

# DIAGNOSIS OF LOWER GENITAL INFECTIONS BY EXFOLIATIVE CYTOLOGY

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## SUMMARY

Exfoliative cytological study of the female lower genital tract was done in 10502 cases over a period of one year. The incidence of various infections found was: *Trichomonas vaginalis* 62'56/1000, *Candida albicans* and allied organisms 10'47/1000, *Condyloma accuminata* 9'9/1000, *Chlamydia trachomatis* 1'05/1000, *Herpes genitalis* 0'38/1000, *Mycobacterium tuberculosis* 0'29/1000 and *Antinomyces israeli* 0'09/1000. A significant number of these patients were asymptomatic. Various diagnostic features of these infections are discussed.

### Introduction

Female lower genital tract can be infected by a number of organisms. Trichomoniasis and moniliasis account for a larger percentage of these infections. The present study was undertaken to study the distribution of these as well as other specific infections of the lower genital tract of the female, especially the asymptomatic ones.

### Material and Methods

Exfoliative cytological study of the lower genital tracts of 10502 women attending the gynaecological outpatient department of K.E.M. Hospital, Bombay, between January 1986 and December 1986 was done. Smears were collected from portio vaginalis and posterior vaginal for-

nix in each case, fixed in ether-alcohol mixture and stained by Papanicolou method. The smears were repeated when in doubt about the diagnosis, and also after appropriate treatment to confirm cure or need for further treatment.

Clinical history was noted to see how many of these patients were symptomatic.

### Results

Trichomonads were seen as indistinct, faintly greyish-blue cells with a variety of shapes. Most of the epithelial cells stained red, many with a perinuclear halo. The nuclei varied in shape, stained darker than normal and often had distinct granules

Monilial hyphae were stained red and were straight or curved, unbranched and sometimes occurred in great numbers. The spores were seen as small, rounded, red refractile bodies in small clusters. The smears were slightly inflammatory.

Smears from cases with *Condyloma ac-*

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Accepted for publication on 2-11-87.

cuminate infection showed large squamous cells often in cohesive sheets or clusters with varying degrees of nuclear enlargement hyperchromasia, binucleation and multinucleation. Occasionally concentric arrangement of cells as pearls was noted. Clear zones were seen in some of the large squamous cells.

Chlamydial infections were associated with numerous coccoid acidophilic elementary bodies in columnar and metaplastic cells. Some of the cells showed larger structured called initial bodies.

Herpetic infections showed moderate to marked enlargement of squamous cells accompanied by a faintly basophilic opaque homogenization of the nuclear contents and margination of chromatin material. In cases with recurrent infection large cells were seen with prominent, large intranuclear eosinophilic inclusions and perinuclear halo.

Tuberculous cervicitis showed epitheloid cells and Langhans' type multinucleated giant cells.

The only case of cervical actinomycosis showed small, irregular islands of amorphous material staining dark brown in color and showing slender hyphae radiating from the central dense core.

The following table shows the incidence of these infections and the percentage of symptomatic cases.

### Discussion

Trichomoniasis and moniliasis are the commonest infections of the female lower genital tract. However they are most often symptomatic, as was found in this study, and do not need cytological study for diagnosis. When in doubt, they are best diagnosed by culture in special media. However, most of the other infections are asymptomatic and need special tests for diagnosis, exfoliative cytology being the easiest and simplest of them all. Scott *et al* diagnosed herpes genitalis in 0'9/1000 cases in American Indians, only 17'07% being symptomatic. Naib *et al* found cytological evidence of genital herpes without any clinical symptoms in 4'3/1000 cases. Tuberculosis of the lower genital tract is a rare disorder and a high degree of suspicion is necessary to make a positive diagnosis from the study of a cytological smear (Schaefer, 1967). Usually the diagnosis is clinical, confirmed by histopathological study. Actinomyces israeli usually does not infect the cervix, and is found in the cervical smears in association with an IUCD, the latter promoting the growth of the fungus in some way (Sagiroglu *et al* 1970).

If subclinical infections by these organisms go undetected, they can spread and pose serious health hazard for the woman, and adversely affect her reproductive

Organism	Infected cases		Symptomatic cases	
	No.	Per 1000	No.	%
Trichomonas vaginalis	657	62.56	624	94.98
Candida albicans	110	10.47	93	84.55
Papilloma virus	104	9.90	37	35.58
Chlamydia trachomatis	11	1.05	2	18.18
Herpes simplex virus 2	4	0.38	2	50.00
Mycobacterium tuberculosis	3	0.29	2	66.67
Actinomyces israeli	1	0.10	1	100.00
Total	890	84.75	761	85.51

function as well. Exfoliative cytology cannot make a positive diagnosis in all cases, but it helps to select cases which can be further investigated by immunocytochemistry and culture.

**Conclusion**

To allow asymptomatic patients to be untreated is hazardous, especially in view of effect of organisms like Herpes simplex virus 2, Chlamydia trachomatis and Actinomyces israeli on the reproductive performance of the woman, and the implications of the spread of infections like tuberculosis and actinomycosis. Exfoliative cytology permits the diagnosis of a large number of such cases, either by itself, or by helping to select cases for further

studies by immunofluorescent microscopy and culture.

**Acknowledgements**

We thank the Dean of Seth G.S. Medical College and K.E.M. Hospital, and the Head of the department of Obstetrics and Gynaecology in the same institutes for allowing us to publish hospital data.

**References**

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Age Group	No. of Cases		Total
	Diagnosed	Not Diagnosed	
15-20	10	10	20
21-25	15	15	30
26-30	20	20	40
31-35	10	10	20
36-40	5	5	10
41-45	2	2	4
46-50	1	1	2
51-55	1	1	2
56-60	1	1	2
Total	65	65	130