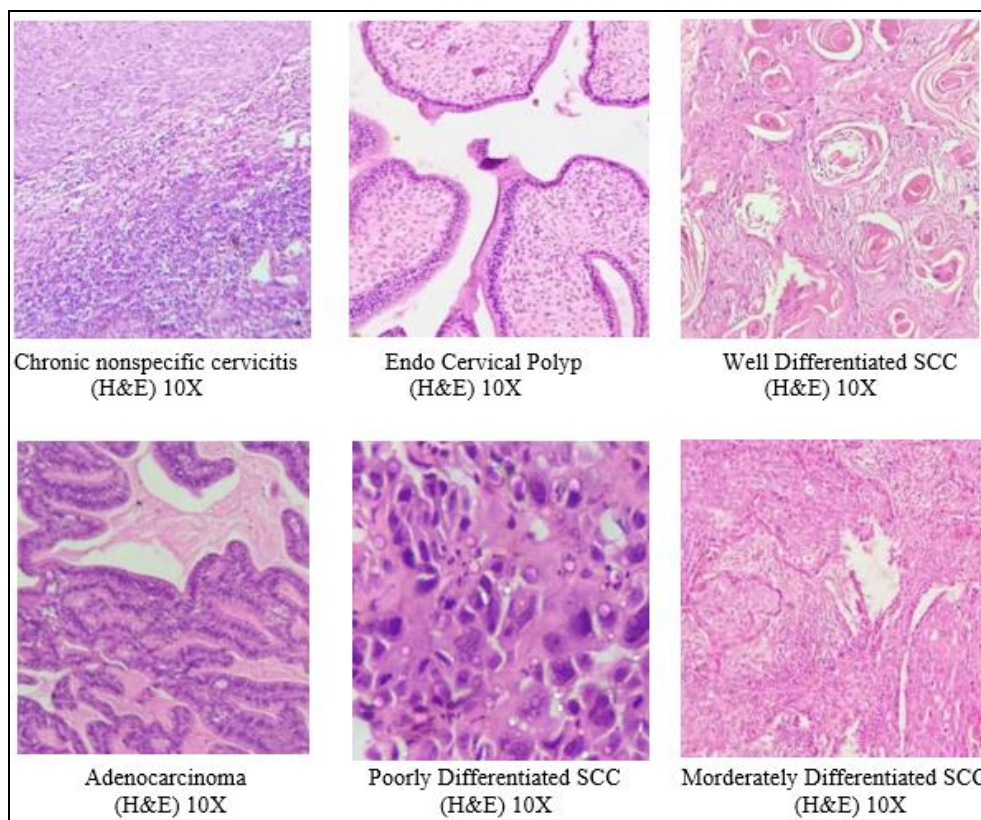


Fig 6

Discussion

The aim of this study was to know the relative frequencies and age incidence of different cervical lesions. In our study maximum number of patients were in age group 41-50 year

(44%) followed by 31-40 year age group (28.5%). Minimum number of cases were of age group >70 year (2.75%). These results were similar to study done by Jayadeep Grewal *et al.*, who got maximum number of

patients in 41-50 year age group i.e. 47.90% followed by 31-40 year age group 22.18% [17] and study done by Qadir Fatima *et al.* who found maximum number of patients (33.33%) in 41-50 year age group followed by (23.33%) in 31-40 year age group [18].

In present study maximum number of cases were of Non neoplastic lesions (73.5%), this was similar to results of Avani Jain *et al.* [19] who found maximum cases of Non neoplastic lesions 73.0%. Our results was comparable to the results of Kumari k *et al* [10], Bagdi *et al.* [11] and Ali *et al.* [12] in which maximum cases were Non neoplastic 49.39%, 46.51% and 46.34% respectively. Most common presenting complaint in our study was white discharge (60%) which was similar to the study of Qadir Fatima *et al.*, Bagdi *et al.* and Avani Jain *et al.* where also most common presenting complaint was white discharge being 66.03%, 60.0% and 54.0% respectively.

In this study majority of biopsies were diagnosed as chronic non cervicitis (47.61%) which was comparable to studies done Priyadarshini *et al.* [13], Nwawchakor *et al.* [14] and Kumari K *et al.* where chronic non specific cervicitis was diagnosed is 48%, 43.5% and 42.7% respectively.

Infective cervicitis is caused by a variety of organisms including bacteria, viruses, fungi and protozoa. These are commonly encountered in sexual transmitted infections (STIs) and urinary tract infections (UTIs). Chronic cervicitis may lead to endometritis, salpingitis, "pelvic inflammatory disease" due to Ascending intraluminal spread, Chorioamnionitis or it may cause initiation or promotion of cervical neoplasia.

Sexual transmitted viruses include Human Papilloma Virus (HPV) and Herpes Simplex Virus (HSV). HPVs cervicitis is a casual risk factor for Condyloma acuminatum, pre invasive cervical intra epithelial neoplasia (CIN I, II, III) and eventually cervical cancer.

In our study Squamous metaplasia was present in 30 cases (10.20%) which is comparable to study done by Poste *et al* [15]. 10.16% and Grawal *et al.* 12.09%.

In present study chronic non specific cervicitis with Retention cyst was found in 14 cases (4.76%) which is comparable to the studies of Qadir Fatima *et al.* and Jyothi *et al* [16]. who found for 4.71% and 5.66% respectively.

In our study 66 cases (22.44%) of endocervical polyp, 20 cases (6.80%) of leiomyomatous polyp and 02 cases (0.68%) of ectocervical polyp. Our result of endocervical polyp are similar to the study of Qadir Fatima *et al.* Who showed 21.69% endocervical polyp. Leiomyomatous polyp are show similarly studies of Usha *et al* [17]. Who found 6.3%.

Micro glandular hyperplasia was seen in 05 cases (1.70%) out of 294 non neoplastic cases which is comparable to the study done by Qadir Fatima *et al.* 1.88%, Naveen Kumar *et al* [18]. 1.44% and Poste *et al.* 1.19%.

Acute cervicitis was found in 10 cases (3.40%) of non-neoplastic cervical lesions similar to the study of Qadir Fatima *et al.* 3.77%, Our results are variable from the study of Nwawchakor *et al.* (7.6%).

In our study 02 cases (0.68%) of Tubercular cervicitis was found which is comparable to the study of Qadir Fatima *et al.* 0.94%.

In present study diagnosed 11 cases (10.37%) of CIN (Epithelial dysplasia) including 06 cases of CIN-I, 02 cases of CIN-II and 03 cases of CIN-III which is almost equal to the result of Atul Jain *et al* [19] (10.2%) but higher then study

of Qadir Fatima *et al.* (4.6%) and Jatashankar Misra *et al.* [20] (7.0%).

In our study 106 cases (26.5%) were of neoplastic lesion, out of these 106 cases Squamous cell carcinoma was highest incidence of 88 cases (83.01%) which is comparable to the study of Qadir Fatima *et al.*, Grawal *et al.*, Poste *et al.*, Solapurkar *et al* [21]. In which 87.62%, 92.59%, 95.73% and 97.70% respectively. Cases of squamous cell carcinoma were sub classified in Well differentiated SCC with 20 cases (18.66%), morderately differentiated SCC 58 cases (54.71%) and poorly differentiated SCC 10 cases (9.43%) which were comparable to the study of Poste *et al.* Who showed well differentiated SCC 30.09%, morderate differentiated SCC 63.13% and poorly differentiated SCC 5.42%. The morderately differentiated SCC were also comparable to the study done by Husin N *et al* [22] 44.9%.

In the current study 06 cases (5.66%) of Adeno carcinoma diagnosed out of total neo plastic lesions which is similar to the finding of Qadir Fatima *et al.* 5.67% and Swan *et al.* [23] 5.38%.

Conclusion

In our study Non neoplastic lesions were more common Then neoplastic lesion. Chronic cervicitis was the most common lesion. Cervical biopsy help in definitive diagnosis of lesions. Cases of cervicitis should be treated to prevent further complications. Easily screening and Histopathological examination of cervical biopsies help in early detection of pre malignant and malignant lesions and their prompt treatment.

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