

## **Research Article**

# **Colposcopy Guided Management of Cervical Erosions in Rural Population**

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**Abstract:** Cervical erosion, a common gynaecological finding, either has inflammatory or neoplastic origin. Colposcopy and guided biopsy help in differentiating inflammatory lesions from neoplastic lesions. The objectives were to study various colposcopic findings in cervical erosions, to co-relate colposcopy findings with histopathology of cervical biopsy and to find out the outcome of different treatment modalities for cervical erosion. A prospective observational study of 100 cases of cervical erosion diagnosed during gynaecological examination in outpatient department over a period of two years. All cases were subjected to colposcopy. Colposcopy guided biopsy was taken in cases with abnormal colposcopy findings. The results of colposcopy and guided biopsy were compared. Sixty seven percent women revealed normal colposcopy findings. Thirty percent women revealed abnormal colposcopy findings such as aceto-white areas, abnormal vascular patterns (mosaic and Punctation) and iodine negative areas. Coppersen grading of colposcopic abnormalities revealed 5 cases in grade I, 17 cases in grade II and 8 cases in grade III. Histopathology of these 30 cases revealed CIN I and chronic cervicitis, cervical metaplasia with atypia in grade I, CIN II and chronic cervicitis in grade II and CIN III and invasive cancer in Grade III colposcopic abnormalities. Out of 100 cases of cervical erosions, 15 cases had pre-invasive neoplastic lesion (CIN) and 2 cases had invasive lesions (Stage 1B cancer cervix). Premalignant lesions were treated with cryotherapy or hysterectomy and invasive lesions were treated with radical hysterectomy. Colposcopy and histopathology play complimentary role in diagnosis and management of cervical erosions.

**Keywords:** Cervical erosion, Colposcopy, Cervical intraepithelial neoplasia, Cryotherapy, Cancer cervix

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## **INTRODUCTION**

Cervical erosion is one of the commonest clinical finding in women attending Gynaecology outpatient department for various reasons. Many a times, cervical erosion is an accidental finding in an asymptomatic woman coming for routine gynaecological examination. Cervical erosion, which is an abnormality of cervical epithelium covering ectocervix, has a varied significance. It could be a premalignant or malignant lesion (cancer cervix) [1-3]. Cervical erosions are commonly associated with lower genital tract infections [4]. Lower genital tract infections are very common among women from lower socio-economic class having poor personal hygiene and poor health awareness. Infections are also common among women with unsafe sexual practices. Present study was planned to evaluate the cervical erosions with the help of colposcopy. Additional investigations like cervical cytology, cervical biopsy, and serological investigations for diagnosis of common sexually transmitted diseases including HIV were done. The

specific objectives of the study were- To study various colposcopy findings in cervical erosions, to co relate colposcopy findings with histopathology of cervical biopsy and to find out the outcome of different treatment modalities for cervical erosion.

## **MATERIALS AND METHODS**

A prospective observational study was carried out in Gynaecology out-patient department of tertiary care teaching hospital located in rural area of central India for a period of two years (August 2011-July-2013). Hundred women presented with various symptoms and diagnosed to have cervical erosion on clinical examination were enrolled in the study. Pregnant women with cervical erosion were excluded from study. Pap smear examination was performed in all women. In the absence of local cervical and vaginal infection, colposcopy and colposcopy guided biopsy were performed in the same visit. Lower genital tract infections were treated with appropriate antimicrobial therapy. These women were asked to come after 5 days

for collection of PAP smear report. In the same visit, these women were subjected to colposcopic evaluation and colposcopy guided biopsy, whenever necessary.

Colposcopy was performed on outpatient basis. 3% acetic acid and 50% Lugol's iodine was used for identifying abnormal areas in cervical erosion before biopsy. Women were prescribed broad spectrum antibiotics (Tab. Ciprofloxacin / Cap. Doxycyline / Tab. Metronidazole / Tab. Fluconazole) and anti-inflammatory drugs for 5 days following colposcopy guided biopsy. Women were asked to come for collection of histopathology report after 7 days. Subsequent treatment was decided as per the findings of histopathology report. These patients were subjected either to cryocauterisation or more radical form of surgery (hysterectomy). Relevant clinical, colposcopic finding and histopathological data (findings) in every case were entered in a structured proforma and then transferred to a master chart. Statistical analyses of data were done by applying Z test of difference between two proportions.

All women were advised to come for follow-up after 1 month, 3 months and 6 months after initial treatment. During follow-up visit the per speculum examination findings were compared with the initial findings. If erosion was still present, Pap smear was again repeated and women were subjected to colposcopic examination. Colposcopy findings were compared with initial findings and treatment was advocated as per the findings. Institutional Ethical committee clearance was obtained before start of the study. (Letter reference number - PMT/PIMS/RC/2011/160)

## RESULTS

Majority of women were in the age group of 20-40 years, multipara, sterilized and were not using barrier contraceptives. They belonged to lower socio economic class, had low level of literacy, poor personal hygiene and health awareness. Seventy percent of women had lower genital tract infections as associated findings with cervical erosions.

Among various presenting symptoms, white PV discharge and lower abdominal pain were the predominant symptoms, others being per vaginal bleeding, inter-menstrual bleeding, pruritus vulvae, dyspareunia, etc. (Table 1). Cervical smear was done in all cases. In 70% of cases, the pap smear report was inflammatory smear coinciding with 67% cases having various cervicovaginal infections.

All cases were subjected to colposcopy. In 30 cases there were abnormal colposcopic findings. Cases with abnormal colposcopic findings (30 cases) were graded as per the Coppleson's grade of abnormality. There were 5 cases in grade I, 8 in grade II and 7 in grade III (Table 2). Various abnormal colposcopic findings noted were acetowhite areas, abnormal vascular pattern, etc. These 30 cases of abnormal colposcopy were subjected to colposcopy guided biopsy. Biopsy findings revealed CIN 1 in 11 cases, CIN 2 in 3 cases, CIN 3 in 4 cases, chronic nonspecific cervicitis in 6 cases and squamous metaplasia with atypia in 4 cases. There were two cases of squamous cell carcinoma.

Severity of epithelial abnormality in colposcopic findings co-related very well (in 95% cases) with histo-pathological findings (Table 3). Cases with cervical intraepithelial neoplasia (CIN 1 & 2) and squamous metaplasia were treated with cryotherapy. Cases of CIN 3 were Various grade I abnormalities detected in 5 cases were shiny acetowhite epithelium whose borders were not sharp and there were either no abnormal vascularity or may be fine caliber vessels were seen on the surface. Various grade II abnormalities detected in 18 cases were acetowhite epithelium with greater opacity and sharp borders. These were regularly shaped vessels with defined patterns. There were no atypical vessels. Various grade III abnormalities detected in 7 cases were white or grey opaque epithelium with sharp border of the lesion, surface having dilated, coiled, atypical vessels, with variable intercapillary distance. In 2 cases there was irregular surface contour, microexophytic epithelium treated with abdominal hysterectomy with preservation of ovaries. Two cases of squamous cell carcinoma were treated by radical hysterectomy. Cases with histo-pathological report of nonspecific cervicitis were treated with local and systemic antibiotics (Table 4).

All cases with local cervico-vaginal infections i.e., 67% were treated with specific antimicrobials and were asked to come for follow up. Overall follow up for initial one month visit was very satisfactory. Fifty percent cases did not turn up for subsequent follow up visit. Women with abnormal colposcopy findings were asked to come for regular follow up. They were counseled regarding need for regular follow up even after treatment. Overall compliance in the group was satisfactory during 1, 3, and 6 months follow up visits.

**Table 1: Distribution of cases according to presenting symptoms**

Presenting Symptoms	Number of cases	Percentage
Per Vaginal discharge	69	69%
Pain in abdomen	21	21%
Per Vaginal spotting	3	3%
Intermenstrual bleeding	2	2%
Dyspareunia	2	2%
Pruritus vulvae	3	3%

**Table 2: Distribution of cases on basis of Colposcopy findings**

Coppleson's and Coworker's grading system	Number of cases (n=100)	Percentage
Normal	67	67%
Grade I ( Insignificant, not suspicious)	5	5%
Grade II(Significant, suspicious)	18	18%
Grade III (Highly significant, Highly suspicious)	7	18%
Unsatisfactory	3	3%
Total	100	100%

**Table 3: Correlation of Colposcopy and Cervical Biopsy findings**

Colposcopy Findings& no. of cases	Cervical Biopsy : Histopathology report and No. of cases
Normal (67 Cases)	Not Done
Unsatisfactory (3 Cases)	Not Done
Grade I (5 Cases)	CIN 1 ( 4 cases) Chronic non specific cervicitis ( 1 case)
Grade Ii (18 Cases)	CIN 1 ( 7 cases) Chronic non specific cervicitis ( 5 cases) Squamous metaplasia with atypia (4 cases) CIN 2 ( 2 cases)
Grade Iii (7 Cases)	CIN 3 ( 4 cases) 2) Squamous cell carcinoma ( 2 cases) 3) CIN 2 ( 1 case)

**Table 4: Treatment as per histopathology report**

Histopathology report	Number of cases (n=30)	Percentage	Modality of Treatment
CIN 1	11	36.66%	Cryocautery
CIN 2	3	10%	Cryocautery
CIN 3	4	13.33%	Total Abdominal Hysterectomy
Squamous metaplasia with atypia	4	13.33%	Cryocautery
Squamous Cell Carcinoma	2	6.66%	Wertheim's Hysterectomy
Chronic non-specific cervicitis	6	20%	Antibiotics

**DISCUSSION**

Unhealthy cervix is a group of cervical lesions, mostly chronic, which includes chronic cervicitis, endocervicitis, cervical erosions, lacerations, polyps and leucoplakia. These conditions can harbour premalignant lesions. When a Gynaecologist encounters any of these conditions, it is necessary to evaluate them in most purposeful manner to rule out any premalignant lesion.

In the present study of 100 cases of cervical erosions, Colposcopic examination reveals normal findings in 67 cases whereas 30 cases had abnormal colposcopic findings. In three cases colposcopy was unsatisfactory. Among cases of abnormal colposcopic findings, 5 cases had grade I abnormality, 18 cases had Grade 2 abnormality and 7 cases had grade 3 abnormality as per Copplesons and Coworkers grading system. Various

abnormal Colposcopic findings were noted and the lesions were graded accordingly. Bhalerao A *et al.*; reported normal colposcopy in 34 cases out of 200 cases of unhealthy cervix [5]. Commonest abnormal finding reported was acetowhite areas in 83 cases, acetowhite with abnormal vascularity in 49 cases. There was only abnormal vascularity in 20 cases. Jyothi R, *et al.* in their study of 200 high risk patients in the age group of 35 to 60 years reported abnormal colposcopy in 65% cases [6].

Bhalerao A *et al.* in their study of colposcopy in unhealthy cervix reported that acetowhite areas was the commonest finding in 42.5% cases and acetowhite areas with abnormal vascularity in 24.5% cases [5]. Boices A *et al.* in their study of 500 cases of suspected precancerous lesions reported 51% normal colposcopic findings and 49% of cases with abnormal colposcopic findings. The colposcopic findings of mosaic areas, acetowhite areas with vascular spots on surface corresponded with CIN 1. Leukoplakia corresponded with CIN 2 & 3. Co-relationship between abnormal colposcopy and histopathology was in the range of 85 – 90%. [7]. Olaniyan B *et al.* conducted a meta-analysis to quantify the validity of colposcopy in the diagnosis of early cervical neoplasia. He reported colposcopic accuracy of 89% which matched exactly which histology in 61% of cases [8]. Brotzman GL *et al.* in a study made on 564 patients observed that the Colposcopic impression correctly predicted the diagnosis in 64.3% of cases [9] Stafi A, Mattingly RF prospectively enlisted the colposcopic impression of 282 patients and compared them to the histology. They subsequently recommended a minimal proficiency level of 80% for colposcopic accuracy to show proof of Colposcopic competency [10].

In the present study, 30 cases with abnormal colposcopic findings had undergone colposcopic guided biopsy in the same sittings. Histopathology of biopsy specimen revealed various abnormalities like CIN 1 in 11 cases, CIN 2 in 3 cases, CIN 3 in 4 cases, Chronic nonspecific cervicitis in 6 cases, squamous metaplasia in 4 cases and squamous cell carcinoma in 2 cases. Colposcopic gradings were compared with histopathological findings of these 30 cases. It was revealed that Grade 1 colposcopy matched with the histopathology findings of CIN 1 and chronic nonspecific cervicitis. Grade 2 colposcopic findings matched with the cervical intraepithelial lesions, CIN 1, 2, chronic nonspecific cervicitis and squamous metaplasia with atypia. Grade 3 colposcopy findings matched with advanced grades of CIN 2, 3 and squamous cell carcinoma of cervix. Overall abnormal Colposcopic findings matched very well 95% with histopathological diagnosis. All cases enrolled in the study were treated as mentioned before, women with cervical erosions associated with lower genital tracts infections were treated as per syndromic approach. Women with abnormal colposcopic findings were

treated as per the histopathologic reports. All cases of CIN 1 (11cases), CIN 2 (3cases) and squamous metaplasia with atypia (4 cases) were treated on outpatient basis with cryotherapy. They were counselled regarding the usefulness of the procedure in regards to cure of the disease, possible profuse discharge, post procedure and need for follow-up visits. This procedure was done in minor OT under sedation and patients were given prophylactic antibiotics for 5 days.

Four cases of CIN 3 were treated with Total abdominal hysterectomy. Patient's preference for surgery, possible noncompliance with local ablative therapy in these cases influenced the decision in favour of abdominal hysterectomy. There were two cases of squamous cell carcinoma. Considering the clinical staging of stage 1B, both cases underwent radical hysterectomy. Six cases of chronic nonspecific cervicitis were treated with local and systemic antibiotics.

All 100 cases of cervical erosion were asked to come for follow up. Out of 67 cases of cervical erosion with normal Colposcopy findings (67%), having lower genital tract infections were asked to come for follow-up after 2 weeks of treatment. Forty five cases (45%) came for initial follow-up. Majority of them were asymptomatic by then and had healing cervical erosion. Then they were asked to come for follow-up after one month. Majority (85%) were lost to follow-up, most probably they were asymptomatic and thus did not turn back to outpatient department.

All 30 cases of cervical erosion with abnormal colposcopy findings who had undergone specific treatments as per histopathology report were asked to come for regular follow up visits. Proper counseling was done for them to ensure follow-up visits and to avoid problems of lost to follow-up which is very common for various reasons in rural areas. All cases except 3, came for regular follow up at 1,3 and 6 months after surgical treatment. Out of 18 cases of cryo-therapy, 10 cases (55.55%) had complaints of excessive watery discharge incapacitating their routine life. They were counseled and re-assured about it. The cervical erosion in all except 2 cases were seen healed completely during second follow-up visit. Patients were happy over the results. Four cases of CIN 3, had undergone either abdominal hysterectomy (2cases) or Total laparoscopic hysterectomy (2cases). All four cases had come for regular follow up at 1, 3 and 6 months and were not having any fresh complaints. 2 cases of squamous cell carcinoma who had undergone radical hysterectomy came for regular follow up and were advised to come for long term follow up.

Out of cases of chronic nonspecific cervicitis, who were treated with local and systemic antibiotics, four cases came for single follow up and two cases were lost to follow up. In two cases, cervical erosion was

persistent. Repeat colposcopy after three months did not show any abnormal Colposcopic findings and was again treated on conservative lines.

#### CONCLUSION

Cervical erosion is one of the commonest finding on unhealthy cervix. Majority of times, it is benign and results from lower genital tract infections. At times it is a premalignant lesion and forerunner of cancer cervix. Thorough evaluation of all cervical erosions is essential for early detection of precancerous lesions. Colposcopy and directed biopsy together are useful and complimentary in arriving at a correct diagnosis. This study demonstrated high accuracy and co-relation between colposcopy and histology, comparable with results from similar studies in the literature. Benign cervical erosions respond well to local/systemic antibiotics. Premalignant lesions need local ablative therapy and subsequent follow up.

#### ACKNOWLEDGEMENT

The authors express their deep sense of gratitude towards Department of Pathology, Management of the Pravara Medical Trust and the Principal, Rural Medical College, Loni, Maharashtra, India.

#### REFERENCES

1. Memorandum from a WHO meeting; Cervical cancer control in developing countries. Bulletin of WHO, 1996; 74: 345-51.
2. Sankaranarayan R, Budhuk A, Rajkumar R; Effective screening programme for cervical cancer in low and middle income developing countries. Bulletin of WHO, 2001; 79: 954-62.
3. Dinshaw KA, Shastri SS; Screening for cervical cancer in India. Natl Med J India, 2001; 14(1): 1-3.
4. Kesic VI, Soutter WP, Sulovic V, Juznic N, Aleksic M, Ljubic A; A comparison of cytology and cervicography in cervical cancer screening. Int J Gynecol Cancer, 1993; 3(6): 395-398.
5. Bhalerao A, Kulkarni S, Ghike S, Kawalthalkar, Joshi S; Correlation of Pap smear, colposcopy and histopathology in women with unhealthy cervix. J South Asian Feder Obstet Gynaecol., 2012; 4(2): 97-98.
6. Jyoti R, Gupta P, Rao R, Sood PL, Parasher N; Correlation between colposcopy, cytology, and histopathology in high risk patients for cervical cancer in perimenopausal women in Himachal Pradesh, India, Journal of South Asian Federation of Menopause Societies, 2013; 1(1): 21-23
7. Boicea A, Patrascu A, Surlin V, Iliescu D, Schenker M, Chiotu L; Correlation between colposcopy and histologic results from colposcopically directed biopsy in cervical pre-cancerous lesions. Rom J Morphol Embryol., 2012; 53(3 Suppl): 735-741.
8. Olaniyan B; Validity of colposcopy in the diagnosis of early cervical neoplasia. A review. African Journal of Reproductive Health, 2002; 6(3): 59-69.
9. Brotzman GL, Schellhase KG; Colposcopic proficiency –disease spectrum in a single family practice colposcopists clinic, WMJ, 2004; 103(7): 61-65.
10. Stafil A, Mattingly RF; Colposcopic diagnosis of cervical neoplasia. Obstet Gynecol., 1973; 41(2): 168-176.