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Research Article

Colposcopic Evaluation of Patients with Persistent Inflammatory Pap Smear

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Abstract: Inflammatory pap smear is the most common report encountered by the gynaecologist even in healthy cervix. As per screening guidelines, colposcopy is done only on detection of atypical cells on cytology. This study was carried out with an aim to evaluate whether persistent inflammatory changes on Pap smear could be the first indication of premalignant changes in the cervix and whether further evaluation by colposcopy would help to triage these women. 200 women attending the gynaecology clinic were screened with pap smear. Women with inflammatory smear were treated with antibiotics according to WHO guidelines and a repeat pap smear was taken. Women with persistent inflammatory smear were subjected to colposcopy and directed biopsy if required. Of the 200 women screened, 169 (84%) had an inflammatory smear, 72 (36%) had persistent inflammatory smear. These 72 patients underwent colposcopy, and 47(65.28%) of them needed a cervical biopsy. Histopathology in 31(43%) showed a chronic cervicitis picture and 15 patients (20.7%) had a proved premalignant lesion of the cervix. Colposcopic evaluation of patients with persistent inflammatory pap smear might help us to detect a significant number of cases in premalignant state which are being missed.
Keywords: Pap smear, Inflammation, Cervix, Colposcopy, CIN, Biopsy

INTRODUCTION

Carcinoma of the cervix is the most common genital tract cancer in women with a worldwide estimate of 493,000 new cases annually [1]. In India, 1,32,082 women are diagnosed with cervical cancer and 74,118 women die due to cervical cancer every year. One woman in India dies due to cervical cancer every 7 minutes [1]. Cervical cytological testing has been the standard screening test for cervical neoplasm, designed to detect over 90% of cytological abnormalities.

Inflammatory smear is the most common report the gynaecologist receives even when the cervix appears normal. The cervical screening algorithm for inflammatory smear recommends treatment of infection, if indicated and repeat the pap smear after 6 months [2]. In practice, repeat pap smear is not taken after 6 months in these cases, especially in developing countries like India due to varied reasons. Moreover, inflammatory cells may obscure the malignant cells underneath [3]. Hence a good number of patients in premalignant stage are likely to be missed. Very few authors have done studies on evaluation of persistent inflammatory pap smear [4, 5, 6, 7, 8]. So this study may help us formulate new cervical cancer screening protocol to detect more number of cases in the premalignant stage.

This study was designed to evaluate whether persistent inflammatory changes on Pap smear could be the first indication of premalignant changes in the cervix and whether further evaluation by colposcopy would help to triage these women.

MATERIALS AND METHOD

The study was conducted on 200 patients at Department of Obstetrics & Gynaecology, Aarupadai Veedu Medical College Hospital, Pondicherry, India. This prospective observational study was carried out for a period of 1 year from January 2011 to December 2011 to evaluate the patients with persistent inflammation on pap smear report.

Inclusion Criteria

All women attending gynaecology Outpatient Department presenting with symptoms like abnormal vaginal discharge, pain in lower abdomen, abnormal menstruation, pruritis vulvae.

Exclusion Criteria

- Pregnancy
- Obvious cervical growth
- Proven CIN
- Diabetes Mellitus

After getting informed consent, patients were enrolled for the study. After a detailed history and general physical examination, gynaecological examination which includes examination of vulva, per speculum examination along with Pap smear and bimanual pelvic examination was carried out in all patients.

Women with inflammatory Pap smear and her partner were treated with antimicrobial drugs according to WHO guidelines. They were prescribed doxycycline and metronidazole orally for 7-14 days and clotrimazole vaginal pessary daily (female) for 6 days. The couple were advised abstinence or barrier contraception during the treatment period.

A repeat Pap smear was taken after an interval of 2-4 weeks and the patients with a report of inflammation are said to have persistent inflammatory smear. They were then subjected to colposcopy and classified based on Modified Reid's scoring system.

The patients with suspicious lesions on colposcopy were then subjected to cervical biopsy from these abnormal areas along with endocervical curettage. The biopsy specimen was fixed in 10% formalin and sent for histopathological evaluation. The results were then interpreted.

RESULTS

The clinical profile of the patients enrolled for the study (n =200) is shown in Table 1. The most common symptom for which they sought gynaecological consultation was abnormal vaginal discharge (69%). The distribution of patients by smear findings according to Bethesda system 2001 [9] is illustrated in Table 2. 169 patients (84%) had inflammatory smear, out of which 72 patients had persistent inflammatory smear. Two patients who had inflammatory smear on initial examination, lost follow up for repeat pap testing after antibiotics.

On evaluation, the mean age of the patients with persistent inflammatory smear was 31.6 ± 2.1 years and 62% of them were multiparous. The colposcopic findings in patients with persistent inflammatory smear (n=72) as per Reid Colposcopic grading Index is illustrated in Table 3. In 25 (34.72%), colposcopy was normal and hence biopsy was not taken in them. 47 patients (65.28%) had abnormal colposcopic findings, hence underwent colposcopic directed biopsy.

The histopathological findings in patients with persistent inflammatory smear are shown in Table 4. In 31 (43%) patients, the biopsy report was chronic cervicitis whereas in 15 (20.7%) patients, histopathology revealed cervical intra epithelial lesion (CIN). In one patient, histopathological examination proved out to be invasive carcinoma of cervix.

Table 1: Distribution of patients according to their clinical profile

Clinical presentation	Number of patients (n=200)	Percentage (%)
Abnormal vaginal discharge	138	69
Lower abdominal pain	43	21.5
Menstrual abnormalities	24	11.5
Pruritis vulva	5	2.5

Table 2: Distribution by pap smear findings

Pap smear Report	Number of patients (n=200)	Percentage (%)
Normal	21	10.5
Inflammatory	169	84.5
Atypical Squamous Cells of Undetermined Significance (ASCUS)	3	1.5
Atypical Glandular Cells	1	0.5
Low grade Squamous Intra epithelial Lesion (LSIL)	2	1
High grade Squamous Intra epithelial Lesion (HSIL)	1	0.5
Invasive Squamous cell Carcinoma	3	1.5

Table 3: Colposcopic findings by Reid Scoring in patients with persistent inflammatory smear

Reid scoring	Number of cases (n = 72)	Percentage (%)
Normal	25	34.72
0 – 2	32	44.44
3 - 4	13	18.1

Table 4: Histopathological findings

Histopathology Report	Number of cases	Percentage (%)
Chronic cervicitis	31	43
CIN 1	8	11.1
CIN 2	5	6.9
CIN 3	2	2.7
Invasive carcinoma	1	1.3

DISCUSSION

Invasive carcinoma of cervix is a preventable condition since it is preceded by a long phase of preinvasive stage that is slow to progress and can be easily detected and treated at this stage [10]. In spite of this, deaths due to cancer cervix worldwide are still high around 2,74,000 each year [11].

Screening for cancer cervix with pap smear as per the guidelines is proved to be an important part of preventive health care of women. Inflammatory pap smear is the most common report and its prevalence in various studies is reported to range from 70% to 80.5% [12, 13]. Our study reflected this report with an incidence of 84.5%, while Singh *et al*. [14] reported a similar incidence of 80.5%, whereas Bhutia *et al*. [7], Patil *et al*. [8], Sohail *et al*. [15], and Mishra [16] reported incidence of inflammatory smear to be 24.3%, 40.7%, 34.4%, and 72% respectively.

Persistent inflammation leads to increased turn over, especially in the epithelium, and provides a selection pressure that results in the emergence of cells that are at high risk for malignant transformation [17]. Recently, Hammes and colleagues evaluated the population of macrophages during the cervical malignant transformation and its malignant transformation and its influence on CIN in cervical biopsy specimens. They reported presence of inflammation in 25%, 46.1%, 58.4% and 89.3% of normal, LSIL, HSIL and squamous cell carcinoma respectively. Also, they reported that the macrophage count and inflammation increased linearly with disease progression [18].

Persistent inflammatory smear after treatment with antibiotics was observed in 72 patients (36%) as compared to Sandmire *et al*. [19] with a report of 35.1% and Reiter [20] with a report of 25.3%. The results of present study contrasts with the study by Singh *et al*. [14] with a high value of 63.4% and Secklin *et al*. [5] and Patil *et al*. [8] with a low incidence of 8.5% and 18.4% respectively.

On further analysis of women with persistent inflammatory smear, the mean age of these women was 30.6± 2.1 years and 62% were multiparous. In comparison, Patil and colleagues [8] quotes a mean age of 31.62 ± 2.6 years with 42.1% being multiparous and Secklin *et al*. [5] reports a mean age of 30.2 ± 6.3 years with mean parity being 1.7 ± 2.3. Our demographic profile is comparable to their studies. Two patients never turned up for repeat pap smear till date, may be they were symptomatically better.

Colposcopy was normal in 34.72% of patients with persistent inflammatory smear for whom cervical biopsy was not performed. This result is comparable to study by Secklin *et al*. [5] who reported 29.1% of cases with normal colposcopic finding. A very high percentage (62.5%) of normal colposcopic picture and low value of 9.3% was reported by Wilson *et al*. and Dasari *et al*. respectively [21, 6]. In the rest 65.28 % of patients with abnormal colposcopy, biopsy was taken simultaneously and histopathological examination done.

On histopathological examination, 43% of patients had chronic cervicitis which is comparable to 48.2% patients in a study by Secklin *et al*. [5], 34.37% by Patil *et al*. [8] and 36.7% by Bhutia *et al*. [7].

The incidence of premalignant lesions of cervix (CIN) in the present study was 20.7 % and invasive squamous cell carcinoma of cervix was 1.3 %. The results are comparable to various studies. Frisch *et al*. [22] reported an incidence of Cervical Intraepithelial Neoplasia in 23.5% patients whereas Bhutia *et al*. [7] reported it to be 16.67%.

Dasari *et al*. selected at random 150 patients with a report of inflammatory pap smear, advised them a course of antibiotics for 14 days. A repeat pap smear was taken and colposcopy was performed in women with inflammatory smear, biopsy taken if needed. In them, the incidence of CIN and invasive carcinoma was found to be 20.6% and 0.7% respectively [6].

Patil and Co workers (2012) studied in 700 women with persistent inflammatory smear in a low resource setting and reported an incidence of 17.64% of CIN on colposcopic directed biopsy [8]. Wilson *et al*. performed colposcopy in women with single smear showing inflammatory changes and observed a prevalence of 13% of cervical intraepithelial neoplasia [21].

Mc Lachlan *et al*. studied the colposcopic features of 102 women with persistent inflammatory smear and found 19% cases of CIN 2 or worse [4]. In a study by Parasari *et al*., the incidence of CIN was 6.3% [12]. In a study by Secklin *et al*. 64.5% of patients with two consecutive reports of inflammatory smears had HPV lesions and 8% had CIN [5].

CONCLUSION

Nearly 20.7% of patients with persistent inflammatory smear harboured CIN. So, colposcopic evaluation is necessary even when inflammatory changes persist in pap smear despite treatment. This might help us to detect a significant number of cases in premalignant state which are being missed.

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