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Indian Journal of Pathology and Oncology

Journal homepage: [www.ijpo.co.in](http://www.ijpo.co.in)

## Original Research Article

## Histopathological study of cervical lesions in a tertiary health care centre in south India

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## ARTICLE INFO

## Article history:

Received 26-07-2021

Accepted 19-08-2021

Available online 23-11-2021

## Keywords:

Cervical biopsy

Cervical carcinoma

## ABSTRACT

**Introduction:** Cervix is vulnerable to many pathological changes ranging from inflammation to malignancy. Uterine cervix is gateway to several non-neoplastic and neoplastic gynaecological lesions.. Histopathological studies of cervix along with clinical correlation helps in early diagnosis of lesions as they have advantages of being relatively cheap and technically easy.

**Aims of the Study:** To study the histopathological features of cervical lesions.

**Materials and Methods:** A retrospective study was done in the department of Pathology at Vinayaka Mission's Kirupananda Variyar Medical College and Hospital, Salem for duration of 05 years i.e., from April 2016 to March 2021 in 550 cervical samples.

**Results:** Non neoplastic (92.1%) lesions of cervix were more commonly reported in our study and neoplastic lesions were about 7.8%.

**Conclusion:** Histopathology study of cervical biopsy lesions is a valuable diagnostic procedure. Early detection of cervical lesions may provide an opportunity for appropriate interventions to prevent further complications such as progression from benign to malignant conditions. Adequate screening procedure with follow up cervical biopsies helps in early diagnosis and management of premalignant and malignant lesions.

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## 1. Introduction

Cervix is vulnerable to many pathological changes ranging from inflammation to malignancy.<sup>1</sup> Uterine cervix is gateway to several non-neoplastic and neoplastic gynecological lesions.<sup>2</sup> Non neoplastic cervical lesions occur at all age groups amongst women but are more common in reproductive and sexually active women. Non neoplastic cervical lesions include inflammatory lesions and non- neoplastic tumor like lesions. Majority of these

inflammatory lesions are acute cervicitis, chronic cervicitis caused by various bacteria, viruses and fungi.<sup>3</sup> Cervicitis caused by Human papilloma virus carries high risk for Condyloma acuminata, Cervical intraepithelial neoplasia (CIN) and carcinoma.<sup>4</sup> Among non- neoplastic tumor like conditions are endocervical hyperplasia, endometriosis, polyps and Nabothian cysts.<sup>5</sup> Carcinomas of the female genital tract, particularly cervical carcinoma accounts for almost 12% of all cancers in women, and so represents the second most frequent malignancy in the world after carcinoma of breast.<sup>6</sup>

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## 2. Aims & Objectives

To study the Histopathological features of cervical lesions.

## 3. Materials and Methods

The study was done after approval from Institutional ethical committee.

A retrospective study was done in the department of Pathology at Vinayaka Mission's Kirupananda Variyar Medical College and Hospital, Salem for duration of 05 years i.e, from April 2016 to March 2021 in 550 cervical samples.

### 3.1. Inclusion criteria

All cervical biopsies and hysterectomy specimens sent to the department of pathology for histopathological examination.

### 3.2. Exclusion criteria

Cervical biopsies found to be unsatisfactory for evaluation on microscopic examination after processing and endometrial, myometrial and ovarian lesions in hysterectomy specimens.

### 3.3. Methodology

A total of 550 cervical specimens were received in the department of Pathology from the department of obstetrics and gynaecology and specimens were in the form of cervical punch biopsies, hysterectomies, Wertheim's hysterectomy and cervical amputation. All the specimens and biopsy were fixed in 10% formalin and paraffin blocks were prepared, which were cut at 5-micron thickness and were subsequently stained with hematoxylin and eosin. A preformed proforma was prepared and included demographics such as clinical features, gross appearance and histopathological features. Gross examination was done and features such as size, consistency, external appearance and appearance of cut surface were noted. The specimens were allowed to fix in 10% formalin for 24-48 hours. The sections were dehydrated in alcohol, cleared in xylol and embedded in paraffin wax to prepare the paraffin blocks. Multiple thin sections of 4 -5 microns in thickness were cut. Multiple blocks from different areas of lesion were studied in each case. For histopathological study, the paraffin embedded sections were stained by Hematoxylin and Eosin (H & E) stain. The histopathological classification of tumors was done according to recommendations by W.H.O.

### 3.4. Statistical analysis

Data is entered in Microsoft Excel sheet and analysed using SPSS version 20.0 statistical software. Data depicted in the form of tables, graph's percentage and proportion.

## 4. Results

**Table 1:** Age distribution

Age in years	No. of cases	%
20-30	44	8
31-40	128	23.2
41-50	319	58
51-60	35	6.3
61-70	20	3.6
71-80	04	0.7
Total	550	99%

In our study age distribution range from 20-80 years with majority of cases included among 41-50 years which constituted about 58% (319/550). Next common age group was among 31-40 years constituting 23.2% (128/550). 8% in 20-30 years, 6.3% (35/550) in 51-60 years, 3.6% (20/550) in 61-70 years and least noted in 71-80 years i.e, 0.7% (04/550).

**Table 2:** Clinical complaints

Clinical features	No. of cases	%
White discharge	396	72
Back ache + Abdominal pain	130	23.6
Bleeding per vagina	09	1.6
Pelvic pain	10	1.8
Dyspareunia	05	0.9
Total	550	99.9%

In our study 72% (396/550) patients presented with white discharge, 23.6% (130/550) with Back ache + Abdominal pain, Bleeding per vagina in 1.6% (09/550), 1.8% (10/550) with pelvic pain and only 0.9% (05/550) presented with dyspareunia.

**Table 3:** Distribution of cervical lesions

Cervical lesions	Non neoplastic
Non neoplastic	507(92.1%)
Benign lesions	20(3.6%)
Preinvasive lesions	13(2.3%)
Invasive lesion	10(1.8%)
Present study	550 (99.8%)

92.1% (507/550) lesions were Non neoplastic and majority were inflammatory in nature second most common was benign lesions 20 (3.6%). Invasive lesions occupied only 1.8% (10/550) and preinvasive about 2.3% (13/550) receptively.

In our study among non neoplastic cervical lesions, majority of the cases reported as chronic non specific cervicitis which constituted 57.6% (317/550), next common was chronic papillary endocervicitis 19.0% (105/550). Among neoplastic lesions of cervix, Squamous cell carcinoma was reported in 2.6%(09/550) cases and only one

**Table 4:** Histopathological distribution of non neoplastic, preinvasive and invasive cervical lesions

Cervical lesions	No. of cases	%
Chronic non specific cervicitis	317	57.6
Chronic Papillary endocervicitis	105	19.0
Endocervical polyp	54	9.8
Erosive cervicitis	20	3.6
Pseudoepitheliomatous hyperplasia	11	2
Cervical leiomyoma	20	3.6
Carcinoma insitu	02	0.36
CIN 1	03	0.54
CIN 2	05	0.9
CIN 3	03	0.54
Squamous cell carcinoma	09	1.6
Adenocarcinoma	01	0.18
Total	550	99.8%

case of adenocarcinoma of cervix was reported. Cervical leiomyoma was reported in 3.6% (20/550) cases.

**Table 5:** Classification according to Broder's grading

Cervical carcinoma	No. of cases	%
Poorly- Differentiated	02	22.2
Moderately- Differentiated	06	66.6
Well- Differentiated	01	11.1
Total	09	99.9

In the present study according to Broder's grading, Moderately differentiated squamous cell carcinoma was most commonly reported (66.6%), Poorly differentiated in 22.2% and well differentiated in 11.1%.

## 5. Discussion

### 5.1. Comparison by age distribution

In our study age distribution range from 20-80 years with majority of cases included among 41-50 years which constituted about 58%. Next common age group was among 31-40 years constituting 23.2%.

In Avani Jain et al. study<sup>7</sup> the age of the females subjected to biopsies ranged from 20 to 80 years with maximum of them belonging to the age group of 41-50 years (40.5%). Age of the women with pre-invasive and invasive lesions ranged from 25-75 years with lesions being most common in 36-45 years. Mean age of the females with preinvasive and invasive lesions was 49.2 years. In Shailejkumar et al. study<sup>8</sup> highest incidence i.e. 06 cases (27.27%) was found in age group of 46-55 years. In Francis A. Faduyile et al. study<sup>9</sup> The mean age was 49 ± 13.0 years with an age range of 19 to 87 years. Most of the cervical biopsies were from patients in the 5th decade of life, followed by patients in the 31-40 years age group. In Thirukumar M et al. study<sup>10</sup> age distribution range from 19-

85 years majority were among 40-49 years 180(40.6%) and next age group 105(23%) 30 -39 years 105(23%).

### 5.2. Comparison by Clinical features

In our study 72% patients presented with white discharge, 23.6% with Back ache + Abdominal pain, Bleeding per vagina was noted in 1.6% cases and 1.8% with pelvic pain and only 0.9% presented with dyspareunia. Similar findings were observed in respective studies.

In a study conducted by Avani Jain et al.<sup>7</sup> where she also found white discharge 108 cases (54%) as commonest complaint followed by backache, abdominal pain (25%) and bleeding per vagina (15%). Additional findings like nabothian cysts and squamous metaplasia was seen in 30 and 16 cases respectively.

In Thirukumar M et al. study<sup>10</sup> according to presentation of the patients with non-neoplastic cervical lesion, about 20.4%, presented with whitish per vaginal discharge, 18.9% presented with the mass in the vagina. While abnormal uterine bleeding was the presentation in 48.9% of the patients, 6.1% of the patients had post coital bleeding. Only 5.7% of the patients presented with abdominal pain. Manoja et al study<sup>11</sup> most common clinical complaint was white discharge 130 (52%) followed by backache and abdominal pain 70 (28%), bleeding per vagina 30(12%) pelvic pain 20 (8%).

Hence our findings were in collaboration with other studies respectively.

Non neoplastic cervical lesions were most commonly reported in our study and the findings were in collaboration with Avani Jain et al study,<sup>7</sup> Manoja et al study.<sup>11</sup>

Thirukumar M et al study<sup>10</sup> and Sheela at al study<sup>12</sup> respectively.

In our study among non neoplastic cervical lesions, majority were inflammatory in nature and similar findings were observed in Avani Jain et al study,<sup>7</sup> Manoja et al. study.<sup>11</sup>

Whereas Francis A. Faduyile et al. study<sup>9</sup> observed neoplastic lesions as more common.

### 5.3. According to Broder's grading system

Our study reported Moderately differentiated squamous cell carcinoma in 66.6% cases, Poorly differentiated in 22.2% and well differentiated in 11.1% cases respectively. In a study conducted by Thirukumar M et al<sup>10</sup> classified well, moderately and poorly differentiated at the time of initial diagnosis and constituting cases as 9 (20%), 32 (71.1%) and 4 (8.9%) respectively.

## 6. Conclusion

Histopathology study of cervical biopsy lesions is a valuable diagnostic procedure. Early detection of cervical lesions may provide an opportunity for appropriate interventions

**Table 6:** Comparison by distribution of cervical lesions

Comparative studies	Non neoplastic	Benign lesions	Preinvasive lesions	Invasive lesions	Total no. of cases
Manoja et al study <sup>11</sup>	212(84.8%)	01(0.4%)	20(8%)	17(6.8%)	250(100%)
Thirukumar M et al study <sup>10</sup>	425(82.6%)	11(2.1%)	20(3.9%)	52(10.2%)	508(99%)
Sheela at al study <sup>12</sup>	516(83.4%)	12(1.9%)	10(1.6%)	80(12.9%)	618(99.5%)
Avani Jain et al study <sup>7</sup>	146(73%)	01(0.5%)	46(23%)	7(3.5%)	200(100%)
Present study	507(92.1%)	20(3.6%)	13(2.3%)	10(1.8%)	550 (99.8%)

**Table 7:** Comparative studies on histopathological distribution of non neoplastic, preinvasive and invasive cervical lesions

Cervical lesions	Avani Jain et al study <sup>7</sup>	V Manoja et al study <sup>11</sup>	Francis A. Faduyile et al study <sup>9</sup>	Present study
Chronic non specific cervicitis	70(35%)	180(72%)	91(10.4%)	317(57.6%)
Chronic Papillary endocervicitis	43(21%)	30(12%)		105(19.0%)
Endocervical polyp	25(12%)	01(0.4%)	271(4.6%)	54 (9.8%)
Erosive cervicitis	6(3%)	-		20(3.6%)
Pseudoepitheliomatous hyperplasia	2(1%)	-	-	11(2%)
Cervical leiomyoma	1(0.5%)	01(0.4%)	-	20(3.6%)
Carcinoma insitu	-		-	02(0.36%)
CIN 1	40(20%)	11(4.4%)		03(0.54%)
CIN 2	5(2%)	5(2%)	132(15.1%)	05(0.9%)
CIN 3	1(0.5%)	4(1.6%)		03(0.54%)
Squamous cell carcinoma	6(3%)	16(6.4%)	324(37.0%)	09(1.6%)
Adenocarcinoma	1(0.5%)	01(0.4%)	20(2.2%)	01(0.18%)
Others		01(0.4%)	36(4.1%)	-
Total	200	250	874	550

to prevent further complications such as progression from benign to malignant conditions Adequate screening procedure with follow up cervical biopsies helps in early diagnosis and management of premalignant and malignant lesions.

## 7. Source of Funding

None.

## 8. Conflict of Interest

The authors declare no conflict of interest.

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**Cite this article:** Sathiyamurthy K, Waheeda S, Sangeetha N. Histopathological study of cervical lesions in a tertiary health care centre in south India. *Indian J Pathol Oncol* 2021;8(4):447-451.