

ASYMPTOMATIC MALE AND FEMALE GONORRHOEA

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Abstract. Three hundred and ninety-nine patients attending the out-patient clinic of the Department of Dermatology and Venereology, Rigshospital, Copenhagen, for various venereal complaints were examined during a three-month trial. *Neisseria gonorrhoeae* was found in 75 female and 89 male patients. 43 women (57%) and 13 men (15%) were asymptomatic at the first visit. The duration of the asymptomatic period exceeded 3 weeks in 25 female (33%) and 7 male (8%) patients. The asymptomatic period in the male group varied from 15 to 90 days and from 4 to 180 days in the females. The majority of the patients with asymptomatic gonorrhoea had been exposed to a sexual contact with proven gonococcal infection, thus emphasizing the importance of contact investigation.

Key words: Gonorrhoea; Asymptomatic; Carrier; Reservoirs; Male; Female

The incidence of gonorrhoea has increased rapidly these last 7 or 8 years. In Denmark, excluding Greenland, the incidence of gonorrhoea was about 300 cases per 100 000 inhabitants in 1971, corresponding to a total of 15 000, as compared with fewer than 100 cases per 100 000 inhabitants or a total of 4 000 in 1957 (13). A similar rise has been observed in Sweden, in other Western European countries and in the USA (4, 9). Several factors influence the spread of gonorrhoea, including educational and social factors, use of contraceptive devices, and an increasingly mobile population (1, 2, 6, 7, 8).

That asymptomatic gonorrhoea in female patients has been of importance in the spread of gonorrhoea is a well known fact, whereas asymptomatic male gonorrhoea has generally been neglected until recent years.

In order to contribute to the evaluation and to review this problem, we performed a prospective study to estimate the number of asymptomatic male and female patients harbouring *N. gonorrhoeae* attending a Danish venereal disease clinic.

MATERIAL AND METHODS

Three hundred and ninety-nine consecutive patients, attending the outpatient V.D. clinic of the Department of Dermatology and Venereology, Rigshospital, Copenhagen, were studied during a three-month trial in 1972. Of these, 164 (41%) had gonorrhoea.

Each patient underwent a clinical venereological examination after the history had been obtained. Urethral and cervical smears were examined by direct microscopy for gonococci using methylene blue staining. Cultures for gonococci from urethral, cervical and rectal specimens were performed at the Neisseria Department of the State Serum Institute in Copenhagen. Throat cultures were not performed routinely. The specimens were transported in a modified Stuart medium on charcoal-impregnated swabs (19). The transportation time did not exceed 24 hours. The culture techniques were those standardized by the Neisseria Department and *N. gonorrhoeae* was identified by the fluorescent antibody technique (11, 12).

Patients with gonorrhoea were questioned as to the date of their last sexual contact, and their statements were independently confirmed by interrogation and examination of their contacts. The duration of the asymptomatic period was regarded as the number of days between the date of the last reported sexual contact and the date of examination. Male patients were considered asymptomatic if they had no urethral discharge and no complaints of dysuria or itching. Female patients were considered asymptomatic if they had no or unchanged discharge and no dysuria or itching.

Each patient with gonorrhoea was treated with one single injection of aqueous penicillin (5 mega-units). Half an hour earlier, an oral dose of 1 g probenecid was given. Female patients were checked at weekly intervals three times after treatment, while male patients were checked twice. Possible complaints of dysuria, discharge, and itching were registered at each control examination, as well as direct microscopy, and cultures for gonococci were performed.

RESULTS

Positive cultures and/or smears for gonococci were obtained in 75 female and 89 male patients. Cultures were positive in all cases apart from one male

Table I. Age distribution and prevalence of asymptomatic gonococcal infection in 89 male and 75 female patients with gonorrhoea

Age (years)	Males	Females
14	0 (0)	0 (0)
15-19	7 (0)	19 (10)
20-24	34 (5)	35 (19)
25-29	33 (6)	16 (9)
30-39	14 (2)	4 (4)
40-49	1 (0)	1 (1)
Total	89 (13)	75 (43)

The figures in parentheses indicate the numbers of patients with asymptomatic gonorrhoea.

patient with a positive smear only. At the first investigation 43 women (57%) and 13 men (15%) were asymptomatic (Table I). The asymptomatic period in the male group varied from 15 to 90 days, and from 4 to 180 days in the females (Table II). The length of the asymptomatic period could not be established in 2 female and 3 male patients. The duration of the asymptomatic period exceeded 3 weeks in 25 female and 7 male patients. Thus, of the total number of female patients with gonorrhoea, the asymptomatic period exceeded 3 weeks in 33% as compared with 8% in male patients with gonorrhoea.

In the patient group with asymptomatic gonorrhoea, the reasons for attending the venereal disease clinic are shown in Table III. The majority, 29 female and 9 male patients, had been exposed to sexual contact(s) with proven gonococcal infection. Condylomata acuminata was the reason for attending the clinic in 2 male patients, scabies in 1 male and 1 female patient and suspicion of syphilis in one

Table II. Duration of asymptomatic period in 13 male and 43 female patients with gonorrhoea

Asymptomatic period	Females	Males
<1 week	5	0
1-2 weeks	8	0
2-3 weeks	3	3
3-4 weeks	4	1
4-5 weeks	9	3
5-6 weeks	5	0
6-7 weeks	0	0
2-3 months	5	3
3-4 months	1	0
>4 months	1	0
Unknown duration	2	3

Table III. Reasons for attending the V.D. clinic in 13 male and 43 female patients with asymptomatic gonorrhoea

Reasons	Females	Males
Contacts with known gonococcal infection	29	9
Request for venereal examination	4	1
Routine examination during pregnancy	8	0
Other complaints (condylomata, scabies, syphilis)	2	3

female patient. In 8 women the diagnosis was made in connection with a routine examination during pregnancy.

Two and 3 weeks after treatment, respectively, the 13 male and 43 female patients remained asymptomatic, and gonococci were not demonstrated in any case during the follow-up period. Of the 108 patients in the symptomatic group, culture for gonococci was positive in one female patient only, 3 weeks after initial treatment. Reinfection, however, could not be excluded in this case.

DISCUSSION

Although the incidence of asymptomatic gonorrhoea, i.e. 57% in females and 15% in males, may not represent the true values in the population, our results support the view that the asymptomatic carrier may be a major reservoir of gonococcal infection. However, the patients attending a V.D. clinic represent a selected group, and this fact may account for the high incidence (57%) observed by us in female patients. Similar results have been reported in other V.D. clinics (9, 10). Contact investigation facilities, available at most venereological clinics, may enable these to call in contacts of patients with gonococcal infection more easily than can general practitioners, private clinics or departments without these facilities.

In a screening study performed in 1969 of a quarter of a million examinations including women of various ages and social groups, Pariser (14) attempted to establish the frequency of asymptomatic female gonorrhoea in the population. The frequency in these women varied from 32% in V.D. clinics to 1% in

certain industries. 22%, 6% and 2–4% were asymptomatic in jail, student health centres, and in private physicians' clinics, respectively.

In a prevalence survey on asymptomatic female gonorrhoea, Ellerman et al. (3) studied 4 768 women attending various centres for routine antenatal examination, cervical cancer check, general gynaecological examination and family planning. Gonococci were found in 6 of these women (0.1%). A similar low value (0.1%) was found by Quigley et al. (18) in a group of 1 023 female patients attending an obstetrics and gynaecology clinic.

The incidence of asymptomatic male gonorrhoea found by us, 15% (13 of 89 patients) at the first investigation and 8% (7 of 89 patients) with an asymptomatic period exceeding 3 weeks, corresponds to the findings reported from other V.D. clinics. Pariser (15, 16) found that 10% of males exposed to females with culture-positive gonorrhoea harboured organisms in their urethras without showing any evidence of gonorrhoea. If the incubation period was considered to be 7 days, 8.3% still remained asymptomatic. Portnoy et al. (17), in a study from another V.D. clinic, found the incidence of asymptomatic male gonorrhoea to be 43% (27 of 63 patients).

An extensive survey on asymptomatic male gonorrhoea has been performed by Handsfield et al. (5) elucidating the incidence in the population. They studied 3 097 men enlisted in the US army. Of these, 2 241 had recently returned from Vietnam. In 2 628 men considered at risk, *Neisseria gonorrhoeae* was recovered from the urethras of 59 (2.2%), 40 (1.5%) of whom denied dysuria or urethral discharge. On examination, 15 of these 40 asymptomatic men were noted to have scant expressible urethral exudate. The remaining 25 men (1.0%) had no evidence of urethritis.

The high incidence of asymptomatic gonorrhoea in the male and, particularly, in the female patients attending V.D. clinics emphasizes the importance of the role played by this reservoir of infection in the continued spread of gonorrhoea and should stimulate the efforts of contact investigation.

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