

# ISOLATION OF T MYCOPLASMA IN VAGINAL DISCHARGE

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It has been estimated that at least one-third of all gynaecological patients complain of vaginal discharge. Certainly it has a greater nuisance value in its frequent recalcitrance to therapy. Rarely, however, it is of serious cause and generally it is associated with simple infection of the cervix or the vagina. Vaginal discharge is frequently inadequately investigated and incorrectly treated. Accurate bacteriological diagnosis of the cause of the discharge is usually possible and has become increasingly important because of the specific remedies now available for treatment Catterall (1970).

The present study was taken up to investigate the incidence of "T" mycoplasmas in cases of leucorrhoea. The term 'Mycoplasma' first used by Novak in 1929 and

was reintroduced by Edward and Freundt in 1956. Mycoplasmas are distinguished from bacteria, viruses and rickettsia. Mycoplasmas isolated from human genital tract are of two types, 'large colony' and "T" mycoplasmas. Shepard first isolated "T" mycoplasmas (T for tiny) in 1954 and delineated characteristics in 1956 Shepard (1954 and 1956). The subject on genital mycoplasmas has been reviewed extensively (Shepard, 1970; Ford, 1973; McCormack *et al*, 1973 (b); Singh and Kapur, 1974).

## "T" mycoplasmas in female genital tract

Diene's (1937) isolated mycoplasmas for the first time from the Bartholin abscess of a patient. "T" mycoplasmas have been isolated from the vagina in many sexually active women (Braun *et al*, 1970; Mardh *et al*, 1970; Shepard, 1970; Markham *et al*, 1972; McCormack *et al*, 1972 (B)).

## Material and Methods

Seventy married females suffering from leucorrhoea formed the study group and 50 married females not suffering from leucorrhoea formed the control group. These patients were selected at random

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from gynaecology out-patients' department of the All India Institute of Medical Sciences, New Delhi. The youngest patient was 18 years of age and the oldest was 48 years old with a mean age of 31.7 years. None of them were having menopause or pregnancy. The cases as well as controls belonged to poor and low middle classes.

#### History and Clinical Examination

A detailed history was taken and thorough clinical examination of the patients was done. Patients were questioned about the history of extra-marital exposure, the use of oral contraceptive pills and obstetric history.

Colonies of 'T' mycoplasmas were identified by means of a direct specific test for Urease Shepard and Howard (1970) which utilizes the property of 'T' mycoplasmas to hydrolyze urea rapidly with the liberation of ammonia (Purcell *et al*, 1966; Shepard, 1966; Ford, 1967; Shepard and Lunceford, 1967). Colonies of 'T' mycoplasmas appeared as dark to golden brown colonies. In Urease colour test medium U-9 (Shepard and Lunceford, 1970) a change in colour of the medium from yellow to pink with no turbidity was taken as positive reaction due to the growth of 'T' mycoplasmas.

#### Observations

Table I shows the incidence of isola-

TABLE I  
Incidence of 'T' Mycoplasmas in 70 Cases of Leucorrhoea

Diagnosis	Total Number	'T' Mycoplasmas positive		'T' Mycoplasmas negative	
		No.	(%)	No.	(%)
Vaginitis	20	8	(40)	12	(60)
Cervicitis	25	10	(40)	15	(60)
Non-specific leucorrhoea	25	4	(16)	21	(84)
Total	70	22	(31.4)	58	(83.6)

#### Collection of Specimens for 'T' Mycoplasmas

Urethral/cervical/vaginal canal scrapings were collected by a flamed and cooled 22 gauge platinum loop. The loop was bent at a slight angle to facilitate scrapings. Vaginal scrapings were collected from the fornices as well as walls of the vagina.

#### Culture for 'T' Mycoplasmas

A-3 agar and broth Shepard (1969) and U-9 colour test medium Shepard and Lunceford (1970) for culture of 'T' mycoplasmas were used.

tion of 'T' mycoplasma in patients with vaginitis and non specific leucorrhoea.

Of 20 cases who were having vaginitis, 8 (40%) were positive for 'T' mycoplasmas, whereas 25 who were suffering from cervicitis, 10 (40%) had 'T' mycoplasmas. Out of 25 cases who were having non-specific leucorrhoea, 4 (16%) were positive. Apart from vaginal discharge, there was complaint of pruritus vulvae in 17, dysuria in 12, pain in the lower abdomen in 5 and dyspareunia in 2 cases.

Table II shows isolation of 'T' mycoplasma in the study group of 70 patients

with leucorrhoea and control group of 50 and 18 (40%) were positive for 'T' mycoplasmas. In Csonka *et al*, (1966) series, patients without leucorrhoea.

TABLE II  
Age Distribution and Isolation of 'T' Mycoplasmas in Leucorrhoea and Controls

Age distribution in years	No. of cases	Study Group 70				Control Group 50				
		'T' Myco- plasmas positive		'T' Myco- plasmas negative		'T' Myco- plasmas positive		'T' Myco- plasmas negative		
		No.	(%)	No.	(%)	No.	(%)	No.	(%)	
Under 20	2	—	(31.3)	2	(100)	7	—	7	(100)	
21—30	48	15	(31.3)	22	(68.7)	28	5	(17.8)	23	(82.2)
31 above (Maximum 48)	20	7	(35)	13	(65)	15	—	15	(100)	
Total	70	22*	(31.4)	58	(83.6)	50	5*	(10)	45	(90)

\*  $X^2 = 5.03$   
 $P < 0.05$

Of the 70 patients with leucorrhoea; the youngest was 19 years old and the oldest 48, with a mean age of 31.7 years. Maximum number of patients were in the 3rd decade of life. None of the patients admitted to history of extra-marital exposure or of taking oral contraceptive pills. Of the 70 patients in study group, 22 patients were found to be harbouring 'T' mycoplasmas and in 2 of them trichomonas vaginalis was also found. Eight other patients in study group harboured candida. Of the 50 non-leucorrhoea controls, 'T' mycoplasmas were isolated in 5 cases. None of them had trichomonas vaginalis or candida. The incidence of isolation of 'T' mycoplasma in the leucorrhoea and non-leucorrhoea group was statistically highly significant ( $P < 0.05$ ).

#### Discussion

In the present study of 70 married, leucorrhoea cases, 'T' mycoplasmas was isolated in 22 (31.5%). Forty-five cases were suffering from cervicitis/vaginitis

8 (80%) out of 10 cases of cervicitis were positive for 'T' mycoplasmas. Similarly, over 4 (16%) out of 25 cases on non-specific leucorrhoea, were found to be positive for 'T' mycoplasmas but Csonka *et al*, (1966) isolated 'T' mycoplasmas in 11 (37%) out of 30 cases of miscellaneous leucorrhoea. Kundsinn (1970) isolated 'T' mycoplasmas from 85% of 127 women suffering from cervicitis and vaginitis. Mardh *et al*, (1970) found no difference in the rate of isolation of 'T' mycoplasmas from women with lower genital tract infections and from careful control group.

In our 50 non-leucorrhoea married females control, only 5 (10%) were positive. Shepard (1970) isolated 'T' mycoplasmas in 63% of 60 prenatal female military dependents. The clinical findings in these 60 women were negative, there was no evidence of pelvic inflammatory disease, cervicitis, vaginitis or urethritis and his impression was that women may

be primarily asymptomatic carriers of "T" mycoplasmas in genito-urinary tract.

The relationship of sexual activity to vaginal colonization with "T" mycoplasmas was studied by many workers (Csonka *et al*, 1966; Soloman *et al*, 1970; Kundsinn *et al*, 1971 and 1973; McCormack *et al*, 1972) and they observed that isolation of "T" mycoplasmas was considerably higher from promiscuous compared to non-promiscuous women. The rate of isolation of "T" mycoplasmas was less in our leucorrhoea cases both suffering from vaginitis, cervicitis and non-specific leucorrhoea. It can be explained that our patients were domestic wives and were not from the promiscuous group of individuals and they denied any history of extra-marital sexual exposures which might be actually absent or was not admitted for the reason of modesty according to Indian way of life. Secondly, McCormack *et al* (1972a) observed that the number of "T" mycoplasmas is so small and the organisms are so fastidious that with currently available laboratory methods a single vaginal culture may fail to identify "T" mycoplasmas in as many as 22% of colonized women.

McCormack *et al* (1973a) and Mardh *et al* (1970) isolated higher rate of "T" mycoplasmas from women who were taking oral contraceptive pills but our cases and controls never admitted the history of taking pills while under or before investigations for "T" mycoplasmas.

#### Treatment

All the positive cases for "T" mycoplasmas with leucorrhoea were treated with tetracycline hydrochloride 250 mg four times a day for 10 days. There was 100% bacteriological cure. However, relief of leucorrhoea was seen in 18 (81.8%) out of 22 cases.

#### Conclusions

Accurate bacteriological diagnosis of the vaginal discharge is of great importance if modern scientific treatment is to be used efficiently Catterall (1970). Genital infections due to "T" mycoplasmas is an important cause but sometimes it is present as a normal flora in the female genitals. Tetracycline hydrochloride is an effective therapy. It may be worthwhile to treat all cases of female genital infections and non-specific leucorrhoea who are found free from infection with *Neisseria gonorrhoea*, *trichomonas vaginalis* and *candida* with a course of tetracycline hydrochloride in case of lack of facilities to culture "T" mycoplasmas.

#### Summary

Seventy married female cases of leucorrhoea and fifty married females of non-leucorrhoea cases were studied for the isolation of "T" mycoplasmas. Twenty-two (31.5%) and 5 (10%) were found to be positive for "T" mycoplasmas among leucorrhoea and non-leucorrhoea cases. The difference was highly significant. The incidence was found to be less as compared to European figures which may be due to lack of promiscuity among our patients who were house-wives of poor and low middle classes.

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