

Significance of Persistent Inflammatory Cervical Smears in Sexually Active Women of Reproductive Age

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Summary

To study the significance of persistent inflammatory cervical Papanicolaou smears, sexually active women of reproductive age with inflammatory smears attending clinic were recruited. Patients with persistent inflammatory cervical smears were subjected to Schiller directed cervical biopsy for histopathological examination. Persistent inflammatory changes were seen in 301 of 768 cervical smears (39.2%). Underlying cervical intraepithelial neoplasia (CIN) on histopathologic examination was found in 39 persisters (12.9%). Prevalence of CIN was higher in women over 30 years (36/251 versus 3/50) and significantly so in women with parity higher than 2 (19/99 versus 20/202, $p < 0.05$). Severity of underlying CIN lesions increased with increasing duration of marital life. ($p < 0.001$).

Objective: To study the significance of persistent inflammatory cervical smears in sexually active women of reproductive age.

Setting: Rurally based teaching hospital

Patients and Methods: Clinic attending sexually active women aged between 18 to 45 years with inflammatory smears were recruited. Repeat cervical smears were taken after 3 months of systemic antimicrobials plus local antiseptics. Patients with persistent inflammatory cervical smears were subjected to Schiller directed cervical biopsy for histopathological examination. Relationship of age, parity, duration of marital life, different contraceptive practices were studied vis-à-vis histopathological findings of cervical intraepithelial neoplasia.

Results: Persistent inflammatory changes were noted in 301 of 768 cervical smears (39.2%). Underlying cervical intraepithelial neoplasia (CIN) on histopathologic examination was seen in 39 persisters (12.9%). Prevalence of CIN was higher in women over 30 years (36 of 251 vs 3 of 50), and over para 3 (19 of 99 vs 20 of 202, $p < 0.05$) uninfluenced by the presence of cervical lesion. Severity of underlying CIN lesions increased with increasing duration of marital life (8.8 SD 4.5, 14.3. SD 3.9 and 15.6 SD 1.4 years, respectively, for CIN 1, 2 and 3).

Conclusion: Women with persistent inflammatory cervical smears, especially if she is above 30 years, sexually active for 10 years and is third para, should have further evaluation with cervical biopsy.

Introduction

The apparently prolonged natural history of precancerous lesions of uterine cervix and accessibility of cervix for visual examination and to obtain exfoliative cells had made screening for cervical cancer most popular. The frequency of atypia on cervicovaginal smears, reported as class II Papanicolaou smears range at 1.6 to 5.4% (Himmelstein, 1989). These minimal nuclear and cytoplasmic squamous cell changes in Papanicolaou smears often have been attributed to

infection (Kiviat et al, 1985) and referred as inflammatory smears.

Contrary to the initial belief that cervical atypia represents a benign process, several investigators have documented that 10-25% of patients with initial atypical cytology will eventually be found to harbour significant cervical dysplasia (Hulka, 1968; Nyirjesy 1972; Davies et al 1987). This is found to be more apparent in patients with persistent inflammatory smears (Seckin et al 1997). Present study was designed to validate the clinical

importance of the cytologic diagnosis, by ascertaining rate of CIN underlying persistent inflammatory cervical smears (PICS).

Material and Methods

Surface scrape biopsy of vaginal cervix using Ayre's spatula was taken in 2138 consecutive sexually active women attending gynaecology outpatients of the hospital and outreach clinics for gynaecological symptoms, family-welfare, consultation or for health check-up in clinics attached to Kasturba Medical College, Manipal, India.

The smears on staining according to modification of papanicolaou technique were considered as inflammatory, when they showed increased parabasal eosinophilic cells with pyknotic or slightly enlarged nucleus having regular but blurred chromatin pattern within thickened nuclear membrane along with evidence of neutrophils, inflammatory exudate, plasma cells or clumps of pathogens.

Patients with inflammatory cervical smears (768 cases) were given Cotrimoxazole (Trimethoprim 80 plus Sulphamethoxazole 400mg. Twice daily for 7 days) or Doxycycline (100 mg. Once daily for 14 days) orally, along with vaginal insertion for 6 nights of Povidone iodine 200mg or Clotrimazole 100mg suppositories.

Patients were considered to have persistent inflammatory cervical smear (PICS), if the cervical smear repeated after 3 months of antimicrobial-antiseptic treatment reported again as inflammatory. There were 301 such cases and were subjected to cervical biopsy from Schiller negative areas to detect underlying CIN lesions.

Relationship of general characteristics like age, parity, duration of marital life and clinical variables were studied in patients with PICS vis-à-vis histopathological

examination findings of cervix.

Results

Inflammatory smears, grouped as class II Papanicolaou smears were reported in 768 of 2138 (35.9%) smears.

Inflammatory smear persisted in 39.2% of these 768 cases. Women with PICS had an average age of 35.2 SD 7.3 years, parity 2.1 SD 2.3 and marital life of 15.6 SD 8.2 years. No contraception was practised by 68 (22.6%) women and barrier method was adopted by 24 (7.9%) women with PICS.

The prevalence of underlying CIN lesions at histopathological examination among 301 cervixes with PICS was 12.9%, excluding 6.6% with koilocytotic features.

Proportion of underlying CIN lesion was more than twice among women aged beyond 30 years than those younger by that age. Similar was the proportion seen in women who had borne three or more times than less parous ones (Table I).

The interesting point to note was that of relationship between mean duration of marital life and the type of CIN lesion. It was found that mean duration of marital life became higher as the grade of CIN increased; viz: 8.8 SD 4.5 years for CIN-1, 14.3 SD 3.9 years for CIN-2 and 15.6 SD 2.4 years for CIN-3 lesions. Despite 204 cervixes showing either erosion (99 cases), bulkiness (92 cases) or exhibiting contact bleeding (13 cases), the finding of CIN in 13.2% in 97 normal looking cervixes without any such findings referred earlier.

Discussion

Prevalence of inflammatory smears and that of PICS, reported as 39.2%, was 4 to 5 times higher than

Table I
Persistent inflammatory cervical smears and CIN on histopathology in relation to age and parity

		Cases	CIN			CIN (1+2+3) n(%)	Chi square
			1	2	3		
Age (Yr)	< 30	50	1	-	2	3 (6.0)	2.573 NS
	> 30	251	20	12	4	36 (14.3)	
Parity	< 3	202	13	4	3	20 (9.9)	5.085 p<0.05
	> 3	99	8	8	3	19 (19.2)	
Total		301	21	12	6	39 (12.9)	

those observed by other workers (Seckin et al 1997; Noumoff, 1987). The higher figures, though not controlled, could be attributed to significantly lower acceptance rate (7.9%) for barrier contraceptives. In addition, patients prescribed of medicines were presumed to have consumed and the compliance to advice was not tested. Information regarding sexual activity in the period before repeat cervical smear was also not sought. Finding higher prevalence rate in their study, Pearlstone et al (1992) wondered if that could be due to diagnostic bias or because of underlying population characteristics.

CIN lesions on histopathologic examination were found in 12.9% of cases with PICS. Varying incidences have been noted by different authors as 11.5 to 44.5% (Davis et al, 1987; Seckin et al 1997; Noumoff, 1987; Pearlstone et al 1992; Reiter, 1986; Lawley et al 1990). This wide variation is difficult to explain. But it should be enough to warn clinicians not to ignore PICS. In the present study histopathologic evidence of CIN was seen to be significantly more prevalent after the age of 30 years and among parous (> 3 parity) women. Preponderance of CIN among parous was also noted by other workers (Mali et al 1969). Present study showed an increasing trend in the occurrence of CIN with age and parity.

An observation which may have bearing on understanding of evolution of CIN, especially among patients with PICS was that of an average age of marital life of 8.8 years for women with CIN-1 lesions being significantly lower than 15 years for women with higher CIN lesions. There are reports of incidence of dysplasia being double in women with more than 10 years of marital life than these with lesser duration (Rao et al, 1973).

Ninety-two percent of women had either adopted contraception other than barrier method or no contraception. This could be considered as one of the contributory factors in ushering cervical squamous lesions due to possible exposure to various infective oncogenes. It may be recalled that consistent use of barrier methods has been shown to decrease the risk of cervical cancer (Slattery et al, 1989).

PICS per se seem to have some contributory effect in addition to other influencing factors studied like age, parity, duration of marital life and interplay of contraceptive non-usage for the causation of CIN. Hence, based on the observations made, it is recommended that a woman with PICS should be subjected to cervical biopsy for histopathologic scrutiny, especially if she is above 30 years, is/has been sexually active for 14 years and is at least a third para.

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