Correspondence

tics without improvement. We treated her successfully with local applications of piperazine solution for only eight days, and more than 18 months elapsed since without any recurrence. In chronic cases of sterile pyuria, therefore, urine should be examined for parasites. If the ova or larvae of *E. vermicularis* are found treatment should be by local irrigation of the urethra and bladder and vaginal application of piperazine salts.

The most probable source of repeated urinary tract infections in our patient was the vagina and not the intestinal tract. This explanation is based on three observations: (1) stools and perianal swabs from her and her husband were repeatedly negative for *E. vermicularis*, (2) her condition responded to topical vaginal treatment, and (3) no antimicrobial or other drug was required to treat this condition.

Yours faithfully,
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References

- 1 Belding DL, ed. *Textbook of clinical parasitology*. 2nd ed. New York: Appleton-Century-Crofts, 1952:422-34.
- 2 Sjoval A, Akerman M. Peritoneal granuloma in women due to the presence of oxyuris vermicularis. *Acta Obstet Gynecol Scand* 1968;47:361-72.
- 3 Adungo NI, Ondijo SO, Pamba HO. Observation of *Enterobius vermicularis* ova in urine: three case reports. *East Afr Med J* 1986; 63:676-8.

TO THE EDITOR, *Genitourinary Medicine*

Importance of *Gardnerella vaginalis* as an aetiological agent in bacterial vaginosis

Sir,
Ching *et al* have reported that using the PEM-GVA (plastic envelope method) *Gardnerella vaginalis* was isolated from 47 of 49 (96%) of women with clinical bacterial vaginosis (BV).¹ The PEM broth medium showed an adherence of *G vaginalis* bacteria in 75% of these patients.

Using the PEM-GVA test, we undertook a study specifically directed at further investigating the in vitro adherence of *G vaginalis* in patients with symptomatic BV. We studied 103 consecutive women attending a local health clinic. We compared the results of pelvic examinations with results of the PEM-GVA and conventional techniques.¹⁻³

Table 1 shows that *G vaginalis* was isolated

Table 1 Isolation of *Gardnerella vaginalis* from 19 women with and 84 without bacterial vaginosis (BV) (figures are numbers (percentages) of women yielding *G vaginalis*)

Category	No	PEM-GVA	Conventional culture
BV	19	19 (100)	16 (84.2)
Non-BV	84	18 (21.4)	18 (21.4)
Totals	103	37	34

from 19 (100%) women with BV and 18 (21.4%) of the remaining 84 patients, who did not have BV. Appreciable adherence, as shown in table 2, occurred in 18 (95%) of the 19 women with BV and five (6%) of the 84 other patients ($p < 0.0001$). Table 3 shows that appreciable numbers of clue cells were found in 16 (84%) of the 19 women with BV, and four (5%) of the 84 other patients ($p < 0.0001$). When appreciable bacterial adherence and clue cells were absent, results correlated best with a BV negative predictive value of 98%.

A previously unreported observation was used in this study as a possible indicator of BV, namely the presence of gas bubbles in a patient's discharge. It was present in all the positive symptomatic confirmed cases.

In vivo adhesion of *G vaginalis* to epithelial cells may be important in the pathogenesis of BV.⁴ Whether any relation exists between the in vivo and in vitro adherence described previously is speculative. The results of this study, however, indicate that the PEM-GVA provides a rapid, sensitive, and specific method of growing *G vaginalis*.

Table 2 Adherence density of *Gardnerella vaginalis* in 103 women

Adherence density	BV	Non-BV
4+	14	1
3+	4	4
2+	1	5
1+	0	3
None	9	71
Total	19	84

Appreciable densities were 3+ and 4+.

Table 3 Clue cell density in 103 women

Clue cell density	BV	Non-BV
4+	10	0
3+	6	4
2+	2	4
1+	1	7
None	0	69
Total	19	84

Appreciable densities were 3+ and 4+.

This system also presents the microscopic visualisation of bacterial adherence and clue cells that correlate significantly with the clinical diagnosis of BV.

Yours faithfully,
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References

- 1 Ching LQ, Borchardt KA, Smith RF, Beal CB. A 24 hour plastic envelope method for isolating and identifying *Gardnerella vaginalis* (PEM-GVA). *Genitourin Med* 1988;64: 180-4.
- 2 Piot P, van Dyck E, Totten PA, Holmes KK. Identification of *Gardnerella vaginalis*. *J Clin Microbiol* 1982;15:19-24.
- 3 McFaddin JF. *Biochemical tests for identification of medical bacteria*. 2nd ed. Baltimore: Williams & Wilkins, 1980:4-12.
- 4 Scott TG, Smyth CJ, Keane CT. In vitro adhesiveness and biotype of *Gardnerella vaginalis* strains in relation to the occurrence of clue cells in vaginal discharges. *Genitourin Med* 1987;63:47-53.

TO THE EDITOR, *Genitourinary Medicine*

Acute urethritis due to *Neisseria meningitidis* group A acquired by oro-genital contact: case report

Sir,
Following the recent report of urethritis due to *Neisseria meningitidis*, acquired from heterosexual oro-genital contact,¹ we wish to report a similar case. A 16 year old school-boy was referred by his GP in January 1989. He gave a history of pain in the left iliac fossa radiating to the groin for one day. He denied any urethral symptoms, and maintained that he had never had sexual intercourse. There was no significant past medical history. On examination he had a tender swelling adjacent to the left testicle and a profuse purulent urethral discharge. Gram negative intracellular diplococci were present on urethral smear.

A presumptive diagnosis of gonococcal urethritis and epididymitis was made and he was treated with 2 g intramuscular spectinomycin and a two-week course of doxycy-

cline 100 mg bd. On further questioning he revealed that he had been in contact with a 17 year old girl. Although fellatio had occurred he denied vaginal penetration. The urethral culture grew *N meningitidis*. *Chlamydia trachomatis* was not detected by routine clinic testing (Chlamydiazyme, Abbott Laboratories). On review, after one week, no pathogens were detected on microscopy and culture. In spite of several requests the partner did not attend for screening.

N meningitidis more commonly colonises the throat than the genital tract. Isolation of it from the patient's urethral discharge is therefore compatible with his history of orogenital contact. It has previously been found in association with epididymitis.² In this case isolation of *N meningitidis* from the urethra offers a rational explanation for what initially appeared to be a case of "virgin gonorrhoea".

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References

- 1 Wilson APR, Wolff J, Atia W. Acute urethritis due to *Neisseria meningitidis* group A acquired by oro-genital contact: case report. *Genitourin Med* 1989;65:122-3.
- 2 Williams DC, Feldman YM, Corsaro MC. *Neisseria meningitidis*: Probably pathogen in two related cases of urethritis, epididymitis, and acute pelvic inflammatory disease. *JAMA* 1979;242:1653-4.

TO THE EDITOR, *Genitourinary Medicine*

Genitourinary medicine in Edinburgh

Sir,

The recent article in *Genitourinary Medicine* on sexually transmitted diseases in Britain: 1985-6¹ notes declining rates of syphilis and gonorrhoea (B1), and the increasing incidence of genital warts (C11) and non-specific genital infection (C4), as well as the substantial increase of "other conditions requiring treatment" (D2) and "those not requiring treatment" (D3). The corresponding figures for the genitourinary medicine service provided in Edinburgh, for a catchment population of approximately 844,000, from 1980-87 have been discussed in detail elsewhere² but addition of the 1988 figures shows a changing trend worthy of comment.

Overall, the total number of new diag-

Fig 1 Trends in specific diagnoses in homosexual men: 1980-1988.

noses has remained constant (7545 in 1980; 7795 in 1988), although the number of homosexual men attending the clinic more than doubled between 1980 and 1985 (from 331 to 719). Within the homosexual population (fig 1) the number of cases of gonorrhoea (both total and rectal) reached a peak in 1982, followed by a sharp decline, whereas the number of cases of genital warts plateaued between 1984-6, falling thereafter. Meanwhile, the numbers of D2 (which in this clinic includes testing for antibody to the Human Immunodeficiency Virus (HIV)), has progressively increased. However, in 1988 there has been an increase in the numbers of cases of gonorrhoea and genital warts.

In the total clinic population (fig 2) there has been a steady decline in gonorrhoea since 1980, and a decline in C4 since 1984, but the prevalence of genital warts has steadily increased until 1988 when there was a small drop in numbers. Meanwhile, as in the homosexuals, the number of D2 cases has increased steadily, again probably reflecting the increase in HIV testing (329 tests in 1986; 464 in 1988).

The fall in prevalence of specific infections in homosexuals (bacterial initially, followed by viral 4 to 5 years later) is consistent with altered sexual behaviour in response to the threat of HIV infection. However, it is disturbing that the trend is not maintained in 1988. Although these cases could represent a small reservoir of people who will never be prepared to modify their behaviour, it is to be hoped that they do not represent people who previously practised "safer sex" but

Fig 2 Trends in specific diagnoses in total clinic population: 1980-1988. B1-gonorrhoea, C4-Non-specific genital infection, C11-Genital warts, D2-Other conditions requiring treatment.

have now given up taking care. The trends noted in the homosexuals are reflected three years later in the total population, and it is reassuring to see a break in what appeared to be the relentlessly increasing numbers of cases of genital warts, although it should not be assumed on the figures of only one year that this represents a general trend.

It is important, if these data reflect modification of sexual behaviour in heterosexuals, as well as homosexuals, to continue with health education and promotion of "safer sex", in order to prevent reversal of the trend. Although the number of specific infections is decreasing, the total number of diagnoses is stable, with steadily increasing numbers of D2, which may reflect the public's increasing awareness of HIV and other problems relating to their sexuality. It is imperative for resource planning that these changing trends be recognised.

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References

- 1 PHLSSDC. Sexually transmitted diseases in Britain: 1985-6. *Genitourin Med* 1989;65:117-21.
- 2 Thompson C. Genitourinary Medicine in Edinburgh: 1980-1987. *Health Bull (Edin)* 1988;47:120-32.