

MEDICAL MEMORANDA

Isolation of Chlamydia from the Urethra of a Woman

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Isolates of Chlamydia were obtained from the urethra and cervix of a woman. She was examined because her husband was suffering from an ocular infection due to a Chlamydia—namely, TRIC agent—and had low-grade urethritis.

Case History

A woman aged 26 presented in May 1970 because her husband had been found to be suffering from keratoconjunctivitis due to TRIC agent. His ocular symptoms had started in early December 1969 about the time of his last admitted extramarital intercourse. She had had about five attacks of "burning" discomfort on micturition in the previous two years accompanied by increased frequency of micturition by day but not by night. The last attack had started five days before her attendance. Colposcopy showed a congested but otherwise normal cervical erosion and an inflamed urethral meatus. Strands of mucus were present on an otherwise normal rectal mucosa. There were 30 polymorphonuclear leucocytes per high-power field in a smear of the cervical mucus stained by Gram's method, 5 per high-power field in the urethral smear, and 30 per high-power field in the rectal smear; organisms resembling gonococci were not seen. Biopsy of the cervix showed infiltration with lymphocytes and plasma cells. Ocular and general examination showed no abnormality.

Materials for culture for Chlamydia were collected from the urethral meatus with a swab, from within the urethra with a curette (Dunlop *et al.*, 1965), and from the cervix and rectum by means of swabs and scrapers. Each specimen was cultured in irradiated McCoy cells by use of a simplified method (Darougar *et al.*, 1971). Isolates of Chlamydia were obtained from the urethral scrapings and from the cervical swab and scrapings but not from materials from the urethral meatus or the rectum or from the first part of the voided urine. In cell culture these isolates produced inclusions that stained with iodine, hence they were subgroup A Chlamydia (Gordon and Quan, 1965).

Only the isolate from the urethra was available for typing by a microimmunofluorescence test (Treharne *et al.*, 1971). It was type E TRIC agent. Microimmunofluorescence tests of the patient's serum showed the highest levels of antichlamydial antibody to be against type E TRIC agent (titre 1 in 32) and against lymphogranuloma venereum (L.G.V.) agent type II (titre 1 in 64); with serum from her husband the highest titre (1 in 128) was against B and E TRIC agent and against L.G.V. II and III. A complement-fixation test of the patient's serum for group anti-chlamydial antibody (L.G.V. C.F.T.) repeatedly gave negative results; with serum from her husband it gave partial fixation only.

Cultures for gonococci, serological tests for syphilis, and examination of smears and cultures of the vaginal secretions for

Trichomonas vaginalis and candida gave negative results. The centrifuged deposit of a midstream specimen of urine contained 3 leucocytes per 1/6 field; *Escherichia coli*, insensitive to tetracycline, was cultured at a concentration of 10^5 organisms per ml of urine. Profuse growths of *E. coli* were obtained from the vagina and from the urethral meatus.

Oxytetracycline 250 mg four times a day for 21 days was given for the chlamydial infection; the urinary symptoms subsided promptly and did not return. Follow-up examinations, including tests for Chlamydia, gave negative results. On two occasions a mid-stream specimen of urine was examined—on both occasions the deposit was normal and *E. coli* was cultured at a concentration of $<4.6 \times 10^4$ organisms per ml of urine.

Comment

It is possible that the presence of *E. coli* in the urine was due to contamination. The isolation of Chlamydia from scrapings from within the urethra suggests that the urethra was infected by that agent and not simply contaminated with material from the cervix. The isolate was type E TRIC agent and both husband and wife had antibodies in their sera to this type. In our experience when an adult presents with fresh ocular infection by TRIC agent that agent can usually be recovered from the genital tract. Although in this case the husband had low-grade urethritis tests of urethral material for Chlamydia gave negative results; however, some six months had elapsed from the onset of his ocular symptoms to the time of genital tests.

It has been implied that Chlamydia may be a cause of the urethral syndrome (*British Medical Journal*, 1968). Halberstaedter and Prowazek (1909) reported the presence of the inclusions, now known by their names, in material from the urethral meatus of the mother of a newborn baby suffering from non-gonococcal ophthalmia neonatorum. Subsequently it was generally believed that the inclusions in that case were contaminants from the cervix infected by Chlamydia.

Culture in irradiated McCoy cells provided a more sensitive method for isolation of Chlamydia than culture in yolk sac for materials from the conjunctiva, the urethra of the male, and the cervix of the female (Gordon *et al.*, 1969). By use of this method the agent has also been isolated from the rectum (Dunlop *et al.*, 1971) and now from the urethra of a woman.

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