

CASE REPORT: COBBLESTONE

TV or not TV?

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A rchway Sexual Health Clinic is an inner city genitourinary medicine clinic. Its attendees have a high prevalence of sexually transmitted infections (STIs) by UK standards. *Trichomonas vaginalis* (TV) was found in 2.3% of women screened in the year 2000. TV is diagnosed by wet preparation microscopy and cultures. Typically 1–5 women/week are diagnosed with TV.

In February 2001 12 women were diagnosed with TV by wet preparation microscopy in a 1 week period. This cluster was noted, raising the possibility of a local TV epidemic. Case notes were reviewed to further investigate this cluster.

CASE REPORTS

Four of 12 cases of TV occurred in asymptomatic women, with unremarkable examinations, three with normal vaginal pH values (see table 1). Monogamous sexual histories suggested these four cases were at low risk for STIs. The remaining eight cases were classified as higher risk for TV (multiple partners/previous TV/sexual assault). Symptoms and findings in some cases could be explained by concomitant diagnoses (bacterial vaginosis/candidiasis/*Neisseria gonorrhoeae*/*Chlamydia trachomatis*).

Culture results for TV were only positive for 2/12 patients.

Case note review demonstrated unexpectedly high levels of TV which were diagnosed by wet preparation microscopy.^{1–3}

Culture confirmations were negative in all but two patients. Contamination of wet preparation microscopy samples was felt likely.

Wet preparation microscopy is performed by application of a posterior fornix swab into normal saline on a microscopy slide. The saline was deemed a potential reservoir for contamination. Saline samples from examination rooms were examined microscopically. One saline sample contained a motile TV-like organism. This was identified as *Bodo saltans*, a contaminant.

We informed our patients rapidly of the possible misdiagnosis. No serious sequelae were reported by our patients; several expressed relief.

Key points

- A variety of flagellate protozoa resembling *Trichomonas vaginalis* can contaminate saline
- Use of sterile saline for wet preparation microscopy will avoid such contamination

THE CONTAMINANT

Bodo saltans is a flagellate protozoan with worldwide distribution.⁴ It is non-pathogenic. It measures 4–10 µm long and is usually ovoid in shape. It has a short anterior and a longer trailing flagella (which mimics the undulating membrane of TV). *Bodo saltans* can spread as an airborne cyst. We hypothesise a cyst landed in saline, containing bacteria, in the examination room and hatched. Reproduction by binary fission then occurred. This is the first reported case in a genitourinary medicine clinic. There are many other similar organisms that could result in contamination and misdiagnosis.

RECOMMENDATIONS

This contamination could occur elsewhere. False positive diagnosis of STIs can have a variety of important emotional, psychological, and medicolegal sequelae.⁵

Our experience has enabled us to improve diagnosis of TV and eliminate the risk of saline contamination with this and other flagellate organisms.⁴ Contaminated saline can be avoided by using sterile saline applied directly onto a microscope slide. Saline should not be applied from non-sterile containers or with reusable pipettes.

Microscopic diagnosis can be improved by increasing familiarity with the morphology and motility of TV. We recommend a second staff member checks all positive wet preparation microscopy and culture confirmation. There is also a need to provide good reference materials for microscopy. An awareness of organisms, like *Bodo saltans*, could prevent similar misdiagnosis recurring.

Table 1 A summary of findings from the case notes review

Case No	Symptoms	Signs	pH	Microscopic findings	Previous STI	Concurrent GU problems	Sexual risk	TV culture result
1	None	None	4	Normal	Chlamydia	None	Low	Negative
2	None	None	4.5	Normal	Warts	None	Low	Negative
3	None	None	4.5	Normal	None	None	Low	Negative
4	None	None	5.5	Candida	Warts	None	Low	Negative
5	Discharge offensive	Discharge	7	Clue cells	Gonorrhoea, chlamydia	Bacterial vaginosis	Yes	Negative
6	Dysuria	Discharge cervicitis	5	Mixed flora	None	Gonorrhoea, chlamydia	Yes	Negative
7	Discharge	Discharge	4.5	Normal	TV, chlamydia	None	Yes	Negative
8	Discharge pruritis	Discharge	4.5	Spores	None	Chlamydia	Yes	Negative
9	Discharge offensive	Discharge	6	Clue cells	PID	Bacterial vaginosis	Yes	Negative
10	Discharge pruritis	Discharge	6	Clue cells	HSV	Chlamydia, bacterial vaginosis	Yes	Negative
11	Discharge	Discharge	6	Mixed flora	None	None	Yes	Positive
12	Discharge	Vaginitis, cervicitis	6	Normal	None	Chlamydia	Yes	Positive

CONTRIBUTORS

All authors contributed to the manuscript; AS prepared the first and final manuscript; AS, SP, and BC collated data on the subjects; DW identified and described *Bodo saltans*; PK and NS reviewed and amended the manuscript.

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