

TRICHOMONAS VAGINALIS INFECTION AND RECTAL GONORRHOEA IN WOMEN

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Abstract. By culture of rectal samples from 222 female patients with gonorrhoea, gonococci were demonstrated in 138 (62%). The high incidence of positive rectal cultures is probably due to the fact that the culture medium for the isolation of the gonococci contained trimethoprim in addition to the inhibitors usually employed to suppress unwanted co-existing bacteria. Trimethoprim almost completely suppresses swarming *Proteus*, thus making the medium still more effective in preventing overgrowth of the gonococci by other organisms. *Trichomonas vaginalis* was isolated by culture from the genitals of 69 of the patients. In patients where gonococci were not isolated from the rectal cultures trichomonades were found to be just as frequent as in patients where gonococci were isolated from the rectum—32% and 30%, respectively. Thus the assumption that rectal gonorrhoea in women is more likely when a discharge due to associated trichomonal infection is present, could not be confirmed.

Since the introduction of selective media for the diagnosis of gonorrhoea, rectal gonorrhoea in women has been demonstrated more frequently than formerly. An incidence of 10–30% in female gonorrhoea patients was previously reported (1, 2, 6, 14, 18). The recent use of selective media has greatly reduced the overgrowth of gonococcal cultures by other organisms. This has been especially so with rectal specimens where contaminants were once very dominant. By using selective media it is now possible to find rectal infection in from 43% (3) to approximately 50% of female patients with gonorrhoea (5, 13, 21).

The agents which are usually added to render the media selective are colistin (sodium colistimethate), vancomycin and nystatin (16). This selectivity has been further improved now that trimethoprim has been added (11, 15, 20), since overgrowth of the gonococci by swarming *Proteus* is hereby prevented.

It is generally taken for granted that rectal

gonorrhoea in women is caused by the spread of infection from the genital tract; flow of vaginal discharge or menstrual blood infecting the everted anal mucosa during defecation. It has also been assumed therefore that rectal gonorrhoea is more likely to be found where there is profuse discharge due to the presence of associated trichomonal vaginitis (7).

The purpose of the present study was to examine the incidence of rectal gonorrhoea in women by employing a culture medium containing trimethoprim for the isolation of the gonococci, and to ascertain whether trichomonades are found more frequently in female patients with rectal gonorrhoea than in those with uro-genital gonorrhoea only.

MATERIAL AND METHODS

The study was carried out on 222 female patients who were attending the Oslo Bureau of Public Health, Department of Venereal Diseases, and in whom gonococci had been verified by culture. Specimens were taken from the urethra, cervix and rectum in all cases and from the vagina in most cases. The specimens were sent on charcoal-treated swabs placed in solid Stuart medium to the laboratory, where they were plated out on chocolate agar culture medium. The medium contained the three inhibitors of unwanted organisms recommended by Thayer & Martin (16): vancomycin, colistin and nystatin, giving a concentration of 3 µg/ml, 7.5 µg/ml and 10 units/ml, respectively, for these antibiotics and in addition, trimethoprim lactate, giving a concentration of 5 µg/ml (20). The cultures were incubated at 36.5°C in an atmosphere containing 5% CO₂ for 18–20 hours and where necessary, a further 24 hours at 36.5°C, but without CO₂. Gonococci were identified on the basis of their colonial and microscopical appearance, oxidase reaction and sugar fermentation reaction.

Feinberg & Wittington medium (4) with 0.1% agar, distributed in conical centrifuge tubes (diameter approx.

Table I. *Trichomonas vaginalis* infection in 222 females with gonorrhoea

	No. of patients with positive Gc culture from the rectum	No. of patients with negative Gc culture from the rectum
<i>T. vaginalis</i> found	42 (30%)	27 (32%)
<i>T. vaginalis</i> not found	96	57
Total	138	84

12 mm) containing 8-9 ml medium each, was used for the culture of *Trichomonas vaginalis*. The swabs with urethral and cervical specimens were first streaked onto the chocolate agar culture medium and then placed in the trichomonas medium with the vaginal specimen, in cases where such had also been taken. The swabs were cut shorter to fit the tubes, and the specimens were then incubated at 36.5°C. A Pasteur pipette was used to collect material from the tapered end of the tube for examination under a phase-contrast microscope. Microscopical examination was performed after 2 days and, where negative, after a further 3 days. In some cases the specimens were only examined once, on the fourth day of incubation.

RESULTS

The results can be seen in Table I. 138 (62%) had positive gonococcal cultures from the rectum. *Trichomonas vaginalis* was cultured from the genitals of 42 (30%) of these patients. There was no growth of gonococci from the rectal cultures of 84 patients and in 27 (32%) of these, trichomonades were found.

In 9 cases (4%) gonococci were cultured exclusively from the rectum.

DISCUSSION

In Greenland, Olsen (10), in a series of 265 female patients with gonorrhoea, succeeded in cultivating gonococci from the rectum of as many as 169 (63.7%) using a selective medium containing polymyxin B sulphate and nystatin. The specimens were plated directly out onto the medium. Otherwise, our finding of rectal infection in 62% of female patients with gonorrhoea is a greater frequency than usually reported. Previously at this laboratory, we have not isolated gonococci from rectal specimens nearly so frequently as in the present study, and this is un-

doubtedly due to the use of trimethoprim in the culture medium, the advantage being especially pronounced in rectal specimens where overgrowth of contaminants often occurs. Overgrowth of *Proteus* is almost completely prevented by use of the trimethoprim-containing medium. There were only 2 cases of overgrowth of *Proteus* amongst the 222 rectal specimens which were examined (less than 1%) and none of the urethra or cervix specimens showed such overgrowth.

In the present study, trichomonades were cultivated from 69 patients (31%). This is a somewhat lower incidence than was found during an investigation at this institute 10 years ago when trichomonades were cultivated from 117 (46%) of 253 female gonorrhoea patients from a corresponding milieu (19). Ten years ago the highly effective antitrichomonal drugs, such as metronidazole, were not yet in common use. It is possible that extensive use of these drugs has caused the trichomoniasis incidence rate to decrease. Our result agrees with Rohatiner's investigation (12) which showed that the incidence of trichomoniasis amongst female patients at a venereal disease clinic in London had fallen considerably between 1958 and 1966.

During our study trichomonades were found just as frequently in specimens from patients without rectal gonorrhoea, as in those with rectal gonorrhoea: 32% and 30%, respectively. As mentioned earlier, the general opinion is that rectal gonorrhoea in females is due to the backward flow of the discharge from the vulva which then infects the rectal mucosa. In this connection it is interesting to note that Jensen in an investigation in Copenhagen in 1955 (6) found that more than half of the female patients with rectal gonorrhoea admitted peno-anal contact with a partner, and he concluded that peno-anal coitus seemed to be the prominent cause of rectal gonorrhoea in women. It is stated elsewhere that rectal intercourse is seldom the cause of gonococcal proctitis in women (7, 9, 17). Kinsey and co-workers (8) seem also to have meant that anal coitus is rare amongst heterosexuals, in that they state in this connection "There is an occasional instance of anal coitus". The present investigation, however, does not support the assumption that rectal gonorrhoea would be more likely in the presence of discharge due to associated trichomonal vaginitis.

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