Urethritis Caused by Neisseria meningitidis

JOHN J. KAROLUS,1* ARTHUR L. GANDELMAN,1 AND BETH A. NOLAN2

Connecticut State Department of Health Laboratory, Hartford, Connecticut 06101,1 and Danbury Hospital, Danbury, Connecticut 068102

A case report of urethritis caused by Neisseria meningitidis is described. Recent findings indicate this problem is increasing.

In 1942, Carpenter and Charles (1) reported seven cases of Neisseria meningitidis urethritis that occurred within a 3 month time period in Philadelphia. The circumstances of this incidence raised the possibility that there may be unique strains of meningococci with virulence similar to N. gonorrhoeae. At that time, the serogroups of N. meningitidis were not well defined. Since 1942, the literature has been void of urethritis cases caused by the meningococcus. In 1975, Faur et al. (2) reported an increased recovery of N. meningitidis from the genital areas over the 2 previous years. These data were attributed to changing sexual activities and social attitudes. Twenty-four individuals were found, seven of whom were males with positive findings of N. meningitidis in the urethra. All these males were asymptomatic. However, recent reports of meningococcal urethritis have appeared in isolated areas of the United States suggesting an increase of this problem. Miller et al. (4) reported a case of urethritis attributed to N. meningitidis serogroup X. Because of the patient’s allergy to penicillin, however, the treatment given was tetracycline. No Chlamydia or Ureaplasma cultures were taken. Felman (3) reported an incident of male urethritis and female pelvic inflammatory disease caused by N. meningitidis serogroup 29E. Penicillin therapy was employed in the treatment. The following case describes urethritis that was presumptively identified as N. gonorrhoeae, but confirmed as N. meningitidis urethritis.

This is a case report of a 29-year-old white male who presented at the Danbury Health Department Venereal Disease Clinic with what appeared to be typical gonorrhea-like urethral discharge. A presumptive diagnosis of gonorrhea was reported to the physician after the urethral stat smear disclosed a large number of polymorphonuclear leukocytes containing intracellular gram-negative diplococci. Treatment was instituted with a 4.8 × 106 U intramuscular injection of a penicillin procaine suspension of Crysticillin 600 AS. Before treatment, a urethral culture was inoculated onto Transgrow medium. After overnight incubation at 35°C, the culture was delivered, via a courier, to our laboratory. Oxidase-positive, gram-negative diplococci were isolated. This culture was negative by the fluorescent antibody confirmation procedure for N. gonorrhoeae. Proteose peptone no. 3 and beef extract base fermentation sugars (glucose, sucrose, lactose, maltose, fructose), as well as an o-nitrophenyl-β-D-galactopyranoside test, resulted in positive acid reactions in glucose and maltose and negative reactions for sucrose, lactose, fructose and o-nitrophenyl-β-D-galactopyranoside. Subsequent slide agglutination tests confirmed that the organism was N. meningitidis Slaterus Z. Laboratory procedures for the isolation of Chlamydia and Ureaplasma were not performed. The patient’s recovery was normal.

Before the laboratory culture report, this patient’s 29-year-old asymptomatic female contact was notified of the presumptive positive gonorrhea report of her partner. She subsequently visited her private physician, and a cervical culture was taken and sent to this laboratory. The culture report was negative for Neisseriaceae. Because these partners admitted to oral sex she was asked to attend the clinic for a cervical reculture as well as pharyngeal and nasal cultures. The nasal and cervical cultures were negative. The pharynx culture was found to contain N. meningitidis Slaterus Z.

Society’s generally permissive attitude as well as an increased variety of sexual practices such as oral-genital contact has led to increased reports of pharyngeal gonococcal infections and the rarer reports of meningococcal urethritis. This case illustrates the diagnostic pitfalls that may be encountered when tests are reported positive on a presumptive basis. This problem is unquestionably on the increase. The clinician should therefore be alerted to the possibility of N. meningitidis infections, particularly when oral-genital contact is suspected. The virulent properties of these strains of N. meningitidis should be studied further.

LITERATURE CITED
1. Carpenter, C. M., and R. Charles. 1942. Isolation of meningococcus from the genitourinary tract of seven...

