

# Spectrum of Nonneoplastic Lesions of Uterine Cervix in Uttarakhand

DEEPA HATWAL, NEHA BATRA, ARVIND KUMAR, SHEELA CHAUDHARI, SACHAN BHATT

## ABSTRACT

**Introduction:** Cervical lesions are more frequent and commonly encountered day today problem of gynaecological lesions in women. Cervical lesions, both neoplastic and non-neoplastic, are prime reason for morbidity and mortality in women.

**Aim:** The study was conducted to explore various non-neoplastic lesions of cervix at government hospital, Uttarakhand.

**Materials and Methods:** 315 non-neoplastic cervixes were analyzed either from hysterectomy or biopsy specimens. These cervixes were subjected to detailed gross and microscopic examination and further categorized into various non-neoplastic lesions.

**Results:** Of all the non-neoplastic lesions, a total of 291(92.38%) of cervical specimens shows cervicitis. Chronic nonspecific cervicitis was the most commonly

encountered lesions in 85.56 % of all inflammatory lesions. However, acute or chronic cervicitis was found in only 18 cases (6.185%) and tuberculosis cervicitis was encountered in only one patient (0.343 %). Cervicitis with koilocytic changes in HPV is present in (7.90%). The peak age for non-neoplastic lesion was 40 -60 years. Nabothian cyst (31.11%) and Squamous metaplasia (14.92%) were another common lesions present. Endocervical hyperplasia and endocervical polyp present in only 1.26% and 2.22% cases. Among the ectocervical changes, hyperplasia were the commonest and found in 12.06%.

**Conclusion:** Histopathology is the best method to detect cervical lesions. Further, large scale multi-factorial studies are essential in this field. Routine Pap smear test in reproductive age group is as way of reducing the occurrence of carcinoma of the cervix in our setup with existing resources.

**Keywords:** Cervicitis, Histopathology, HPV, Squamous metaplasia

## INTRODUCTION

Gynecological specimens forms the major proportion of tissue biopsy in most histopathological departments [1]. Sexually active women are more prone for cervical disease [1,2]. The lesions include predominantly inflammatory and some tumor like non neoplastic lesions [3]. Different varieties of non neoplastic lesion, occurring in uterine cervix, are often misinterpreted. Therefore, the histopathology is the best diagnostic tool for the diagnosis of non neoplastic cervical lesions [4]. The inflammatory lesions of cervix are acute cervicitis, chronic cervicitis and chronic granulomatous cervicitis [5]. The chronic cervicitis is the commonest lesion. The term "chronic" in chronic cervicitis implies more for the duration of symptoms. Chronic Cervicitis is characterized histologically by the infiltration of heavy mixed chronic inflammatory cells including lymphocytes, plasma cells, histiocytes and occasional neutrophils. Spongiosis, ulceration, inflammatory necrosis and erythema are the various histological presentation of acute cervicitis [6].

Acute and chronic cervicitis can be infective and non infective. Non infective cervicitis is chemical in nature. Infective cervicitis can be bacterial, viral, protozoal and fungal. *Mycobacterium tuberculosis* is a leading cause of chronic granulomatous cervicitis [7]. Primary tuberculosis of cervix is rare, it usually secondary to disseminated tuberculosis. Hypertrophy and ulcerative lesions are the most common presentation of tubercular cervicitis and can simulate the as carcinoma cervix on gross [8]. Human papilloma viruses and Herpes simplex virus is common causal agent for viral cervicitis and are strongly associated with condyloma acuminatum, pre invasive cervical intraepithelial neoplasia and cervical carcinoma [9]. Non neoplastic tumors like lesions of cervix are endocervical hyperplasia, endocervical polyp, nabothian cyst and endometriosis etc.,[10-12]. However, these lesions are mostly seen in association with cervicitis as well. These tumor like conditions are often mistaken as neoplastic lesion. This can result in inappropriate and inadequate treatment of the patient.

The present study was undertaken with the aim to establish the prevalence and histopathological patterns of non-neoplastic cervical lesions in Garhwal region of Uttarakhand to provide base line data for treatment of these lesion and further research.

## MATERIALS AND METHODS

A retrospective histopathological analysis of 315 Non-neoplastic lesions of uterine cervix was undertaken in the department of pathology over a period from March 2011 to February 2015 at Government Medical College Sricot-Srinagar, Uttarakhand.

The material for the study consists of both cervical punch biopsy and cervix from hysterectomy specimens. All the slides and blocks from Pathology Department, examined in detail. Sections were cut from paraffin embedded blocks and stained with routine haematoxyline and eosin. Zeil-nelson staining was done to rule out tubercular lesion in required cases. All Clinical data regarding age, parity and clinical features was collected from histopathology request forms and medical records. Non-neoplastic lesions of uterine cervix studied in detail for inflammatory and epithelial changes.

## RESULTS

A total of 315 non-neoplastic lesions from cervical specimen either from hysterectomy or cervical biopsy were analysed in the pathology department during the study period.

The age of patient in this study were ranges from 20-75 years with peak age incidence of 40 to 60 years. Multiparity was seen in 80% of cases .White discharge per vagina was seen in (33.65%), mass per vagina in (25.39%),irregular menses and excessive bleeding per vagina (25.71%), pain in abdomen in (6.98%) and post coital bleeding in(8.25%) patients [Table/Fig-1].

Of the 315 non-neoplastic cervical specimen, 279 were from hysterectomy specimen and 56 from the cervical biopsy either punch, cone biopsy or endocervical curettage.

Of 279 cervical hysterectomies, the cervix appeared normal in 67.74%, hypertrophied in 20.07%, epidermidised in 11.47% and ulcerated in 0.72% [Table/Fig-2]. On cutting, cut surface was unremarkable in 46.59%, Nabothian follicular cyst were seen in 32.97%.cases. Polyp and erosion were seen in 1.08% and19.35% cases respectively [Table/Fig-3].

Clinical symptoms	Number	Percentage
White discharge	106	33.65%
Mass	80	25.40%
Irregular / excessive bleeding per vagina	81	25.71%
Pain abdomen	22	6.98%
Post coital bleeding	26	8.25%

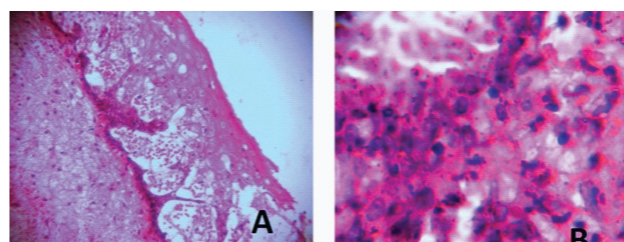
**[Table/Fig-1]:** Clinical sign and symptoms in non-neoplastic lesions.

External surface	Number	Percentage
Normal cervix	189	67.74%
Hypertrophied	56	20.07%
Epidermidised	32	11.47%
Ulcerated	02	0.72%
Total number	279	100%

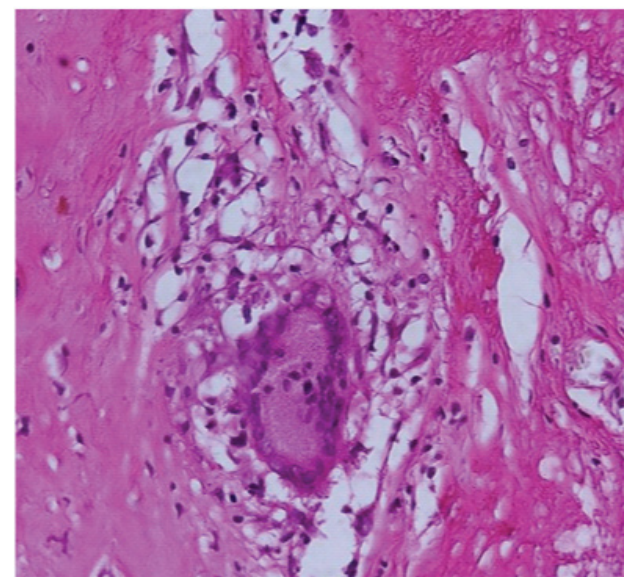
**[Table/Fig-2]:** Gross feature of cervix on external surface.

Cut surface	Number	Percentage
Unremarkable	130	46.59%
Nabothian follicular cyst	92	32.97%
Polyp	03	1.08%
Erosion	54	19.35%

**[Table/Fig-3]:** Gross features of cervix on cut surface.



**[Table/Fig-4]:** Photomicrograph showing acute cervicitis (a) Acantholytic changes (H&E 10 xs) (b) Neutrophilic infiltration 40 x.

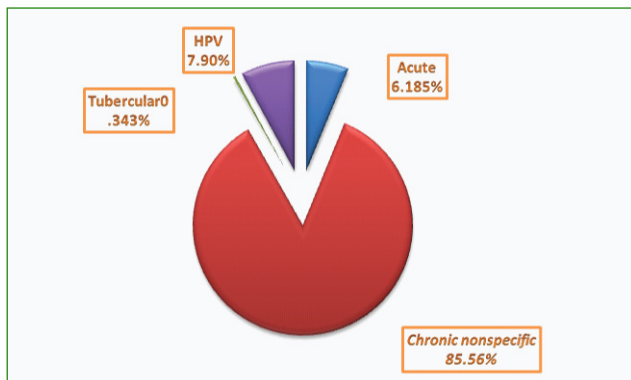


**[Table/Fig-5]:** Photomicrograph showing multinucleated giant cell in tuberculous cervicitis. (H&E 40x).

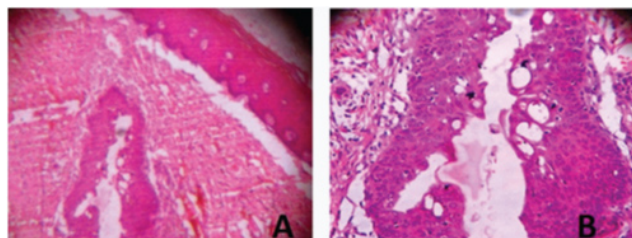
On microscopic examination of 315 non-neoplastic cases, inflammatory lesions accounted in 291(92.38%) and tumor like lesion in 24 cases (7.62%). Among the inflammatory lesions chronic nonspecific cervicitis was the most common lesion constituting (85.56%) of cases. Acute cervicitis [Table/Fig-4] was seen in (6.185%) and a single case of tuberculous

cervicitis (0.343%) [Table/Fig-5] was present. Human papilloma virus cervicitis with koilocytic changes accounted for (7.90%). [Table/Fig-6].

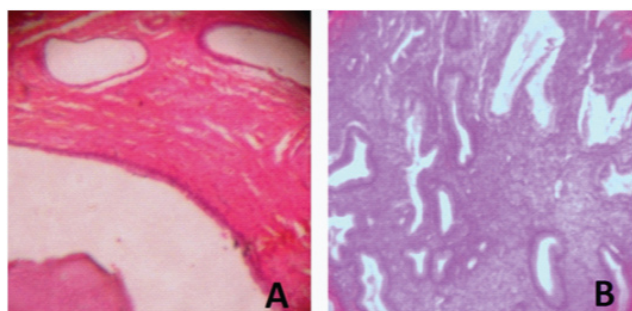
Squamous metaplasia [Table/Fig-7] seen in (14.9%) and nabothian cyst seen in (31.11%) [Table/Fig-8a] cases of all non-neoplastic lesions. Endocervical hyperplasia and polyp seen in (1.26%) and (2.22%) respectively of all non-neoplastic lesions. [Table/Fig-8b] Ectocervical hyperplasia seen in 12.06% cases. Of all non-neoplastic lesions exocytosis, suprabasal bullae seen in one case each [Table/Fig-9].



[Table/Fig-6]: Frequency distribution of Cervicitis (n=291).



[Table/Fig-7]: Photomicrograph showing squamous metaplasia in cervix (a) H&E 10x (b) H&E 40x.



[Table/Fig-8]: Photomicrograph showing a) Numerous nabothian cyst (H&E 10x). b) Endocervical polyp. (H&E 10X).

## DISCUSSION

Incidence of carcinoma cervix has declined in developed countries, but cervix is still the one most common histopathological specimen in pathology department [13]. The diagnosis of cervical lesions is grossly neglected [14].

Histological finding	Number	Percentage among non-neoplastic cervix
Squamous metaplasia	47	14.92%
Nabothian cyst	98	31.11%
Endocervical polyp	7	2.22%
Endocervical hyperplasia	4	1.26%
Koilocytosis	23	7.30%
Ectocervical hyperplasia	38	12.06%
Cervical Prolapse	2	0.634%
Suprabasal bulla	1	0.317%
Granulation tissue	1	0.317%

[Table/Fig-9]: The numerous histological changes encountered in cervix.

The peak age of non-neoplastic lesions of cervix in our study was 40 to 60 years and account for (49.4%). These findings are consistent with the study of FN et al., (33.7%) and Ile-life et (34.7 %) [15]. In the present study, the cervix on external surface looked predominantly unremarkable (67.74%). The findings are consistent with previous findings which shows that hysterectomy specimens in non-neoplastic lesions of the cervix do not exhibit any major morphologic variations [13,14].

In present study, inflammation of the cervix was found in 92.38% of all non-neoplastic cervixes. Findings of our study are similar to the observations made by Howard et al., (98% of 400 specimens) and Hawkins and Bourne (80%) [16]. Omoniyi et al., in their study reported incidence of chronic nonspecific cervicitis 82 % of all non –neoplastic lesions [3]. In our study, we observed 85.56% of chronic nonspecific cervicitis, which was similar to previous study. Sexual intercourse, conception, pregnancy, delivery and post-partum are considered as main causal factor to cervicitis through sexually transmitted disease and urinary tract infection. *Mycoplasma genitalium*, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, and *Staphylococcus aureus* in female of developing countries are main sexually transmitted infection result in cervicitis [17-19]. A Nigerian study shown 10.5% chronic cervicitis in adolescent female who are sexually active [3].

Tuberculosis and shistosomiasis are most common form of chronic granulomatous cervicitis, commonly seen in tropical areas. The incidence of cervical tuberculosis in worldwide population is very rare and account for 0.1 to 0.6%, more commonly affects the fallopian tubes, the corpus, ovary and rarely cervix [20]. In this study only one case (0.343%) of tubercular cervicitis is reported, and thus the findings are concurred with the previous study.

HPV cervicitis is particularly a high risk type cervicitis that results in cervical cancer in worldwide population. Prevalence of HPV cervicitis reported in Argentina (15%), Ibadan



(26.3%) and Uganda 17% respectively [21,22]. Koilocytosis is considered as the histological hallmark of papilloma virus infection. In present study, koilocytosis was encountered in 23 cases (7.90%), among all non-neoplastic lesions. Our findings correlate with the findings of Armadas Naik [23]. It has been proved by various studies that association of HPV infection (koilocytosis), HIV infection and lower CD4 counts have predisposed to cervical intraepithelial carcinoma and malignancy [24,25]. The specificity of diagnosis of HPV has increased by technique like polymerase chain reaction, HPV genotyping, in situ hybridization and molecular studies. Therefore the timely detection of HPV cervicitis reduces the frequency of malignancies in such HIV positive patients [26]. HPV vaccine plays a key role in the prevention of cervical cancer in developing countries [27].

The patients of acute cervicitis usually do not required cervical biopsy because most they are medically treated because of acute discomfort and purulent cervical discharge. Olutoyin et al., in their study received only 2 % of acute cervicitis [3,26]. In our study acute cervicitis was present in 6.185% of cases and consistent with findings of previous study.

Squamous metaplasia in cervix is a physiological change in female during puberty, reproductive years, menopause and very commonly encountered under microscopic examination. The proper recognition of squamous metaplasia on histopathology can avoid an over diagnosis of CIN (cervical intraepithelial neoplasia) [28-30]. In the present study squamous metaplasia seen in 14.9% and the findings are agreed with the previous study.

Of all the non neoplastic lesions endocervical hyperplasia was seen in 1.26% and endocervical polyp in 2.22% cases. These findings are similar to findings of study done by Pallipady et al., .Where endocervical hyperplasia seen in 4.3% and polyp in 1.87% of non-neoplastic cervical biopsy [5, 31]. The endocervical polyp may present as irregular vaginal bleeding or spotting which arouses suspicion of some more serious lesions [32].

In our study we observed only single case of suprabasal bulla with acantholytic squamous cells. The reason for this can be the rarity of the lesions and findings are consistent with findings of Pallipady et al., (supra basal bulla 0.19% and exocytosis 3.54%) [5].

We could not perform Elisa, HPV serology and immunohistochemistry in this study due to their non-availability in our setup and high cost. The effectiveness of Pap ( Papanicolaou-stained smear) test in detecting cervical precancers, easy accessibility to cervix by colposcopy and biopsy are the best tool for early detection and eradication of preinvasive lesions, some of it may progressed to cancer if not diagnosed and treated timely [33].

## CONCLUSION

Histopathology is the best method to detect cervical lesions. Further large scale multi-factorial studies are essential in this field. Routine Pap smear test as screening is recommended as a way of reducing the occurrence of carcinoma of the cervix in our setup with existing resources.

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