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Prostatitis after urethritis in Singapore

R. N. T. THIN
Venereology Department, St. Bartholomew's Hospital, London

Prostatitis is usually more common after non-gonococcal urethritis (NGU) than after gonococcal urethritis (King, 1964; *British Medical Journal*, 1972; Schofield, 1972). Observations made during the early part of a tour of duty in 1970 as Venereologist at the British Military Hospital in Singapore suggested that the reverse might be the case there. It was, therefore, decided to examine the prostatic fluid at the end of 3 months' observation after treating British soldiers with urethritis acquired in Singapore. The object of this paper is to report the results obtained.

Methods

The diagnosis of gonorrhoea was based on the results of Gram-stained smears and/or cultures (Thin, 1973); treatment for gonorrhoea was probenecid 1 g. by mouth followed, after 15 to 30 minutes, by benzyl penicillin 5 m.u. intramuscularly. NGU was diagnosed when the Gram-stained smear showed no *Trichomonas vaginalis*, and culture was negative for *Neisseria gonorrhoeae*; treatment was tetracycline 250 mg. four times daily for 5 days.

Patients were seen at intervals until 3 months after treatment. They were encouraged to attend before passing urine in the morning and half of them did so; the remainder had held their urine for at least 4 hours. At the last visit, if there was no clinical evidence of a urethral discharge, the urine was clear when examined by the two-glass test, and the patient denied sexual intercourse during the preceding 7 days, the prostate was examined. If there was no tenderness on palpation the prostate was carefully massaged and the expressed secretion examined by wet smear, Gram-stained smear, and in some by culture. The wet smear preparation was made from the second drop of prostatic secretion and immediately examined using a brightfield condenser and × 40 objective. Smears containing clumps of leucocytes and/or ten or more cells per field in at least five fields were regarded as abnormal (Pelouze, 1939; Blacklock, 1969; Meares, 1973), indicating the presence of prostatitis. At least thirty fields were examined before a specimen was regarded as normal.

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Treatment was with erythromycin 250 mg. four times daily for 4 weeks and/or prostatic massage weekly for 4 weeks, but military duties prevented some patients from attending regularly for this.

A group of patients with general medical conditions were also studied using the same methods. All were examined after holding their urine overnight.

In view of the prostatic fluid findings among the patients treated for urethritis, data based on the same criteria were extracted retrospectively from the notes of patients seen personally who had acquired urethritis in Britain. The patients were soldiers attending the army clinic at the Royal Herbert Hospital, London. No details of defaulters from observation were available and treatment for gonorrhoea was Triplopen *penicillin 2·5 m.u. intramuscularly. In all other respects the management of these patients was the same. This group is not comparable with the patients studied in Singapore, but provides an indication of the incidence of post-urethritis prostatitis among soldiers in Britain.

Results

338 British soldiers treated for urethritis in Singapore entered the study but, for the reasons shown in Table I, only 95 patients treated for gonorrhoea, 66 treated for NGU, and fifteen treated for gonorrhoea and post-gonococcal urethritis (PGU), completed the full investigations.

*Triplopen 2.5 m.u. = benethamine penicillin 1 m.u., procaine penicillin 0.5 m.u., and sodium penicillin 1 m.u.

TABLE I *Details of patients who entered the study*

Original diagnosis	*Gonorrhoea*	*NGU*	*Gonorrhoea + PGU*
Failed to complete observation	57	20	0
Recurrence of urethritis within 3 mths	36	20	5
Completed observation but prostatic secretion not obtained	13	11	0
No. of patients studied	95	66	15
Total	201	117	20

NGU = non-gonococcal urethritis
PGU = post-gonococcal urethritis

Prostatitis was diagnosed in 35 (36·8 per cent.) men treated for gonorrhoea, in nine (13·6 per cent.) treated for NGU, and in five (33·3 per cent.) treated for gonorrhoea plus post-gonococcal urethritis (Table II). Prostatitis was, therefore, nearly three times as common after gonorrhoea as after NGU. In 47 of the 49 patients with prostatitis, prostatic massage was repeated after 1 or 2 weeks and in all cases abnormal numbers of pus cells were still present.

TABLE II *Incidence of prostatitis*

Original diagnosis	*No. of patients studied*	*Prostatitis present*	
		No.	*Per cent.*
Gonorrhoea	95	35	36·8
NGU	66	9	13·6
Gonorrhoea plus PGU	15	5	33·3

None of these patients had urinary symptoms but nine had perineal or referred pain which disappeared with treatment. No correlation was found between palpable abnormalities of the prostate and the presence of excess pus.

The results of the cultures of prostatic secretion are shown in Table III. The most commonly isolated organism was *Staphylococcus albus* which was present in half the cases. *Escherichia coli* was isolated from only one case. The different organisms were evenly distributed between the two groups of cases.

TABLE III *Bacteriological findings in prostatic secretion*

Bacterium	*No. of Cases*
Staphylococcus albus	24
Micrococci	6
Streptococcus viridans	5
Staphylococcus aureus	3
β– *haemolytic streptococcus*	1
Escherichia coli	1
No growth	9

The results of treatment by each method, namely erythromycin alone, erythromycin plus prostatic massage, or prostatic massage alone, cannot be compared satisfactorily because some patients attended irregularly, but there were no obvious differences between the results obtained with these different regimes.

Among patients with general medical conditions, 21 had no evidence of urethritis and of these one had prostatitis.

Results of prostatic investigations among 93 soldiers who had acquired urethritis in Britain are shown in Table IV. Prostatitis was found in six (16·7 per cent.) patients treated for gonorrhoea, seventeen (35·4 per cent.) treated for NGU, and three (33·3 per cent.) treated for gonorrhoea plus post-gonococcal urethritis.

TABLE IV *Prostatitis among patients treated in Britain*

Original diagnosis	*No. of patients studied*	*Prostatitis present*	
		No.	*Per cent.*
Gonorrhoea	36	6	16·7
NGU	48	17	35·4
Gonorrhoea plu PGU	9	3	33·3

Discussion

Among patients studied in Singapore, prostatitis was found nearly three times more often after gonorrhoea than after NGU. On the other hand, in Britain, prostatitis was diagnosed more commonly after NGU and this is the usual finding (*British Medical Journal*, 1972). It has been found that a second prostatic massage shortly after the first may show a completely different cell count (O'Shaughnessy, Parrino, and White, 1956). It is interesting that, in all cases in which massage was repeated after 1 or 2 weeks, abnormal numbers of leucocytes were still present. A much lower incidence of prostatitis was found among the patients with general medical conditions and this agrees with the findings among healthy volunteers studied by Blacklock (1969). However, others (Oates, 1969) have reported a much higher incidence in asymptomatic men.

Cultures for *Chlamydia*, mycoplasmas, and viruses, and quantitative bacteriological studies (Meares and Stamey, 1968) were not carried out. In the absence of such investigations it is unrewarding to speculate on possible causes of the high incidence of prostatitis after gonorrhoea compared with that after NGU. It suggests that the prostate may be affected differently or that NGU has a different aetiology in Singapore. It appears that a further study using fuller bacteriological techniques would be worthwhile.

Summary

Excess leucocytes in expressed prostatic secretion indicate the presence of prostatitis. Such prostatitis is usually more common after non-gonococcal urethritis than after gonorrhoea. However, in a group of British soldiers studied in Singapore, prostatitis was much more common after gonorrhoea. The study was limited by the methods available, but it is suggested that a similar investigation using fuller bacteriological techniques would be worthwhile.

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Prostatite après urétrite à Singapour

SOMMAIRE

La présence de leucocytes en excès dans la sécrétion obtenue par massage prostatique indique le présence d'une prostatite. Habituellement, une telle prostatite est plus commune après une urétrite non gonococcique qu'après une gonococcie. Pourtant, dans un groupe de soldats britanniques étudié à Singapour, la prostatite fut beaucoup plus fréquente après une gonococcie. L'étude fut limitée du fait des méthodes utilisables mais on pense qu'une recherche semblable faisant appel à des techniques bactériologiques plus complètes auraient de la valeur.