

CERVICAL CYTOLOGY IN TRICHOMONAS VAGINALIS INFECTION

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Introduction

Cervical smear examination has been proved to be considerable value as a diagnostic adjunct for detection of cervical intraepithelial and infiltrative neoplasias. Often difficulties in distinguishing between cellular atypias due to parasitic infections from true neoplasias in the tissues have been described (Bechtold and Reicher 1952). Chronic infections with trichomonas particularly when it becomes entrenched with endocervix has been reported to produce atypical changes in cervical epithelium that present from mild changes in superficial cells to basal cell changes so frightening that they can be distinguished from malignant cells with difficulty (Koss and Wolinska 1959, Berggren 1969).

Keeping these in view the present paper is aimed at to report the incidence and cervical changes those are produced by this parasite which will be of significant value while carrying out routine cervical screening with cytology for early detection of cervical carcinomas.

Material and Methods

During the period from February '80 through December '81 1091 patients who

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attended the out patient of Obst. and Gynaec. Department of S.C.B. Medical College, Cuttack were subjected to cervical scrape cytology collected with Ayre's spatula and Vaginal swab examinations for both trichomonas and monilia prior to vaginal examination. Minimum two smears were collected for cytological examination with Papanicolaou stain. The slides were reported with regards to presence or absence of trichomonas and with or without cellular changes using the criteria laid down by Graubb (1977).

The vaginal swabs were collected with three sterile swab sticks, of which one was examined for the parasite in wet film whereas the other two were utilised for preparation of smears for Gram. stain and culture in Sabraud's medium to isolate and identify monilia. Cases with monilia have been excluded from the present report.

Patients with trichomonas and cervical epithelial changes were further followed up for a period of 6 months with monthly cervical smear examination after specific therapy for the parasite. Of the 231 cases with trichomonas infection, 121 reported themselves for such follow up studies.

Observations

The incidence of trichomonas as a single pathogen in the lower female genital tract

was observed to be 21.17%. It was more common with non-pregnant women (17.50%) than in pregnant ones (3.67%). It existed with symptoms in 78.79% of patients as compared to 21.21% who were asymptomatic.

Papanicolaou stain of cervical smears was observed to be more effective in detecting the parasite than the wet film study from vaginal swabs.

Of the 121 cases followed up for a period of 6 months after therapy for trichomonas, 5.63% had persistence of the

cytologic changes inspite of the absence of the parasite.

Incidence of trichomonas vaginalis infection.

Relationship of trichomonas with cervico-vaginal lesions and methods of identification of the parasite.

Cervical smears studied from patients with trichomonas vaginalis.

Cytologic abnormalities prior and after therapy.

TABLE I
Incidence of Trichomonas Vaginalis in Lower Female Genital Tract

Types of cases	Number	Symptom	Number	Positive	
				Total	Distribution
Pregnant	268 (24.56%)	without	70 (6.42%)	40 (3.67%)	6 (0.55%)
		with	198 (18.14%)		34 (3.12%)
Non-Pregnant	823	without	260 (23.84%)	191 (17.50%)	43 (3.94%)
		with	563 (51.60%)		148 (13.56%)
Total				231 (21.17%)	

TABLE II
Relationship of T.V. With Cervico-vaginal Lesions and Methods of Identification

Cervico-vaginal lesions	Number	Wet film	Pap. smear
No abnormality	23 (9.96%)	7 (3.03%)	23 (9.96%)
Vaginitis	108 (46.75%)	103 (44.59%)	100 (43.29%)
Cervicitis	59 (25.54%)	54 (23.38%)	57 (24.68%)
Cervical erosion	41 (17.75%)	37 (16.02%)	39 (16.88%)
Carcinoma cervix	nil	nil	nil
Total	231 (100%)	201 (87.01%)	219 (94.81%)

TABLE III
Cervical Smears in Patients With *Trichomonas Vaginalis*

Cases studied	Polymorphonuclear		Epithelial cell Abnormality				C.I.S.	I.C.				
	No abnormality	Plenty	Inflammatory		Dysplastic							
			Mild	Moderate	Mild	Severe						
No.	44	19	81	131	23	64	87	7	4	2	nil	nil
%	19.04	8.22	35.06	56.70	9.95	27.70	37.76	3.03	1.73	0.86	0	0

CIS:—Carcinoma in Situ.
IC:—Invasive Carcinoma.

Discussion

The incidence of trichomonas infection of the lower female genital tract has been described to vary from 11% to 32% (Kean and Day 1954, Koss and Wloinska 1959, Kumar and Sadana 1960, Purandare *et al* 1962, Daftary *et al* 1962, Menon *et al* 1962 and Dasgupte *et al* 1977). The increasing incidence of this parasitic infection from 11.3% to 23.8% during a study from 1961 to 1965 was reported by Bertini and Hornstien (1970). Non-pregnant women have been reported to suffer more commonly from this infection as compared to pregnant ones (Menon 1959; Menon *et al* 1962). The present observations on the incidence of this infection as well as with or without pregnancy correlated well with the findings of these workers.

In the current series the parasite was found to be associated with symptoms in 78.79% of cases, while 21.21% were asymptomatic. Similar observations have also been made by Kean and Day (1954), Berggren (1969) and Jeffcoate (1975). The presence of this parasite in asymptomatic women has been attributed to the latent phase of the parasite as has been described by Skacel (1957) and Koss and Wolinska (1959). Purandare *et al* (1962) in a similar study reported the association of the parasite with 33.8%, 20.5%, 18.1% and 12.1% of cases of vaginitis, cervical erosion, vulvitis and without any pathology respectively as has been observed in this study.

Kean and Day (1954) mentioned the detection rate of the parasite to be 94% on careful rescreening of the smears obtained at a routine cancer screening centre. Bertalanffy *et al* (1958), Dart and Turner (1959), Cartor (1959) and Berggren (1969) have also emphasized the cytologic examination with Papanicolaou cellular

TABLE IV
Cytologic Abnormalities Prior and After Therapy

Abnormalities		Prior to therapy	After therapy
Inflammatory	mild	15 (12.40%)	2 (1.65%)
	moderate	32 (26.45%)	5 (4.13%)
	severe	61 (50.41%)	1 (0.83%)
Dysplastic	mild	7 (5.79%)	2 (1.65%)
	moderate	4 (3.31%)	1 (0.83%)
	severe	2 (1.65%)	2 (1.65%)
	Total	121 (100%)	13 (10.74%)

spread to be the most useful technique in detection of trichomonas vaginalis. Frost (1961) was of opinion that when the infection goes into latent phase following therapy or after spontaneous remission the patient usually turn to be symptomatic and organism could not be detected from wet film of vaginal pool material. However, the same could be detected by careful examination of cervical smears containing endocervical material with equal frequency as by culture. This possibly attributes to the lower detection rate of the parasite with wet film in comparison to cervical smears studied in the current series.

The inflammatory atypias as well as the smears without any epithelial abnormalities as noted in the present study correlated well with the reports published by Koss and Wolinska (1959), Frost (1962) and Bertini and Hornstien (1970). Further mild and moderate dysplastic changes were noted to be associated with this parasitic infection of which majority regressed after therapy except 2, 1 and 2 cases of mild, moderate and severe cases of dysplasias respectively. Of these the 2 cases of severe dysplasias were subsequently confirmed by colposcopic guided biopsy and the patients were subjected to hysterectomy. Though from this observation it can

not be said that these dysplastic changes were produced by the parasite which regressed after treatment still it must be emphasized that atypicality produced by trichomonas can confuse with such lesions. The same has also been stressed by Bechtold and Reicher (1952), Lindenschmidt and Stoll (1957), Frost (1962), Berggren (1969) and Bertini and Hornstien (1970).

From these observations it can be concluded that in routine cervical screening programmes for early detection of cancer cervix one should keep in mind the identification of trichomonas vaginalis which can be detected easily as well as in more percentage of cases than wet film from vaginal pool material. Further in patients having mild or moderate dysplastic cervical smears associated with trichomonas should be carefully followed up after specific therapy to observe the persistence of the lesion. Those individuals with severe dysplastic changes in cervical smears inspite of the presence of this parasite must be subjected to other adequate aids to confirm the lesion and to implement appropriate therapy as has been suggested by Frost (1962).

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Summary

The incidence of trichomonas vaginalis infection of the lower female genital tract was found to be 21.17% and it was observed more commonly with non pregnant women (17.50%) as compared to pregnant ones (3.67%). 21.21% of patients with the parasite were asymptomatic. While wet film detected the organism in 87.01% of cases, the same was found with 94.81% of patients from cervical smears studied with Papanicolaou stain. The 121 cases with cytological epithelial abnormalities associated with this parasitic infection available for follow up for a period of six months after specific therapy showed the cellular abnormalities to regress back to normal in all except 13 cases (5.63%). The significance of the detection of this parasite in routine cancer screening programme from cervical smears has been discussed.

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