

Spectrum of Various Lesions in Cervical Biopsies in North West Rajasthan: A Prospective Histopathological Study

Qadir Fatima¹, Suman Verma^{2*}, Narendra Kumar Bairwa³, L.A. Gauri⁴

¹M.D. Professor, Department of Pathology, S.P. Medical College, Bikaner, Rajasthan, India.

^{2*}P.G. Resident, Department of Pathology, S.P. Medical College, Bikaner, Rajasthan, India.

³M.D., Senior Resident, Department of Medicine, S.P. Medical College, Bikaner, Rajasthan, India.

⁴MD, FICP, Senior Professor of Medicine In charge:

Clinical Immunology & Rheumatology Division, S.P. Medical College, Bikaner, Rajasthan, India.

ABSTRACT

Background: In India, 90,000 of new cases of cervical cancer occur every year. Cancer that develops in the ectocervix is usually squamous cell carcinoma, and around 80- 90% of cervical cancer cases (more than 90% in India) are of this type. Histopathological studies of the cervix along with clinical correlation are very important for early diagnosis in diseases of the cervical diseases. In this study, we are trying to establish a specific spectrum of various types of neoplastic and non-neoplastic cervical lesions on the basis of their histopathological features in North West Rajasthan.

Method: In this study we included 300 patients irrespective of their age, who attended the hospital and cervical biopsies were sent for histopathological confirmation to the department of pathology, Sardar Patel Medical College, Bikaner, Rajasthan, India.

Results: Histopathological study of various lesions in cervical biopsies in this region showed that 64.7% lesions are neoplastic type and 35.3 % are non- neoplastic type. Highest incidence of non-neoplastic lesions in 41-50 years (33.01%) and neoplastic lesions 41-50 years (35.05 %). Cervical lesions are most common in Hindu community (79 %), Sikhs were second to Hindus (6.33 %) and Muslims have least incidence

(6.33%). In non-neoplastic pathology, most common is chronic non-specific cervicitis (46.22 %). Endocervical polyp is most common type of polyp (71.17 %). Squamous cell carcinoma has the highest incidence (87.62%) among various neoplastic lesions and moderately differentiated squamous cell carcinoma is most common type of squamous cell carcinoma (92.35%).


Keywords: Non-neoplastic, Neoplastic Cervical Lesion, CNCS, Squamous Cell Carcinoma, Polyp.

*Correspondence to:

Dr Suman Verma,
P.G. Resident,
Department of Pathology,
S.P. Medical College, Bikaner, Rajasthan, India.

Article History:

Received: 24-12-2016, Revised: 07-01-2017, Accepted: 25-01-2017

Access this article online	
Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2017.3.1.020	

INTRODUCTION

The cervix is the elongated fibro-muscular portion of the uterus that measures 2.5 to 3.0 cm¹, lined by two types of epithelium, an outer squamous epithelium and internal mucin secreting columnar epithelium, with unique junctional area containing reserve/basal cells². This epithelium is vulnerable to many pathological changes ranging from inflammation to an extremely lethal malignant transformation.

Cancer of cervix accounts for 4,70,000 new cases of all cancer each year in the world.³ Cervical cancer is the third largest cause of cancer mortality in India after cancers of the mouth & oropharynx and oesophagus, accounting for nearly 10% of all cancer related deaths in the country. In India, 90,000 of new cases of cervical cancer occur every year. Cancer that develops in the ectocervix is usually squamous cell carcinoma, and around 80- 90% of cervical cancer cases (more than 90% in India) are of

this type.⁴ To detect this widely prevalent cancer at an early stage, the simplest test has been a pap smear. Reporting of pap smears is carried out by the Bethesda System.⁵ Among the various non-neoplastic lesions; cervical inflammations due to non-infective and infective causes were common. Histopathological studies of the cervix along with clinical correlation are very important for early diagnosis in diseases of the cervical diseases as they have advantage of being readily available, relatively cheap and technically easy.⁶ Non-neoplastic diseases of the cervix are predominantly inflammatory in nature.

The various risk factors for carcinoma cervix include age at first intercourse, increased parity and sexually transmitted diseases, HPV, multiple sex partners, racial factors, socio-economic status, smoking, oral contraceptives, male factors and immunological factors.⁷

In this study, we are trying to establish a specific spectrum of various types of neoplastic and non-neoplastic cervical lesions on the basis of their histopathological features in north west Rajasthan.

MATERIALS AND METHODS

The study has been carried out in the department of Pathology, Sardar Patel medical college and associated group of hospitals, Bikaner over a period of 2.5 years. In this study we included 300 patients irrespective of their age, religion who attended the hospital and brief history including chief complaints, obstetric history and relevant past history was taken and cervical biopsies

were sent for histopathological confirmation to the department of pathology, Sardar Patel Medical College, Bikaner, Rajasthan.

INCLUSION CRITERIA

- All cervical biopsy specimen

EXCLUSION CRITERIA

- Autolyzed specimen
- Inadequate biopsy

The specimen and biopsy were received in 10% formalin. Gross features of the specimen received were recorded. Representative sections were taken and after processing tissue was embedded in paraffin wax to make blocks. After making section in microtome staining was carried out with Haematoxylin and Eosin (H&E) stain.

Table 1: Showing age distribution of cases of various cervical lesions.

Age	Total no. of cases	Percentage (%)	Total no of non-neoplastic cases	Percentage (%)	Total no of non-neoplastic cases	Percentage (%)
21-30	21	7.0 %	18	16.98%	3	1.54%
31-40	70	23.33 %	35	33.01%	35	18.04%
41-50	100	33.33 %	32	30.18%	68	35.05%
51-60	62	20.66 %	12	11.32%	50	25.77%
61-70	33	11.0 %	8	7.54%	25	12.88%
71-80	14	4.66 %	1	0.94%	13	6.70%
Total	300	100	106	100	194	100

Table 2: Frequency of cervical lesions between various religions.

Religion	Frequency of cervical lesions	Percentage (%)
Hindus	237	79.00 %
Muslims	19	6.33 %
Sikhs	44	14.66 %
Others	0.0	0.0 %

Table 3: Frequency of non-neoplastic and neoplastic lesions in various groups according to parity.

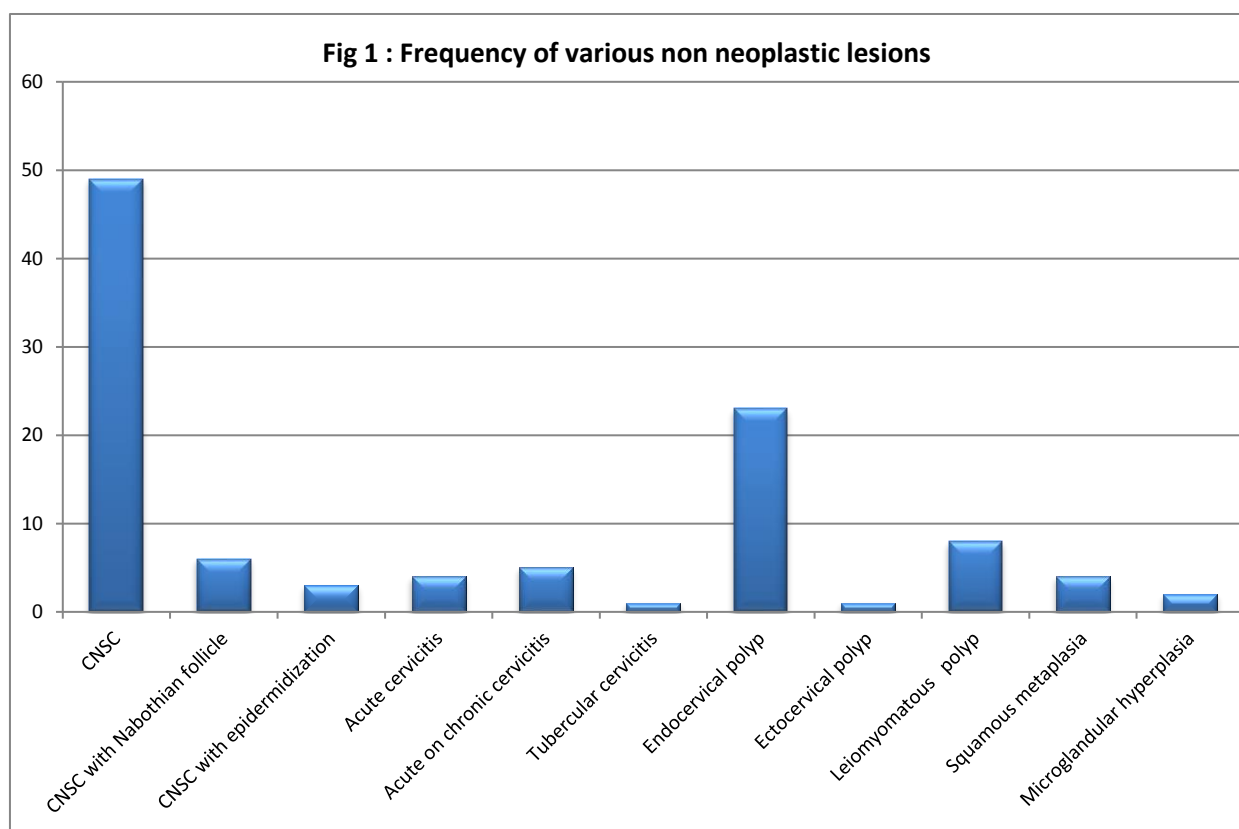
Parity	No of non-neoplastic cases	Percentage (%)	No of neoplastic cases	Percentage (%)
Nullipara	5	4.71 %	3	1.54%
1 to 2	51	48.11 %	29	14.94%
3 to 4	47	44.33 %	131	67.52%
5 or more	3	2.83 %	31	29.24%
Total	106	100	194	100

Table 4: Showing clinical features of patients with non -neoplastic lesions.

Clinical features	No. of non-neoplastic cases	Percentage (%)	No. of neoplastic cases	Percentage (%)
Bleeding PV	32	30.18 %	172	88.65%
Discharge	70	66.03 %	57	29.38%
Growth / polyp	31	29.24 %	172	88.65%
Bleeding with discharge	11	10.37 %	48	24.74%
Others (Pain abdomen, pelvic pain, irregular menstrual bleeding and backache)	10	9.43 %	38	20.0%

Table 5: Frequency of various non-neoplastic lesions.

S.No.	Non-neoplastic lesion	No of cases	Percentage (%)
1.	Chronic nonspecific cervicitis	49	46.22 %
2.	Chronic nonspecific cervicitis with Nabothian follicle	6	5.66 %
3.	Chronic nonspecific cervicitis with epidermidization	3	2.83 %
4.	Acute cervicitis (Non-specific cervicitis)	4	3.77 %
5.	Acute on chronic cervicitis (Non-specific cervicitis)	5	4.71 %
6.	Tubercular cervicitis (Chronic specific cervicitis)	1	0.94 %
7.	Polyps		
	a. Endocervical polyp	23	21.69 %
	b. Ectocervical polyp	1	0.94 %
	c. Leiomyomatous polyp	8	7.5 %
8.	Squamous metaplasia	4	3.77 %
9.	Microglandular hyperplasia	2	1.88 %
	Total	106	100



OBSERVATIONS

Results of the study were analyzed and observations were made in graphical and tabulated forms to represent the correlation between variables as follows.

In this study, total 300 cases were studied. Highest incidence i.e. 100 cases (33.33 %) was found in age group of 41-50 years and only two age groups i.e. 41-50 and 51-60 have 170 cases out of 300 (56.66 %). No any case was found of age below 21 and above 80. Mean age of incidence of cervical lesion is 49.16 years. Out of 300, 106 cases were diagnosed as non-neoplastic and highest incidence i.e. 35 cases (33.01 %) was found in age group of 41-50 years and only two age groups i.e. 31-40 and 41-50 have 67 cases (63.19 %) out of 106 cases. Mean age of incidence of non-neoplastic cervical lesion is 43.87 years. Rest 194 cases were diagnosed neoplastic. Highest incidence i.e. 68 cases

(35.05 %) was found in age group of 41-50 years and only two age groups i.e. 41-50 and 51-60 have 118 cases (55.82 %) out of 194 cases. Mean age of incidence neoplastic cervical lesion is 52.22 years.

In our study, we found that most of the patients belong to Hindu community i.e. 237 cases (79 %). Sikhs were next to Hindus with no. of patients 19 (6.33 %) and Muslims were having least incidence i.e. 19 cases (6.33%). We didn't found any case of other communities. Variability of these results may be subjected to specific population distribution in North West Rajasthan.

As table-3 shows, patients with parity group of 1-2 has highest incidence of non-neoplastic lesions i.e. 51 cases (48.11 %). In other aspect, parity group of 3-4 have highest incidence of neoplastic lesions i.e. 131 cases (67.52 %). So this can be stated

that there are more chances of development non-neoplastic lesion in parity group of 1-2 and neoplastic lesions in parity group of 3-4. As table 4 showing, patients with non-neoplastic cervical lesions presented to us with discharge predominantly i.e. 70 cases (66.03 %). In others, bleeding PV was found in 32 cases (30.18 %), bleeding PV with discharge in 11 cases, growth or polyp in 31 cases (29.24 %).

Patients with neoplastic cervical lesions presented with bleeding and growth predominantly i.e. 172 cases each (88.65 % each). In others, discharge was found in 57 (29.38 %), bleeding PV with discharge in 48 cases (24.74 %).

As table 5 showing, frequency of various non-neoplastic lesions out of 106 cases, in which chronic nonspecific cervicitis was predominant with 49 cases (46.22 %). In polyps, with highest

incidence was present in endocervical polyp with 23 cases (21.69 %) and leiomyomatous polyp next to this i.e. 8 cases (7.5 %).

As table 6 showing frequency of various neoplastic lesions out of 194 cases, in which squamous cell carcinoma has the highest incidence with 170 cases (87.62 %). Moderately differentiated squamous cell carcinoma alone has 157 cases (80.92 %) and has highest proportion in all types of squamous cell carcinoma (92.35%).

Squamous cell carcinoma has highest incidence in all neoplastic cases, table 7 showing frequency of various types and variants of squamous cell carcinomas. Out of 170 cases of squamous cell carcinoma, moderately differentiated type SCC has highest incidence with 157 cases (92.35%). Poorly differentiated SCC has 8 cases (4.70%) and papillary SCC has one case (0.58%).

Table 6: Frequency of various neoplastic lesions

S.No.	Neoplastic lesion	No of cases	Percentage (%)
1.	Epithelial dysplasia		
	a. Mild (CIN I)	5	2.57 %
	b. Moderate (CIN II)	2	1.03 %
	c. Severe (CIN III)	2	1.03 %
2.	Ca in situ	2	1.03%
3.	Squamous cell carcinoma		
	a. Well differentiated SCC	4	2.06 %
	b. Moderately differentiated SCC	157	80.92 %
	c. Poorly differentiated SCC	8	4.12 %
	d. Papillary SCC	1	0.51%
	TOTAL	170	87.62 %
4.	Adenocarcinoma		
	a. Adenocarcinoma (Early invasive)	3	1.54%
	b. Papillary (Serous) adenocarcinoma	6	3.05%
	c. Mucinous adenocarcinoma	2	1.03 %
	TOTAL	11	5.67 %
5.	Adenosquamous carcinoma	1	0.51 %
6.	Undifferentiated Ca	1	0.51 %
	TOTAL	194	100

Fig 2: Frequency of different types of neoplastic lesions

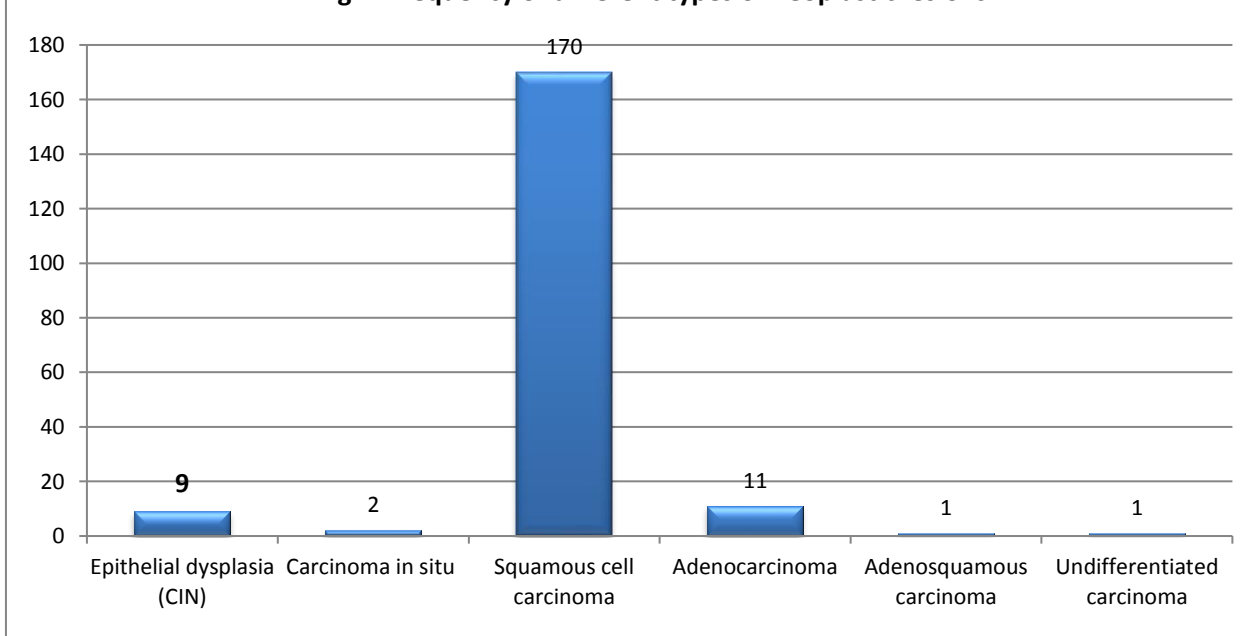


Table 7: Frequency of different types of Squamous cell carcinoma and its variants

Type / Variant of SCC	No of cases	Percentage (%)
1. Well differentiated SCC	4	2.35%
2. Moderately differentiated SCC	157	92.35%
3. Poorly differentiated SCC	8	4.70%
4. Papillary SCC	1	0.58 %
Total	170	100

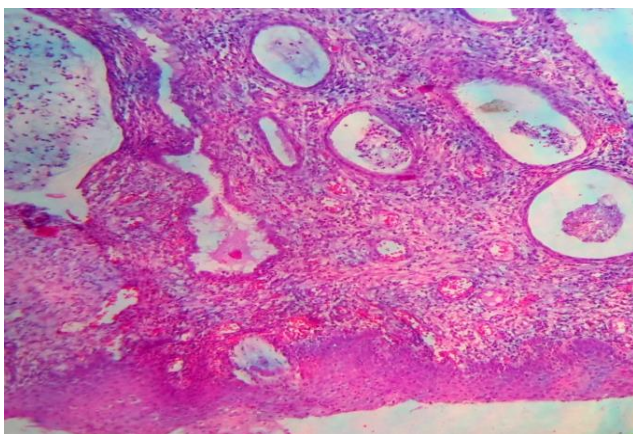
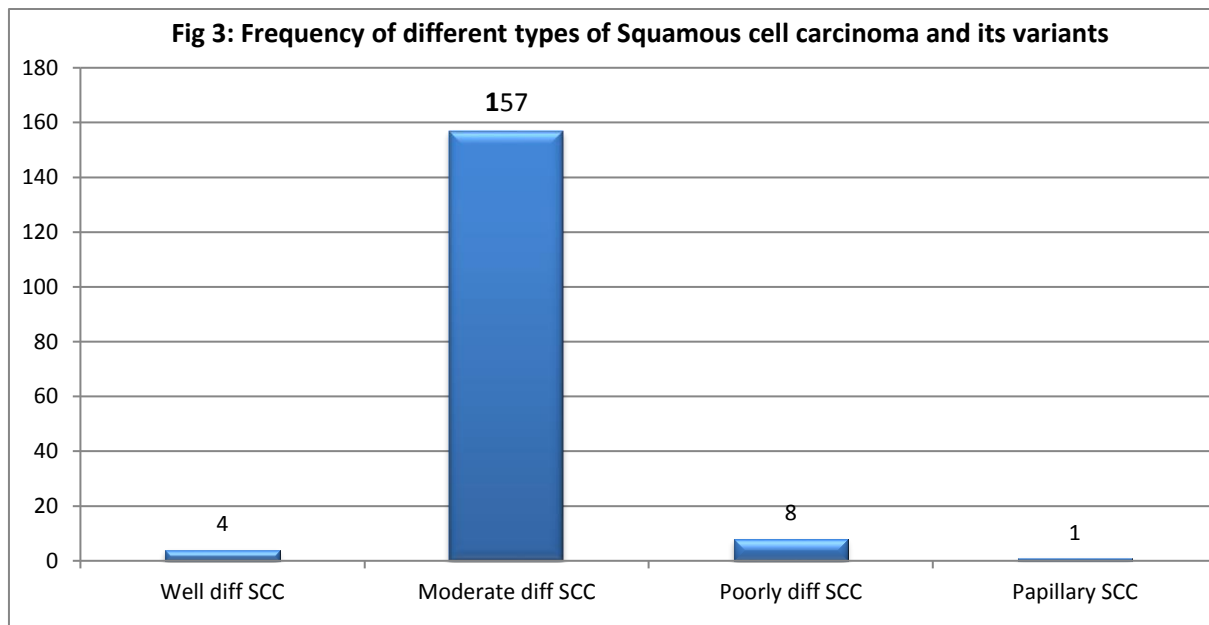


Fig A: Chronic non-specific cervicitis with Nabothian follicle showing stratified squamous epithelium and subepithelial collection of lymphocytes.(H&E 10X)

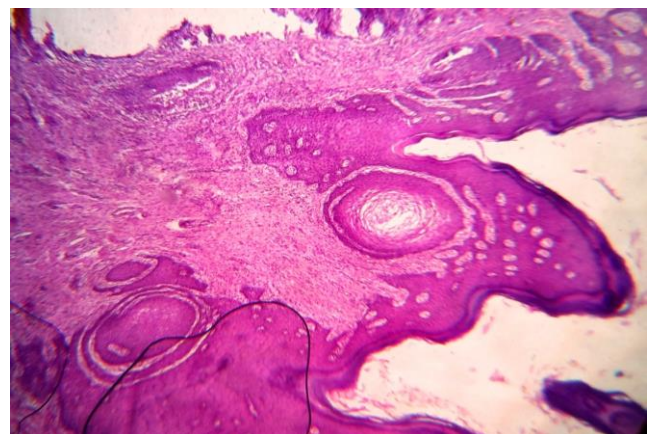


Fig B: Chronic non-specific cervicitis with epidermidization showing keratinized stratified squamous epithelium and squamous metaplasia.(H&E 10X)

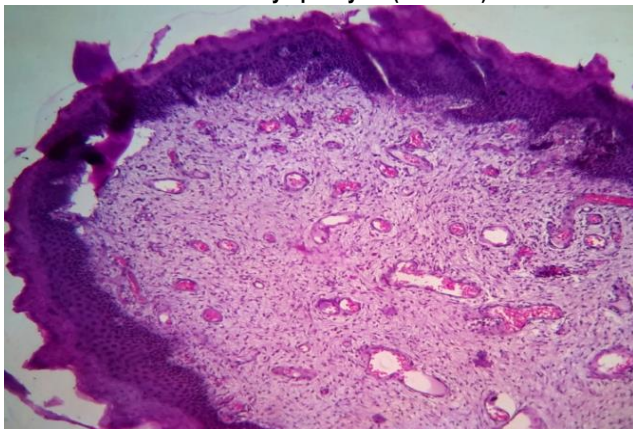


Fig C: Ectocervical polyp showing stratified squamous epithelium and proliferation of blood vessels and stroma (H&E 40X)

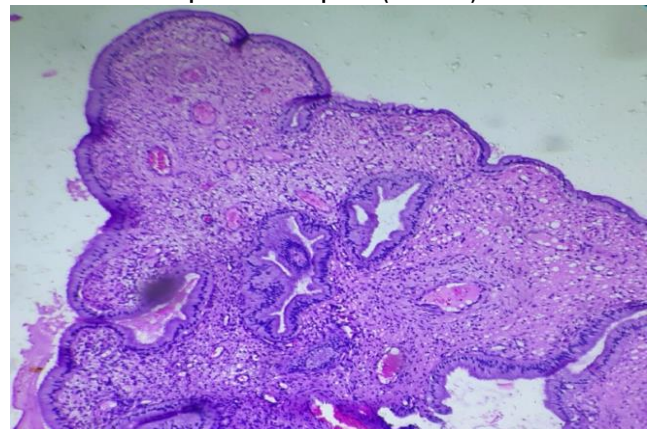


Fig D: Endocervical polyp showing columnar epithelium with basally located nuclei and proliferation of blood vessels (H&E 10X)

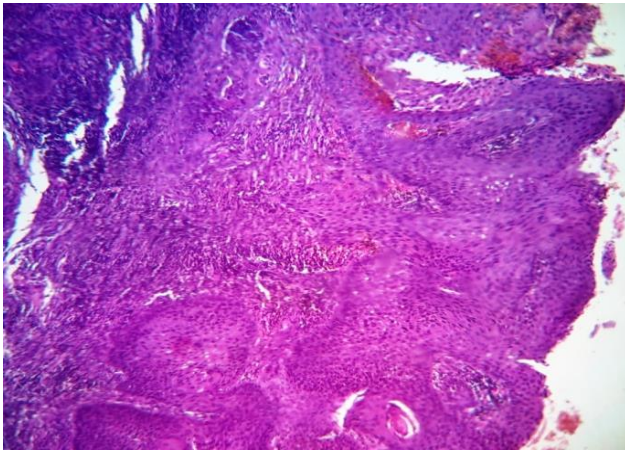


Fig E: Carcinoma insitu showing nuclear atypia throughout the thickness of epithelium, while basement membrane remains intact. (H&E 10X)

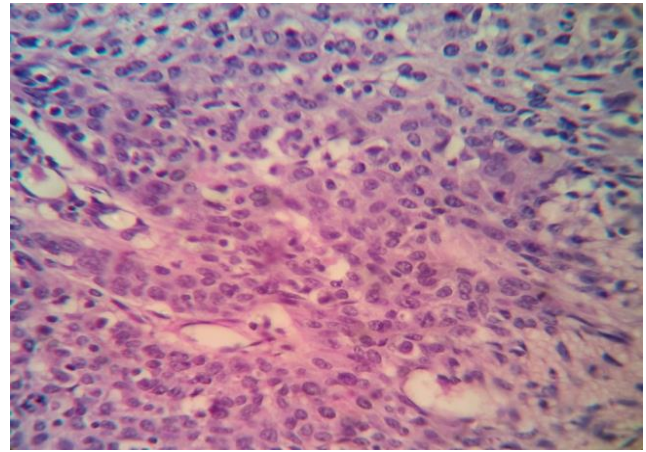


Fig F: Moderately differentiated squamous cell carcinoma showing intercellular bridges and poorly formed keratin pearls. (H&E 40X)

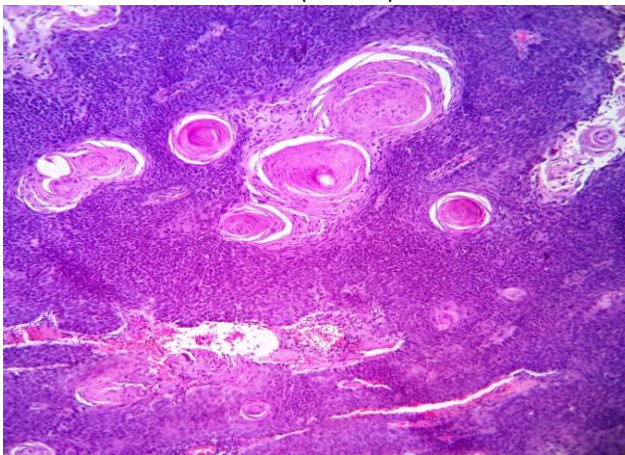


Fig G: Well differentiated squamous cell carcinoma showing many well-formed keratin pearls and individual cell keratinization and intercellular bridges (H&E 10X)

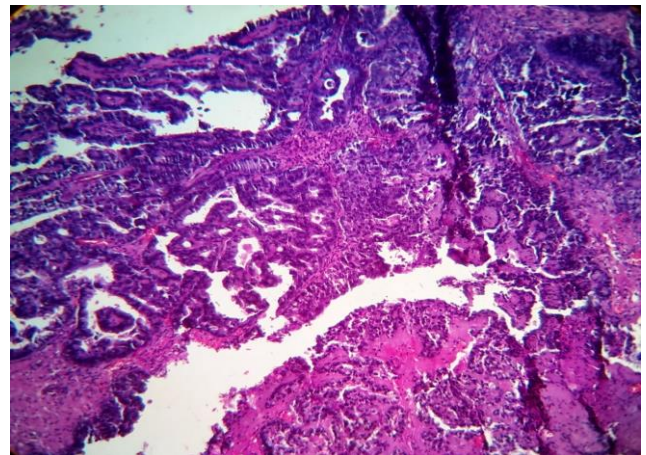


Fig H: Papillary adenocarcinoma showing papillae with fibrovascular core (H&E 10X)

DISCUSSION

The present study aimed to analyze different neoplastic and non-neoplastic lesions of cervix and to provide a improved approach in the management of cervical lesions. We studied 300 cases of various cervical pathologies and data was analyzed to know the relative frequencies and age incidences of different cervical lesions. The results observed have been compared with similar studies done in India and abroad.

Out of 300 cases, highest incidence i.e. 100 cases (33.33%) was found in age group of 41-50 years and second to it was age group 31-40 which has 70 cases (23.33%). So only two age groups i.e. 41-50 and 51-60 have 170 cases (56.66%). These results are similar to study done by Al-Jashamy Karim et al, which showed that highest incidence of cervical lesion was found in 31-40 and 41-50 age group i.e. 29.87% each.⁸ Our results are also similar to the study done by Jayadeep Grewal et al, who got maximum number of patients in 41-50 years age group i.e. 47.9% followed by 31-40 age group 22.18%.⁹

In present study, 106 cases were diagnosed non-neoplastic and out of which highest incidence i.e. 35 cases (33.01%) were found in age group of 41-50 years. These results match with study of FN Nwachokor et al, in which 21.73% cases were present in age group 30-39, 33.69% in 40-49 age group and 23.91% in 50-59 age group. The peak age incidence was 40-49 years accounting for 33.7% of non-neoplastic cases.¹⁰ Present study results also

follow the study done by Naveen Kumar, which show highest incidence i.e. 45.85 % in the age group of 40- 49 years, followed by 37.21% in 30-39.¹¹ Our study results also similar to an another Nigerian study done by Olutoyin. G. Omoniyi-Esan et al, (2006) which showed the age range of non-neoplastic cervical lesion 20-69 years while the peak age incidence was 40-49 years with 34.7% cases.¹²

In present study, 194 cases were diagnosed as neoplastic pathology and out of highest incidence i.e. 68 cases (35.05 %) was found in age group of 41-50 years and only two age groups i.e. 41-50 and 51-60 have 118 cases (55.82 %) out of 194 cases. These results are similar to study done by S Shanthala et al, which expresses that highest incidence of cervical neoplasia is present in age group 40-49 years with 31.31% cases and 28.45% cases in the age group of 50-59 years.¹³ Our results are also similar to study done by Sushila Chaudhary et al, which found highest incidence of cervical neoplasia in age group 51-60 years and 41-50 years with 32.26% and 31.45% cases respectively.¹⁴

In our study, we found that most of the patients belong to Hindu community i.e. 237 cases (79%). Sikhs were second after Hindus with 44 cases (14.66%) and Muslims were having least incidence i.e. 19 cases (6.33%). No case was found from any other community. These results are close to study done by S Shanthala et al, in which Hindus with highest incidence i.e. 97.66%, Muslims were 2.03% and Christians were 0.26% and study of Saima

Chaudhry, which showed that highest incidence of cervical lesion found in Hindus with 56.56% , Muslims 24.24%, Christians 3.03% and other religions with 16.16% cases.¹⁵

Our study correlates parity of the patients with incidence of cervical lesions. The parity group of 1-2 has highest incidence of non-neoplastic lesions i.e. 51 cases (48.11%). Parity group 3-4 has 47 cases (44.33%). Highest incidence of neoplastic lesions i.e. 131 cases (67.52%) found in parity group 3-4. Parity group of '5 or more' has neoplastic cases 31 (29.24%). Kishor H. Suryawanshi et al told about highest incidence of cervical lesion in 1-2 and 3-4 parity 45.45% and 46.96% cases respectively.¹⁶ Misra et al¹⁷ & Nikumbh et al¹⁸ also observed that multiparous women (57% and 48%) were commonly affected. Casla neda et al had also stressed the number of pregnancies as a risk factor for developing cervical dysplasia.¹⁹ So this can be said that a multiparous woman is more prone to develop a cervical lesion in comparison to nullipara or parity with one or two children.

In our study, patients with non-neoplastic cervical lesions presented to us with discharge predominantly i.e. 70 cases (66.03%). In others, bleeding PV was found in 32 cases (30.18%), bleeding PV with discharge in 11 cases (10.37%), growth or polyp in 31 cases (29.24%). Kishor H. Suryawanshi et al says that the most common presenting complaint was white discharge per vaginam (leucorrhoea) in 70.0 % cases. History of low backache was present in 28.78 %, pain in abdomen in 21.21%, irregular bleeding PV in 10.30 % and 2.12 % patients had complaint of dyspareunia.¹⁶ Deepa Hatwal et al showed that white discharge per vagina was seen in 33.65%, mass per vagina in 25.39%, irregular menses and excessive bleeding per vagina in 25.71%, pain in abdomen in 6.98% and post coital bleeding in 8.25% patients.²⁰ Similarly Naveen Kumar told that excessive vaginal bleeding is the most common presenting complaint seen in 41.5% cases of non-neoplastic cervical lesion, vaginal mass in 32.5 %.

A majority of cases with inflammatory pathology were due to non-specific causes. Chronic non-specific cervicitis is the most common lesion constituted 49 cases (46.22%) out of total 106 lesions. Study of Jyothi et al is comparable to our study who showed cases of CNCS 49.5%²¹, whereas study Kishor H. Suryawanshi et al showed that majority of cases (76.67%) are due to non-specific inflammation. In study of FN Nwachokor et al chronic non-specific cervicitis accounted for 53.2% of all non-neoplastic lesions. But this report is quite different in data with previous work done by Omoniyi Esan et al, where chronic non-specific cervicitis accounted for 82% of all non-neoplastic lesions.²²

In current study, chronic non-specific cervicitis with nabothian cysts were found in 6 cases (5.66%). The result found in this study are intermediate between the study conducted by Jyothi et al (4.71%) and Purnima Poste et al (7.37%).²³

Polypoid lesions also are important non-neoplastic lesions as these may have a considerable proportion in this category. In our study 23 cases (21.69%) of endocervical polyp, one case (0.94%) of ectocervical polyp and 8 cases (7.5%) of leiomyomatous polyp were found. Ratio of endocervical polyps is slight higher than study of FN Nwachokor et al (16.3%) and Poste et al (15.18%). Whereas our study is similar to study of Usha et al which found leiomyomatous polyp 6.3%.²⁴ Micro glandular hyperplasia is observed in two cases (1.88%) out of 106 non-neoplastic cases which is very close to study conducted by Naveen Kumar

(1.44%)., Poste et al (1.19 %). Acute cervicitis accounted 4 cases (3.77%) of non-neoplastic cervical lesions variable with study of Olutoyin. G. Omoniyi-Esan et al (2.0%) and FN Nwachokor et al (7.6 %). Likewise squamous metaplasia was present in 4 cases (3.77 %) which is also variable in comparison to study done by Grewal et al (12.09%) and Poste et al (10.16%).

In our study only one case of Tubercular cervicitis was found (0.94%) alike study of Naveen Kumar who got only one case out of 833 cases (0.12%). Jayadeep Grewal et al and FN Nwachokor et al didn't find even one case in spite of taking total 311 and 176 non-neoplastic cases respectively.

As described, we got 194 cases (64.7%) of various neoplastic lesions. Out of these 194 cases, squamous cell carcinoma has the highest incidence with 170 cases (87.62 %) which is near to Jayadeep Grewal et al (92.59%), Poste et al (95.73 %), Solapurkar et al (95.70%) and Gupta et al (94.26%).

Present study divides squamous cell carcinoma according to Broader's classification in well differentiated SCC with 4 cases (2.06 %), moderately differentiated SCC with 157 cases (80.92%) and poorly differentiated SCC with 8 cases (4.12%) likewise the study of Poste et al which shows well-differentiated squamous cell carcinoma (30.09%), moderately differentiated squamous cell carcinoma (63.13%) and poorly differentiated squamous cell carcinoma (5.42%). In study done by Atul Jain et al, highest occurrence of poorly differentiated squamous cell carcinoma (64%) was noted²⁵, while in study done by Husin N et al highest occurrence of moderately differentiated squamous cell carcinoma (44.9%) was noted and in study done by Abudu EK et al highest occurrence of well differentiated squamous cell carcinoma (39%) was noted.²⁷

In the current study, out of total 11 cases of adenocarcinoma, 3 cases of early invasive adenocarcinoma, 6 cases of papillary adenocarcinoma and 2 cases of mucinous adenocarcinoma were encountered. It accounted for 5.67% of total neoplastic lesions, which correlates with the finding of Swan et al (5.38%).²⁸

In the current study, one case of adenosquamous carcinoma was found i.e. an incidence of 0.51% was obtained which compares with the figures of Poste et al and Solapurkar et al.²⁹

In the bottom lines, but importantly current study encountered 9 cases (4.6%) of CIN (epithelial dysplasia) including 5 cases of CIN I, 2 cases of CIN II and CIN III each, which is almost equal to incidence given by Poste et al (4.04%) but lower than study of Jata Shankar Misra et al (7.0%) and Atul Jain et al (10.2%).

CONCLUSION

In conclusion, being a developing state, in North West Rajasthan, females with early mid and middle age are prone to develop cervical lesions and parity is very important factor contributing in different aspects of this spectrum of disease. Early screening and timely diagnosis may change the quality of life and can add years to life with a combined effort of a gynaecologist and a pathologist.

REFERENCES

1. Mills S; Histology for pathologists. 3rd edition: Lippincott Williams & Wilkins, 2007.
2. Mills S; Diagnostic Surgical Pathology. 5th edition. Phyladelphia, Baltimore: Lippincott Williams & Wilkins, 2004.
3. Onajole AT, Ajekigbe AT, Bamgbala AO, Odeyemi KA, Ogunnowo BO, Osisanaya TF, et al., The sociodemographic

- characteristics and the level of awareness of the prevention of carcinoma of the cervix among commercial sex workers in Lagos, Nigeria, *Medical practitioner*, 2004; 45(4): 54-55.
4. Panday k., Bhagoliwal A.J., A cancer cervix – need for mass surveillance program specially in rural areas, *Obstet gynecol India*, 2005; 55(5):436-439.
 5. National Cancer Institute Workshop Report. The 1988 Bethesda system for reporting cervical/vaginal cytological diagnosis. *JAMA* 1989; 262(7):931-4.
 6. International Agency for Research on Cancer. IARC Handbooks of Cancer Prevention, Vol. 10. Lyon, France: IARC, 2005.
 7. Anderson MC. Systemic Pathology, Female Reproductive System. 3rd ed., Vol. 6.: Churchill Livingstone; p. 47;127.
 8. Karim AJ, Al-Naggar RA, San P, Mashani M; Histopathological Findings for Cervical Lesions in Malaysian Women: *Asian Pacific J Cancer Prev*, 10,1159-1162.
 9. Garewal JD, Khatri SL, Saxena V, Gupta S, Singh S, Dubey K, Kumar N: Clinicopathological Evaluation of Non-Neoplastic and Neoplastic Lesions of Uterine Cervix. *Imperial Journal of Interdisciplinary Research (IJIR)* Vol-2, Issue-4, 426-430.
 10. Nwachokor FN, Forae GD; Morphological spectrum of non-neoplastic lesions of the uterine cervix in Warri, South - South, Nigeria *Nigerian Journal of Clinical Practice*; Oct-Dec 2013; 16(4); 429-432.
 11. Kumar N :A Morphological spectrum of benign lesions of the uterine cervix at a tertiary care hospital in Tamilnadu; *Sch. J. App. Med. Sci.*, February 2016; 4(2A):343-348.
 12. Olutoyin. G. Omoniyi-Esan, Steven. A. Osasan, Olusegun. S. Ojo; Non-neoplastic diseases of the cervix in Nigerians: A histopathological study; *African Health Sciences* Vol 6 No 2 June 2006, 76-80.
 13. Shanthala S., Basavaraj S. Agadi, Kulkarni BB, Patil BR, Hallikeri UR, Chowkimath UM, Gai PB; Snap Shot Of Epidemiological Pattern Of Cervical Cancer Patients Reporting To A Tertiary Cancer Care Center In North Karnataka, India; *I.J.A.B.R.*, Vol. 4(2) 2014: 178-183.
 14. Chaudhary S et al.; Study of sociodemographic profile and pattern of gynaecological malignancies in a tertiary care center; *Int J Reprod Contracept Obstet Gynecol*. 2016 Aug;5(8):2640-2643.
 15. Chaudhry S, Utilization Of Pap Smear By South Asian Woman Living In The United States; *J Gen Intern med* 2003; 18: 377-384.
 16. Suryawanshi KH, Dravid NV, Damle RP ,Gadre RP , Bagale PS , Ahire N; Evaluation of Pattern of Cervical Cytology in a Tertiary Care Hospital - A Four Years Study; *International Journal of Health Sciences & Research* 29 Vol.3; Issue: 7;29-36.
 17. Misra JS, Agrawal SL, Pandey S. Risk factor associated with squamous intraepithelial lesion of cervix. *Journal of Cytology* 2002; 19(3):153-158.
 18. Nikumbh et al. Cervicovaginal Cytology: Clinicopathological and Social Aspect of Cervical Cancer Screening in Rural (Maharashtra) India. *International Journal of Health Sciences & Research*; Vol.1; Issue: 2; Jan. 2012:126-130.
 19. Caslaneda – Iniguer MS, Tuledo Cisneros R: Risk factors for cervicovaginal uterine cancer in women in Zacalecossalud Publica de Mexico 1998; 40(15):330-338.
 20. Hatwal D, Batra N, Kumar A, Chaudhari S, Bhatt S; Spectrum of Nonneoplastic Lesions of Uterine Cervix in Uttarakhand; *National Journal of Laboratory Medicine*. 2016(2);1-5.
 21. Jyothi V, Manoja V, Reddy K.; A Clinicopathological Study On Cervix .2015 volume:4 Issue:13 Page : 2120-2126.
 22. Omoniyi Esan OG, Osasan SA, Ojo OS. Non neoplastic diseases of the cervix in Nigeria: A histopathological study. *Afr Health Sci* 2006;6:76-80.
 23. Poste P, Patil A, Andola SK;incidence of non neoplastic cervical pathologies recorded at a medical college; *IJAS* 2015;2:039-050.
 24. Usha, Narang BR, Tiwari P, Asthana AK, Jaiswal V; A clinicomorphological study of benign tumor of the cervix ;*J Obstet Gynecol md* 1992;42-228.a
 25. Jain A, Jain R, Iqbal, Koteeswaran G, Dhannanjay S, Kamble T; Histopathological Study Of Tumours Of Cervix; *Advances in Cancer Research & Therapy (ACRT)* 05. 2014; (2):1-7.
 26. Husin N, Helali T, Domi M, Bedri S, Cervical cancer in women diagnosed at the national health laboratory, sudden: A call for screening, *Sudan journal of medical science*, 2011; (6): 183-190.
 27. Abudu EK, Banjo AAF, Izegebu MC, J.Agboola AO, Anunobi CC, Jagun OE, Histopathological pattern of carcinoma of cervix in Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria, *Nig Ot j Hosp Med*, 2006; 16(3): 35-40.
 28. Swan DS, Roddik J W: A clinical pathological correlation of cell type classification for cervical cancer. *Am J Obstet Gynecol*. 116:666-70, 1973.
 29. Solapurkar ML. Histological study of uterine cervix in malignant and benign lesions. *J Obstet Gynecol India*. 1985; 35: 933.

Source of Support: Nil.

Conflict of Interest: None Declared.

Copyright: © the author(s) and publisher. IJMRP is an official publication of Ibn Sina Academy of Medieval Medicine & Sciences, registered in 2001 under Indian Trusts Act, 1882.

This is an open access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Cite this article as: Qadir Fatima, Suman Verma, Narendra Kumar Bairwa, L.A. Gauri. Spectrum of Various Lesions in Cervical Biopsies in North West Rajasthan: A Prospective Histopathological Study. *Int J Med Res Prof*. 2017; 3(1):104-11. DOI:10.21276/ijmrp.2017.3.1.020