

Case Report: *Trichomonas vaginalis* Associated with Chronic Penile Ulcers and Multiple Urethral Fistulas

Bernadett I. Gosnell, Cecilia T. Costiniuk, Elias Mathaba, and Mahomed-Yunus S. Moosa*

Department of Infectious Diseases, Nelson R. Mandela School of Medicine University of KwaZulu-Natal, Durban, South Africa; King Edward VIII Hospital, Infectious Diseases Specialists' Clinic, Congella, Durban, South Africa; Department of Medicine, Divisions of Infectious Diseases/Chronic Viral Illness Service, and Lachine Hospital, McGill University Health Centre, Montreal, Quebec, Canada; Cytology Laboratory, Academic Complex, KwaZulu-Natal, National Health Laboratory Service, Durban, South Africa

Abstract. The case of a 29-year-old, HIV-infected man presenting with *Trichomonas vaginalis* (TV)-associated chronic penile ulcers and multiple urethral fistulas is described. To our knowledge, this is the first description of chronic TV infection being implicated as the probable cause of a destructive lesion leading to sinus drainage and fistula formation.

A 29-year-old, HIV-infected African man (CD4 364 cells/ μ L and viral load < 150 copies/mL) presented to the King Edward VIII Hospital Infectious Diseases Clinic in Durban, South Africa, complaining of oozing pus from discrete areas over his glans penis with leaking of urine from those same areas on micturition. This illness evolved over the preceding 7 months. He was otherwise well and had initiated antiretroviral therapy 3 months earlier.

Initial genitourinary examination revealed a circumcised penis with two wart-like lesions in the dorsal sulcus oozing pus and five further small fistulas draining pus with frank pus oozing from the urethra (Figure 1). On voiding, 3/5 sinuses and one of the two cutaneous warts leaked urine, suggesting a connection between the urethra and the surface of the penis. He was given three courses of cefixime 400 mg oral stat, one course of doxycycline 100 mg 12 hourly for 7 days, and one course of metronidazole 2 g stat over the preceding 7 months with no impact on his symptoms. Cytological examination of the purulent material revealed squamous epithelial cells and suppurative inflammation. Organisms with features suggestive of *Trichomonas vaginalis* (TV) were observed. No acid-fast bacilli or malignant cells were noted. The patient was treated with KMnO₄ soaks for the lesions.

On follow-up 2 months later, the patient reported no change in his condition. Physical examination was unchanged. Gram stain of purulent material revealed scanty leukocytes, gram-positive cocci, moderate gram-negative bacilli, and moderate gram-negative coccobacilli. Bacterial culture grew *Enterococcus faecalis* and *Staphylococcus hyicus*, susceptible to penicillin. Auramine O stain did not reveal any acid-fast bacilli, and mycobacterial culture was negative. Cytology again revealed the presence of TV accompanied by reactive cellular changes consistent with *Trichomonas* infection (Figure 2). There was no evidence of malignant cells or acid-fast bacilli. The persistent presence of *Trichomonas* led to treatment with metronidazole 400 mg 8 hourly for 14 days.

At the 2-week review, the patient reported resolution of the purulent discharge from the sinuses. Physical examination still revealed the warty lesion. A biopsy of the wart confirmed



FIGURE 1. At the patient's initial presentation to the clinic, his penis was noted to have two warty lesions in the dorsal sulcus, oozing pus, and five small fistulas that were also draining pus. Frank pus was also noted to be draining from the urethra.

condyloma acuminatum with a background of chronic inflammation. At 3-week review, the patient reported marked healing of the sinuses/fistulae. On review 6 months later, all but one sinus had completely healed. A remaining discrete lesion oozed minimal fluid on pressure but not urine on micturition. Cytology of this fluid demonstrated cellular debris.

As far as can be determined, this is the first description of TV infection implicated as the probable cause of a destructive lesion leading to sinus drainage and fistula formation. Another similar presentation involving TV was reported. The authors in that case attributed the rectovaginal fistula to Behcet's disease and implicated TV infection in the pathogenesis of the Behcet's disease.¹ In the current case, the only potential pathogen repeatedly noted was TV. Resolution of the lesion with metronidazole, which is unlikely to have addressed any other potential pathogen missed on microbiological testing, supports TV as the inciting pathogen.

In males, following an incubation period of about 10 days, trichomoniasis can result in asymptomatic carriage, a non-gonococcal-like urethritis and/or prostatitis.² Several old reports have associated TV with urethral strictures in males.^{3–5} Furthermore, in vitro studies have demonstrated that TV produces

*Address correspondence to Mahomed-Yunus S. Moosa, Department of Infectious Diseases, Nelson R. Mandela School of Medicine, University of KwaZulu-Natal, Private Bag 7, Durban 4013, South Africa. E-mail: moosay@ukzn.ac.za

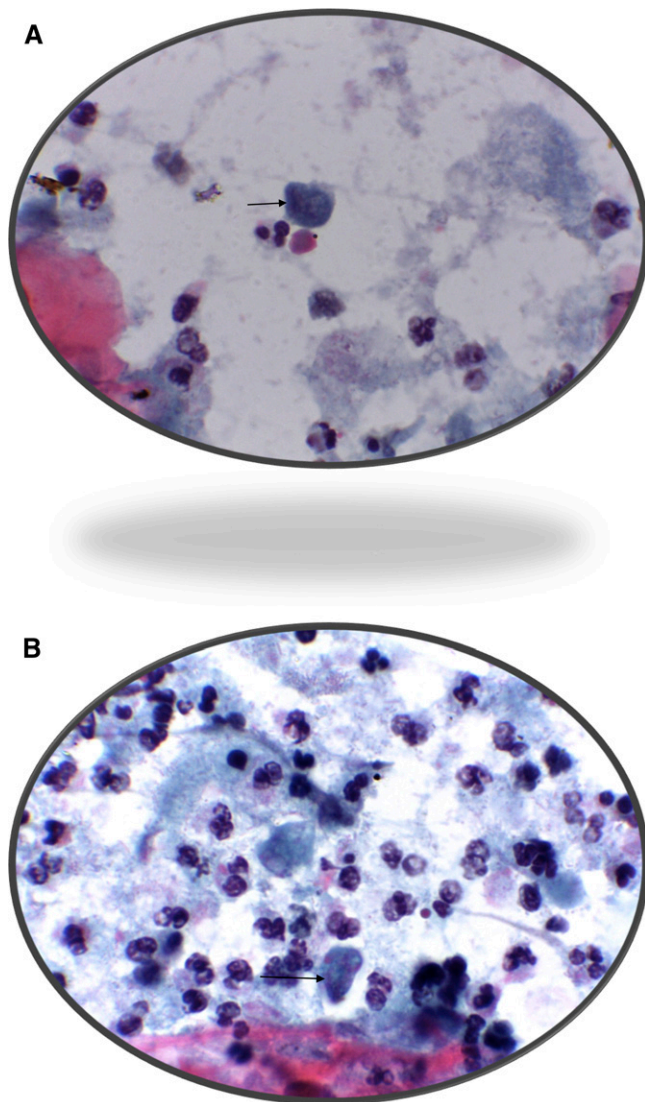


FIGURE 2. 100× higher magnification. (A) Pap stained: *Trichomonas vaginalis*, a round to oval cyanophilous organism, with unicellular pear-shaped, pale-green cytoplasm and a slightly stained eccentric, dark-shaded nucleus (shown by arrow). (B) Pap stained smear: A pronounced inflammatory reaction associated with this protozoan organism shown by marked neutrophilic infiltration. *Trichomonas* organism with intracytoplasmic reddish granules (shown by arrow).

virulence factors that can cause host cell damage contributing to tissue destruction and inflammation.^{6,7} These observations added weight to the possibility that TV is able to, directly or indirectly, cause tissue destruction and healing with fibrosis. In

our patient, the condyloma acuminatum was considered an incidental sexually transmitted infection (STI) having no influence on this presentation of *Trichomonas* infection. This assumption was supported by the virtual complete resolution of the fistulous lesions with metronidazole treatment alone.

TV can be diagnosed in the laboratory by microscopic examination of a wet mount preparation, in vitro cultures and molecular methods. Our laboratory only uses wet mount microscopy for diagnosis. Urethritis is usually associated with a low concentration of organisms at site of the infection in males.^{8,9} The detection of TV by cytology in our case suggests a high load of TV at the site of infection, increasing the probability that *Trichomonas* might be playing an etiologic role. However, one cannot entirely rule out the possibility that an unidentified, metronidazole-responsive pathogen could have been involved.

Received September 19, 2014. Accepted for publication December 30, 2014.

Published online March 16, 2015.

Acknowledgments: CTC was a Canadian HIV Trials Network (CTN) and Royal College of Physicians and Surgeons of Canada Detweiler Traveling Fellowship recipient.

Financial support: No funds were received for the preparation of this manuscript. The patient provided written consent for the publication of this case report and accompanying photographs.

Authors' addresses: Bernadett I. Gosnell and Mahomed-Yunus S. Moosa, Department of Infectious Diseases, Nelson R. Mandela School of Medicine, University of KwaZulu-Natal, Durban, South Africa, E-mails: Gosnell@ukzn.ac.za and moosay@ukzn.ac.za. Cecilia T. Costiniuk, Lachine Hospital of the McGill University Health Centre, Lachine, Quebec H8S 3N5, Canada, E-mail: c.costiniuk@gmail.com. Elias Mathaba, NHLS Cytology Laboratory, Academic Complex, KwaZulu-Natal, Durban, South Africa, E-mail: elias.mathaba@nhls.ac.za.

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