

## DIAGNOSIS AND TREATMENT OF TRICHOMONAL URETHRITIS IN MEN

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*Trichomonas vaginalis* was first reported to be present in the genital tracts of male patients by Marchand in 1894. Since then many other instances and series of cases have been published. However, until recently the recorded incidence of infection in men has been low. With improved techniques and increasing interest in non-gonococcal urethritis during recent years, results have indicated that infestation with the parasite is more common than had formerly been supposed. There seems little doubt that the organism is one of the causes of genital infection in the male, though its precise importance in the aetiology of non-gonococcal urethritis is not yet determined.

The results of investigation have varied greatly in different hands. For example, Ackermann (1935) failed to find *T. vaginalis* in the urethral secretions of 37 men with non-gonococcal urethritis, though the parasite was present in the vaginal secretions of six of their consorts. Allison (1943) found *T. vaginalis* in 15% of a group of white patients with gonorrhoea or other genital infections and also in 200 negroes who had been rejected for military service because of venereal disease; 95% of the negro patients had urethral strictures. Feo (1944) found the parasite in 121 of 735 male negroes (16.4%), and in 23 of 191 male white patients (12%). Whittington (1957) found *T. vaginalis* in 15.3% of 326 men with non-specific urethritis. The highest recorded incidence is that of Coutts *et al.* (1955), who claimed that 68% of 2,482 male patients in Chile were infected with the parasite.

The object of this investigation was to examine in detail the clinical and bacteriological findings in a large series of male patients with trichomonal urethritis and to attempt to evaluate various forms of therapy.

### MATERIAL AND METHODS

All the patients included in this series attended the Whitechapel Clinic of the London Hospital during the three years from January, 1956, to January, 1959. A detailed history was obtained from each patient and a thorough physical examination performed. Urethral specimens for microscopical examination were taken by the method advocated by Lanceley (1954) by gently stroking the urethral wall with a platinum loop. The slides were examined at once by dark-ground microscopy. In addition, smears of the urethral secretions were also stained with Gram's stain, and examined microscopically under the 12-in. objective. Cultures

for *T. vaginalis*, using the liquid liver medium of Feinberg and Whittington (1957), were performed in half of the cases. Stuart's transport medium was also inoculated with specimens from the urethra, and these were later transferred to MacLeod's chocolate agar. In a small number of cases the centrifuged deposit of urine was examined microscopically and cultures were performed. In all cases in which the organism was found attempts were made to persuade the consorts to attend for examination and, if necessary, treatment.

#### DIAGNOSIS

*T. vaginalis* was found in 126 cases. During the same three-year period there were 2,300 infections described as non-gonococcal urethritis recorded at the clinic. Trichomonal urethritis, therefore, comprised 5.5% of the total infections diagnosed as non-gonococcal urethritis.

The average age of the patients was 33 years. There were 82 white patients and 44 of negro race.

Eighteen patients (14.3%) had no symptoms referable to the genito-urinary tract. Ninety patients (71.4%) complained of urethral discharge: the type of discharge was very variable, but in most cases was small in quantity, mucopurulent, and most obvious early in the morning before the first micturition; in a small proportion of cases, however, it was frankly purulent, and thick, and was present throughout the day. Itching inside the penis was complained of by 26 patients (20.6%), dysuria occurred in 15 (11.9%), frequency of micturition in 4 (3.2%), two had noticed blood-stained urethral discharge, and one complained of haematuria. Pain and swelling of an epididymis was the presenting manifestation in one case.

At the first examination 80 of the patients (63.5%) were found to have a urethral discharge. In the cases of 38 patients (30.1%) no urethral discharge was seen at the first examination and urethral secretion was found only when the patients attended for early morning tests before passing the first morning urine. No evidence of discharge was found, even on early morning testing in eight cases (6.3%).

*T. vaginalis* was found in the urethral scrapings in 112 of the 126 cases (88.8%). Cultures were performed in 63 cases and were positive in 58 (92%). In two cases the parasite was found in the centrifuged deposit of urine after scrapes and cultures had proved negative.

Gonococci were isolated from the urethral secretions of eight patients. In most of the remainder, the Gram-stained smear from the urethra showed between 10 and 20 pus cells per 1 12-in. microscopical field, a few epithelial cells, and a variety of Gram-positive and Gram-negative organisms. Cultures of the urethral discharge grew mainly streptococci, staphylococci, diphtheroids, and occasionally *Escherichia coli*.

Urethral stricture was found in 10 patients (7.9%), and all 10 showed a marked tendency to relapse after treatment, but the results of therapy improved after dilatation of the strictures.

The sexual partners of 67 of the patients were traced and attended for examination. *T. vaginalis* was demonstrated in the vaginal secretions of 57 (85%) of them. In several cases in the male the results of treatment were unsatisfactory until the consorts had been examined and treated.

#### TREATMENT

Little has been written about the treatment of trichomonal urethritis in the male. Liston and Lees (1940) believed that an alkaline urine inhibited the development of trichomonads and relieved symptoms. Strain (1945) favoured calcium mandelate by mouth. Harkness (1950) recommended urethro-vesical irrigations combined with prostatic-vesicular massage, especially in cases with involvement of the prostate or seminal vesicles. Disappointing results were obtained with the systemic drug 2-acetyl-amino-5-nitrothiazole and with the antibiotic "trichomycin" (Catterall and Nicol, 1957), and so far a suitable oral therapy is not yet available.

It has been suggested that the disease is self-limiting in men and tends to spontaneous cure. In this regard, Lanceley and McEntegart (1953) observed three experimentally infected men and found the organism in the genital tract for from 4 to 94 days. The observations of Whittington (1957) on a group of 19 patients with trichomonal urethritis from whom treatment was withheld did not support the view that spontaneous recovery was a common happening. In this series no treatment was given to 14 patients with trichomonal urethritis. Two patients defaulted during follow-up, but the remaining 12 were observed for three months. Trichomonads were found in the urethral secretions or in the centrifuged deposit of urine in 10 of the patients throughout the period of follow-up. In the remaining two the parasite could not be found, though one of them continued to have mild symptoms. Thus the evidence, so far as it goes, indicates that spontaneous cure is probably exceptional.

A small group of 12 patients was treated with oxytetracycline, 250 mg. six-hourly for five days. In two cases the parasite disappeared from the urethral secretions during treatment and was not found again during the three-month follow-up period. In the other 10 cases, trichomonads were present in the urethral secretions throughout the period of treatment and at the end of treatment.

The remaining 100 patients were all treated with urethro-vesical irrigations, using a variety of therapeutic agents. Fifty were each given 10 daily urethro-vesical irrigations, using a 1 in 8,000 solution of potassium permanganate. There were eight defaulters, leaving 42 patients for assessment. Twenty-five (59%) were regarded as cured in that no relapse occurred during the three-month follow-up period.

Thirty patients were treated with daily urethro-vesical irrigations for 10 days, using a 1 in 8,000 solution of oxycyanide of mercury. Four patients defaulted, leaving 26 for assessment. Of these 26 patients, 18 (69.2%) were regarded as cured after a follow-up period of three months.

Lastly, 20 patients were treated with 10 daily urethro-vesical irrigations, using a 1 in 10,000 solution of dequalinium chloride ("dequadin"). There was one defaulter in this group. Of the remaining 19 patients, 14 (73.6%) were regarded as cured after a follow-up period of three months.

The lowest cure rate in this series of patients treated with irrigations was almost 60%, which is higher than might be expected with the best form of treatment in female patients, and it is possible that the difficulties in detecting the organism in the male give an erroneously high cure rate and produce a false impression of the success of treatment.

#### DISCUSSION

There is general agreement that symptoms may be mild or altogether absent in trichomonal infestations of the male urethra. In the present series the commonest complaint was of urethral discharge, and many patients complained of itching inside the penis. More serious symptoms, such as dysuria, frequency, haemorrhagic discharge, haematuria, and pain and swelling of an epididymis, did occur in a small number of patients.

The value of using both wet smears of the urethral scrapings and cultures in the diagnosis of trichomoniasis has been pointed out by Whittington (1957) and Nicol (1958). The use of the two methods in the follow-up also provides more rigid criteria for the cure of the condition. In 30% of the patients no evidence of urethritis or of urethral disease was detected when the patients were first examined during the day. The diagnosis in all these cases was made by examining the patient first thing in the morning before he had passed the morning urine. This early morning smear and culture test is of inestimable value in the investigation of cases of urethritis from whatever cause.

The most satisfactory method of treating trichomonal urethritis in men at the present time appears to be with urethro-vesical irrigations, using weak solutions of potassium permanganate, oxycyanide of mercury, or dequalinium chloride. If the consort is also treated and sexual intercourse stopped until the parasite is eradicated from the genital tract, a reasonably high cure rate may be expected. If relapse occurs, without the likelihood of reinfection, the possibility of urethral stricture should be considered and urethroscopy performed. It is, however, probable that more satisfactory treatment of this condition must await the discovery of a systemic trichomonicidal substance which is effective when given by mouth or by injection.

#### SUMMARY AND CONCLUSIONS

The symptoms and signs of 126 cases of trichomonal urethritis in male patients are reviewed. The use of fresh urethral scrapings and of urethral cultures are recommended for diagnosis and for follow-up. The value of the early morning smear and culture test in diagnosis is stressed.

The results of treatment in 112 cases are described. Moderately satisfactory results can be obtained in urethro-vesical irrigations, using a weak solution of potassium permanganate, oxycyanide of mercury, and dequalinium chloride.

The presence of urethral stricture may be responsible for some cases of failure of treatment and of early relapse.

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