CHLAMYDIA TRACHOMATIS INFECTION IN YOUNG MEN WITH ACUTE EPIDIDYMITIS AND THEIR SEXUAL PARTNERS

Masanori Yamamoto, Hatsuki Hibi and Koji Miyake

From the Department of Urology, Nagoya University School of Medicine

Untreated infection of female partners by men with chlamydial epididymitis may have serious effects on the partners' fertility. To assess the need for detailed microbiological investigation, 32 patients, 35 years old or younger, with epididymitis and their sexual partners were examined. The patients underwent thorough evaluations, including chlamydia isolation, microscopy of urethral swab, bacterial culture, and chlamydia serologic testing. An infective cause was identified in 56% of the patients. The most common microorganism was Chlamydia trachomatis. This microorganism was identified from urethral swabs in 11 patients (34%). A total of 18 sexual partners were traced and investigated for chlamydia antigen by cervical swab, urinary bacterial culture, and chlamydia serologic testing. Of the 18 female sexual partners screened, 9 were partners of patients with chlamydial epididymitis; 78% of these women had the same infection. Young men with epididymitis, as well as their partners, should undergo full microbiological evaluations including Chlamydia trachomatis for adequate treatment of this infection.

(Acta Urol. Jpn. 39: 819-822, 1993)

Key words: Chlamydia trachomatis, Epididymitis, Sexual partner

INTRODUCTION

Acute epididymitis in men under 35 years of age who have no functional or anatomical abnormalities of the urinary system is usually caused by Chlamydia trachomatis (C. trachomatis) in the U.S.A.[1]. However, many affected patients have no history of a urethral discharge or clinical evidence of urethral inflammation. For these reasons, men with acute epididymitis are often treated inappropriately and treatment of the patient's sexual partner for chlamydial cervicitis is often not pursued. Recently, Robinson et al. have shown that the sexual partner of a large proportion of the men with acute epididymitis will have active chlamydial infections. They emphasize the importance of identifying and treating the sexual partners[2]. In Japan, chlamydial infection in the genitourinary tract has gradually increased[3-5]. Amano et al. reported that C. trachomatis was the predominant pathogen for acute epididymitis in the younger age group (younger than 35 years). However, available reports describing the incidence of chlamydial infection in patients under 35 years old with acute epididymitis and their sexual partners are lacking. We therefore studied those patients and sexual partners to assess the need for full microbiological scrutiny, including C. trachomatis.

PATIENTS AND METHODS

Thirty-two patients (age range 17~35 years) were included in this study. Epididymitis was a clinical diagnosis made on the basis of clinical history and the finding of a tender swollen epididymis on physical examination. Objective evidence of urethritis was diagnosed when there were more than 5 polymorphonuclear leukocytes per high powered field in the urethral swab specimen. The specimens obtained in the investigation of these patients and the examinations performed are as follows:

First void urine: Microscopy was performed to assess the numbers of white cells per high powered field and quantitative aerobic culture was accomplished.

Urethral swab: Fine, cotton-tipped swabs were inserted 3 to 4 cm into the urethra. Urethral swabs were Gram stained

and examined under a microscope. The antigen of C. trachomatis was detected by enzyme immunoassay (Chlamydiazyme™).

Chlamydia serology: Serum IgG and IgA antibodies was measured by the ELISA kit, HITAZYME (HITAZYME, Hitachi Chemical). Serum was considered seropositive at an absorbency of IgG>0.15 or IgA>0,2, respectively.

Female sexual partners: Eighteen sexual partners of 32 patients were traced and screened for C. trachomatis by swabbing the cervix with fine, cotton-tipped swabs which were transported in medium for culture. Peripheral blood was drawn to detect the circulation of the antibody of C. trachomatis.

RESULTS

A complaint of urethral discharge was noted in only 5 of the 32 patients (16%). However, objective evidence of urethritis was found in 18 of the 32 patients (56%). Causative microorganisms were identified in 18 patients. Among them C. trachomatis was isolated from the urethral swab in 11 patients (34%) and in a further 7 patients, the IgG or IgA antibody was detected in the serum. Other microorganisms isolated from the first void urine were E. coli (3), N. gonorrhoea (2), Klebsiella pneumoniae (2) Proteus mirabilis (1) and Enterobacter cloacae (1) (Table 1).

Of the 18 female sexual partners studied, 12 (67%) were asymptomatic. Six women had a vaginal discharge. Nine of the 18 women were partners of men with epididymitis accompanied by C. trachomatis infection and 7 of the 9 sexual partners (78%) also had evidence of chlamydial infection (chlamydia isolation, 5; chlamydia serology positive, 2) (Table 2).

Table 1. Organisms isolated from urethral swab or first void urine in the patients with acute epididymitis.

Organism	Nomber of patients (%)
C. trachomatis	9 (28)
C. trachomatis+E. coli	2 (6.3)
N. gonorrhoea	2 (6.3)
Klebsiella pneumoniae	2 (6.3)
E. coli	1 (3)
Proteus mirabilis	1 (3)
Enterobacter cloacae	1 (3)
No isolate	14 (44)
Total	32 (100)

Table 2. Isolation and serology test of chlamydia in the sexual partners of patients with chlamydial epididymitis.

Result	Number of partner of men with chlamydial epididymitis
Chlamydia isolation (5)	5
Chlamydia serology positive (2)	2
Chlamydia serology negative (11)	2

DISCUSSION

Infection should be considered to be the cause of epididymitis when active urinary tract infection, especially urethritis, has been found in association. Bacteriological studies in the U.S.A. have shown a very good correlation between the organisms isolated from aspirated fluid of acutely inflamed epididymis and those yielding active urethritis, urinary infection or prostatitis[6]. Epididymal aspiration can not be performed for routine use because this technique may destroy the fine tubular structure which maintains the delicate environment for sperm maturation. However, organisms which produce active urethritis, urinary tract infection or prostatitis can be regarded as the cause of epididymitis[2,7]. Therefore, bacteriological examination of first void urine, urethral swab and expressed prostatic secretion are performed to detect the causative organisms of acute epididymitis.

In the present study, we identified a microorganism from 56% of the subjects. The most common microorganism was C. trachomatis. This microorganism was isolated from 34% of the patients and a further 22% had serological evidence of exposure to C. trachomatis. The association between chlamydia and epididymitis was first reported by Heap[8]. The subsequent report[9] and its isolation from epididymal aspirate[4] or cultures of the epididymal tissues[10] confirmed its role as a causative microorganism. Our findings that the most remarkable feature of the infection

pattern is the high incidence of chlamydial infection in young men with acute epididymitis support those from the USA[6] and UK[7], where C. trachomatis is regarded as the most common etiology of epididymitis Amano et al. reported that C. trachomatis was the predominant pathogen for acute epididymitis in the younger age group[3] and their findings also support our observation.

Failure to consider chlamydia as the cause of epididymitis may result in the administration of inappropriate antibiotic therapy and overlooking of the need to screen the sexual partners of the patient[7]. We were able to trace 18 female sexual partners and 78% of these women had the same infection. This result is comparable with that reported in other series[7,11,12]. Chlamydial infection of the cervix elicits a spectrum of host responses. About two thirds of these women are asymptomatic. In those with symptoms, mucopurulent discharge and cervical ectopy are usually seen on speculum examination[13]. Because most infections are either asymptomatic or mildly symptomatic, persistent infection is common, and the prevalence of active chlamydial infection in sexually active populations is high, often in the range of 10% to 20%[13]. Untreated chlamydial infection often leads to further complications such as pelvic inflammatory disease, which increases the risk of infertility and ectopic pregnancy.

In conclusion, C. trachomatis is regarded as the major pathogen in acute epididymitis in patients 35 years old or younger. Young men with epididymitis, as well as their partners, should undergo a detailed microbiological investigation, including that for C. trachomatis, to prevent the possibility of subsequent infertility.

REFERENCES

1) Berger RE, Holmes KK, Mayo ME, et al.: The clinical use of epididymal aspiration cultures in the management of selected patients with epididymitis. J Urol **124**: 60-61, 1980
2) Robinson AJ, Grant JBF, Spencer RC, et al.. Acute epididymitis: why patient and consort must be investigated. Br J Urol **66**: 642-645, 1990
3) Amano M, Tanaka H, Takada M, et al.: Chlamydia trachomatis as a cause of acute epididymitis. Jpn J Urol **79**: 832-840, 1988
4) Deguchi T, Kanematsu E, Iwata H, et al.: Chlamydial epididymitis diagnosed by genetic detection of chlamydia trachomatis from epididymal aspirate by polymerase chain reaction. Kansenshougaku zasshi **66**: 991-994, 1992
5) Ito Y: The role of chlamydia trachomatis and ureaplasma urealyticum in patients with acute epididymitis. Kansenshougaku zasshi **63**: 293-304, 1989
6) Berger RE, Alexander ER, Monda GD, et al.. Chlamydia trachomatis as a cause of acute idiopathic epididymitis. N Engl J Med **298**: 301-304, 1978
7) Grant JBF, Costello CB, Sequeira PJL, et al.: The role of chlamydia trachomatis in epididymitis. Br J Urol **60**: 355-359, 1987
8) Heap G: Acute epididymitis attributable to chlamydial infection: preliminary report. Med J Aust **1**: 718-719, 1975
9) Pearson RC, Baumber CD, Mcghie D, et al.: The relevance of chlamydia trachomatis in acute epididymitis in uoung men. Br J Urol **62**: 72-75, 1988
10) Melekos MD and Asbach HW: The role of chlamydiae in epididymitis. Int Urol Nephrol **20**: 293-297, 1988
11) Oriel JD: Reeve P, Powis PA, et al.: Chlamydial infection: isolation of Chlamydia from patients with non-specific genital infection. Br J Vener Dis **48**: 429-436, 1972
12) Paavonen J, Kousa M, Saikku P, et al.. Examination of men with non-gonococcal urethritis and their sexual partners for C. trachomatis and Ureaplasma urealyticum. Sex Transm Dis **5**: 93-96, 1978
13) Brunham RC, Paavonen J, Stevens CE, et al.: Mucopurulent cervicitis: The ignored counterpart in women of urethritis in men. N Engl J Med **311**: 1-6, 1984

(Received on February 24, 1993
Accepted on May 24, 1993)

和文抄録

若年の精巣上体炎患者とその性的パートナーにおけるクラミジア感染症

名古屋大学医学部泌尿器科学教室（主任：三宅弘治教授）
山本　雅憲，日比　初紀，三宅　弘治

クラミジア感染による精巣上体炎患者の性的パートナーを未治療で放置すると，不妊につながる可能性がある．35歳以下の急性精巣上体炎患者32名および彼らの性的パートナー18名について詳細な細菌学的検討を行った．男性では，尿道 swab によるクラミジア抗原の検出と顕微鏡検査，尿培養，血清中クラミジア抗体の測定を行った．56%において病原微生物が同定され，最も多いものはクラミジアトラコマティスであり，11例に検出された．女性パートナーについては，子宮頸管粘膜上皮細胞を swab で擦過しクラミジア抗原を検出し，さらに尿培養，血清中クラミジア抗体の測定を行った．9例が，クラミジア感染による精巣上体炎患者のパートナーであり，彼らの78%は，クラミジアに感染していた．35歳以下の精巣上体炎患者とその性的パートナーに対しては，詳細な細菌学的検査とその結果に基づいた適切な治療を行うべきである．

（泌尿紀要 **39**：819-822，1993）