

VAGINAL CYTOLOGY IN LEUCORRHOEA

by

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Introduction

Leucorrhoea is the most common symptom observed in the patients attending the gynaecology O. P. D. Though the causes of leucorrhoea are many, trichomonas vaginalis is one of the most common parasite in the female genital tract causing increased secretions (Trussel, 1947). Various workers studied vaginal and cervical secretions for the detection of trichomonas vaginalis, (Kean and Day, 1954; Papanicolaou, 1954; Mehta and Sahiar, 1962; Inderjit Singh and D'Souza, 1972).

This paper comprises an analysis of vaginal smears taken from 1232 women attending gynaecology O. P. D. at Medical College, Nagpur during July 1972 to June 1973. The study includes:-

- (1) The determination of the incidence of trichomonal infection in these women.
- (2) The observation of cytological picture in trichomonas positive cases.
- (3) Assessment of hormonal status in above mentioned cases.

Material and Methods

During the above mentioned period, 1232 females were examined clinically for leucorrhoea. Secretions were studied for the presence of trichomonas vaginalis and fungus by hanging drop preparation.

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Presence of fungus was confirmed by Gram's staining.

The cases showing trichomonas vaginalis in hanging drop preparation were subjected for cytological examination. The secretions were collected from the posterior fornix pool with the help of cotton tipped applicator and smear was made on clean glass slide. The wet smear was fixed in equal parts of alcohol and ether for at least half an hour. It was stained by Papanicolaou's method and examined microscopically. Total number of smears examined were 2464. Cytological details were noted and presence of trichomonas vaginalis was confirmed.

Morphologic criteria used to identify trichomonas vaginalis were according to Hughes *et al*, 1966. Changes in cytoplasm included loss of definition of the cellular border, altered staining reaction with eosinophilia or polychromatophilia, cytoplasmic vacuolation and appearance of perinuclear haloes. Nuclear changes included both activity with multinucleation and nuclear enlargement and degenerations. The degenerative changes seen were pyknosis, karyorrhexis and karyolysis with rounded marginal condensation of chromatin, producing an empty nucleus (Hughes, 1966).

The background was inflammatory with varying number of neutrophils, mononuclear cells and histiocytes. Cannon balls were seen characterized by the grouping of leucocytes over the squamous cells. (fig. 1) Dyskaryosis of vary-

ing degree was observed, (Dewan *et al*, 1971).

Results

Total of 1232 femals were examined clinically for leucorrhoea. All were married. The presenting symptom was yellow or white discharge per vaginam in 1046. Eighty patients presented with itching and discharge. One hundred and six patients attended hospital for vague complaints, such as backache and anaemia. In these patients increased secretions were found per vaginam examination.

The duration of the symptom varied in most of the cases from 8 days to 2 months. However, 1 to 2 years duration was seen in 25 cases. The maximum number of cases (1182-95.94%) fell into reproductive age group i.e. 20 to 40 years. Only fifty (4.06%) cases belonged to the age group of 40 to 50 years. Out of these 10, 10 had attained menopause.

In hanging drop preparation, 179 (14.52%) were positive for trichomonas and 128 showed presence of fungus (10.38%). Remaining were taken for

non-specific infection (925 cases—75.08%). The incidence of trichomonas was 14.51 (Table I).

TABLE I
Vaginal Findings in Wet Preparation

Total number of cases examined ..	1232
Number of cases in which the trichomonas vaginalis was present	179
Number of cases in which fungus was identified	128
Number of cases having non-specific infection	925
Incidence of trichomonas vaginalis	14.52%

In smears stained by Papanicolaou's method cytological changes were observed. All of the smears showed inflammatory background. Cannon balls were seen in 1000 cases (81.16%). Altered staining reaction with formation of perinuclear haloes were observed in all cases. The degenerative changes in the nucleus were seen in 140 cases (11.36%); while dyskaryotic changes were seen in 20 cases (1.62%).

Hormonal assessment was done in all smears. Though the inflammatory chan-

TABLE II
Seasonal Incidence of Vaginal Infections in Leucorrhoea

Month	Trichomonas vaginalis	Fungus	Non-specific	Total
July, 1972	13	16	115	144
August, 1972	14	13	107	134
September, 1972	19	27	101	147
October, 1972	5	21	102	128
November, 1972	11	6	60	77
December, 1972	14	13	59	86
January, 1973	12	3	64	79
February, 1973	13	21	89	123
March, 1973	16	14	106	136
April, 1973	11	8	44	63
May, 1973	17	5	40	62
June, 1973	10	5	38	53
Total	179	128	925	1242

TABLE III
Incidence of *Trichomonas Vaginalis* Infection Quoted by Various Authors

Year	Author	Total patient	Type of patient	Incidence
1959	Bauer <i>et al</i>	8401	Young healthy members of Armed Forces	7.2%
1957	Decker	—	Unselected patient Clinic patient	5 to 8% 20%
1955	Devis	4752 1941	Private patient Cancer clinic patient	7.1% 24.9%
1962	Mehta <i>et al</i>	2907 190 762	Family planning centre. General Hospital Cancer Clinic	7.6%
1972	Inderjit Singh	610	Family planning clinic	9.83%
1961	Chandler and Read	—	Unselected patient Leucorrhoeic patient	20-40% 50-70%
1972-73	Present series	1232	Unselected cases	14.52%

ges were present, all the smears falling in reproductive age group showed presence of superficial and/or intermediate cells. Seasonal incidence is given in Table 2.

Discussion

Vaginal secretions from 1232 females were studied (Table 1). Out of them 179 showed presence of trichomonas vaginalis. Incidence of trichomonas vaginalis was 14.52%.

The incidence is compared with the incidence quoted by other authors in Table II. It is seen that the incidence of trichomonas vaginalis is high in leucorrhoea in patients attending general hospitals. This high incidence in general hospitals can be attributed to low socio-economic status. The incidence of trichomonas vaginalis (14.52%) found in our patients is neither high nor low compared to other authors and this may be

due to the fact that this hospital is attended by both type of patients i.e. of high and low socio-economic status. Out of 106 patients in which the increased secretions were detected on vaginal examination, 15 (14.14%) were positive for trichomonas vaginalis. This shows the importance of examination of vaginal secretions in every patient attending gynaecology O.P.D.

As far as seasonal incidence is concerned we did not find any relationship between trichomonas vaginalis infection and various seasons (Table II). Our findings are similar to Mehta *et al* (1962). The least number of patients seen in October could be attributed to the big festivals in this part—Durgapuja, Diwali etc. when women rarely come to the hospital for any disease.

It was seen that highest percentage (95.94%) of women harbouring the infection fell in reproductive age group

and lowest percentage 4.06% fell in the menopausal group. These findings were similar to those of Mehta and Sahiar, 1962, cytological findings were similar to those of other authors (Hughes, 1966, Dewan, 1971).

Dyskaryosis was seen only in 20 cases (1.62%). As for the association of trichomonas with dyskaryosis, Lindenschmidt and Stroll (1958); Frost and Ann (1962) and Bertini (1970) have found an increased association of dyskaryosis with trichomonas infection. Koss *et al* (1959) have shown an equal frequency of dyskaryosis in the presence or in the absence of trichomonas vaginalis.

Summary

A total of 1232 females attending Gynaecology Out Patient Department were examined for trichomonas vaginalis infection by wet preparation of vaginal swab and cytology. Those showing positive infection were 14.52%, mostly in the reproductive age group.

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