Histopathological Spectrum of Cervical Lesion in Different Age Groups in Central India Madhya Pradesh

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Abstract

Background: Cervical lesions are the leading cause of morbidity in Indian women and cervical cancer is the second most common cancer in women worldwide next to breast cancer.

Objectives: To study the age distribution, clinical presentation, the relative frequency of various cervical lesions and histopathological features of cervical lesions.

Materials and Methods: It's a retrospective study of all specimen of cervical biopsies received from October 2021 to March 2023 in the Department of Pathology.

Result: In a total of 107 cases studied 55 (51.4%) cases were non neoplastic, 14 (13%) were preinvasive and 38 (35%) cases were malignant. Cervicitis was the most common non-neoplastic lesion and squamous cell carcinoma was the most common cancer.

Conclusion: Our study highlights a vast spectrum of cervical lesions in all age groups and therefore early detection and management of certain lesions can help in reducing morbidity.

Keywords: Cervical lesions, Histology and pathology, Carcinoma cervix.

Introduction

Worldwide, Cervical cancer was the fourth most common cancer in women, contributing 6.9% of the total number of new cases diagnosed in 2018. In India, Carcinoma of the cervix is the most common cancer in Indian women and account for 22.86% of all malignant tumours in women. Cervical cancer is the third largest cause of cancer mortality in India accounting for nearly 10% of all cancer-related deaths in the country.[1] The most common clinical presentation of the patient is vaginal bleeding/ post-menopausal bleeding and these patients need to be evaluated with pap smear, colposcopy and biopsy if necessary. Patients reported early as abnormal pap smears have better outcome because of early screening and detection.[2] Non-neoplastic cervical lesions occur in all age groups amongst women but are more common in reproductive and sexually active women.[2] Nonneoplastic cervical lesions include inflammatory lesions and

non-neoplastic tumour-like lesions. The majority of these inflammatory lesions are acute cervicitis, chronic cervicitis caused by various bacteria, viruses and fungi.[3] The predominant risk factor of carcinoma cervix is a persistent human papillomavirus infection. Other risk factors are lack of awareness, early age at marriage, low socioeconomic status, parity, race and tobacco smoking. Prognosis depends mainly on the stage of the disease. In this retrospective study, we aimed to investigate the age distribution, clinical presentation, relative frequency, and histopathological features of cervical lesions. By analyzing a comprehensive range of cervical biopsies received over a specific period, we aimed to contribute to the existing knowledge about cervical lesions and emphasize the importance of early detection and management in reducing morbidity associated with these lesions.

Material Methods

This retrospective study was conducted at the Department of Pathology, at a Tertiary care Centre, Madhya Pradesh, India. The study included all specimens of cervical biopsies received between October 2021 and March 2023.

Data collection and recording: Data were collected from the requisition slips sent along with the biopsy samples. The relevant information, including age, clinical presentation, and microscopic findings, was recorded for each case.

Inclusion criteria: All cervical biopsies received during the specified study period were included in the analysis.

Statistical analysis: Descriptive statistics were used to summarize the data. The total number and percentage of different types of cervical lesions were calculated.

Results

Total 107 cases of cervical biopsies were studied. Out of these 55(51.4%) cases were non neoplastic, 14(13%) were pre invasive and 38(35.5%) cases were malignant. (Table no 1)

Table1 : Distribution of lesions

Cervical lesions	Total in Number	Percentage
Non neoplastic (inflammatory and tumor like lesions)	55	51.4
Pre-invasive cervical intraepithelial lesions	14	13
Malignant lesions	38	35.5
TOTAL	**107**	**100**

Out of 55 non-neoplastic lesions, 45(42%) were cervicitis and 09 (8.4%) were cervical polyp (table 2). The most common preinvasive intraepithelial lesion was Low grade squamous intraepithelial lesion (LSIL) 10 (9.3 %). Among 38 neoplastic lesions, the commonest one was Squamous cell carcinoma comprising of 33 (30.8%), among which moderately differentiated squamous cell carcinoma comprised 16 (14.9%) followed by Adenocarcinoma 04 (3.7%). (Table-2)

Table 2: Distribution According To Diagnosis

S.No.	Diagnosis	Total No.	%
1	Chronic cervicitis/inflammation	45	42
2	Cervical Polyp	09	8.4
3	LSIL	10	9.3
4	HSIL	3	2.8
5	Carcinoma in situ	2	1.8
6	Adenocarcinoma	4	3.7
7	Adenosquamous	1	0.93
	Squamous Cell Carcinoma		

8	Well differentiated SCC	7		6.5	
9	Moderately differentiated SCC	16	33	14.9	30.8
10	Poorly differentiated SCC	10		9.3	
		107		**100**	

In 107 cases, various symptoms were seen, most of the patients showed mixture of symptoms. Majority of patients (54%) presented with abdominal pain followed by vaginal discharge (29.9%) followed by irregular bleeding (15.9%). (Ttable-3)

Table 3: Clinical Presentation Of Cervical Lesion

Symptoms	Number of patients	Percentage
Irregular vaginal bleeding	17	15.9
Vaginal discharge	32	29.9
Abdominal pain	58	54

Inflammatory lesions (cervicitis) were most commonly seen in 30-40 years of age group whereas preinvasive lesions and malignant lesions were seen in 40-50 years of age group. (Table-4)

Table 4 : Distribution According To Age

S.No.	Diagnosis	Age in year					
		30-40	41-50	51-60	60-70	Total	%
1	Chronic cervicitis/inflammation	27	8	8	2	45	42
2	Cervical Polyp	2	6		1	9	8.4
3	LSIL	3	5	1	1	10	9.3
4	HSIL		2	1		3	2.8
5	Carcinoma in situ	2				2	1.8
6	Adenocarcinoma		4			4	3.7
7	Adenosquamous		1			1	0.93
8	Well differentiated SCC	3	2	1	1	7	6.5
9	Moderately differentiated SCC	3	9	2	2	16	14.9
10	Poorly differentiated SCC	2	6	2		10	9.3
		42	43	15	7	107	100

Discussion

The present study shows Non-neoplastic lesions 55 cases (51.4%) are more common than malignant lesions which was similar to the studies done by Avani J et al [4] and Srivani S et al. [3] in which non-neoplastic lesion were 73% and 79.7% respectively.

In our study Chronic non-specific cervicitis was the most common non neoplastic lesion seen in 45 cases (42%), comparable to the study done by Badge et al [5]. Maximum cases were seen in age group of 30-40 yrs.

Diagnosis of chronic cervicitis was made on the presence of lymphoplasmacytic infiltrate, some cases also showed areas of squamous metaplasia. It could be due to poor personal hygiene, a lack of health awareness. Chronic non-specific cervicitis accounts for the majority of disease burden in this study compared to the study done by Kiranmayi et al [6], Badge et al [7]. A similar finding is also noted by Nwachokor et al [8] and Kumari K et al.[9].

Non-neoplastic tumors like lesions such as polyps (endocervical) were rare entity seen in 9 (8.4%) cases. A study done in tertiary care hospital by Saravana et al [3] also found polyps in only 6.5% of cases. Histopathological diagnosis of endocervical polyps were made based on the presence of dilated endocervical glands and blood vessels in the stroma in section studied.

Squamous intraepithelial lesions are the clinical and morphological manifestation of a productive Human Papilloma Virus (HPV) infection.

In our study the incidence of the preinvasive lesion was 13 % (table-1). Kiranmayi et al [6] found a 15.11% preinvasive lesion in his study.

In our study 13% of the cases showed cervical squamous intraepithelial lesions of which majority of cases were low grade lesions seen in 5th decade. Sections of cervical biopsies displaying cytological abnormality in lower 1/3rd of the epithelium were diagnosed as low grade squamous intraepithelial lesion and dysplasia in lower 2/3rd or full thickness of the cervical epithelium were diagnosed as high grade squamous intraepithelial lesion (HSIL). Study done by Singh et al [11] found 20% prevalence of squamous intraepithelial lesion comparable to the present study. A more aggressive approach in the management of these lesions is warranted, because progression to invasive carcinoma is higher in these lesions.

Out of the different histopathological types of cervical cancer, Squamous cell carcinomas account for 75-80% of cervical cancers, Adenocarcinoma 15-25%, and Adenosquamous carcinomas 3-5% [12]. Adenocarcinomas have been rising in incidence since the 1970s; especially in women younger than 35 years of age. Part of the increase may be attributable to an increasing prevalence of human papilloma virus (HPV) infection As well as due to increasing level of awareness[13].

Cervical cancer is the second or third most common cancer in women with approximately 0.5 million cases worldwide [14]. In India, cancer of cervix has been the most important cancer among women in past two decades [15]. In 2014, 12578 women in the United States were diagnosed with cervical cancer and 4115 women in the united states died from cervical cancer [14]. In the study done by Dhakal et al., squamous cell carcinoma was the commonest histologic type in cervical, Vaginal and vulva cancers [16]. Squamous cell carcinoma of cervix is the most common tumor of the female genital tract, accounting for about 70% of cervical malignancies [17]. In our study also, most common malignant tumor of cervix were Squamous cell carcinoma, 86.8% (out of 38 malignant lesion) followed by Adenocarcinoma 04 (10.5%) and Adenosquamous Carcinoma 01 (2.6%). It was similar in the stated study done by Smith et al, Vinh-hung V et al. and fisher which showed approximately 95% of all invasive cervical cancer were Squamous cell carcinoma followed by Adenocarcinoma. (18-20)

Among the squamous cell carcinoma (33) we found 16 (48.5%) moderately differentiated, 10 (30.3%) vpoorly differentiated and 7 (21.2%) well differentiated type. This is comparable to the literature as approximately 50-60% of cervical Squamous Cell Carcinoma are moderately differentiated cancers and the remainder are evenly distributed between the well and Poorly differentiated categories.[21]

Conclusion

This study demonstrated that inflammatory lesions were the most common non-neoplastic cervical lesion followed by the malignant lesions. Non-neoplastic lesions are common in 30 -40 years age group whereas malignant lesions are common in a decade after in 40-50 years of age group. In our study Squamous cell carcinoma (86.8%) was most common among cervical

malignancy. This study highlights a vast spectrum of cervical lesions and therefore early detection and management of certain lesions can help in reducing the morbidity. Histopathological diagnosis is regarded as the "gold standard" and clinical management and follow up are often solely based on histopathological assessment.

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