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Gonorrhœa in the Army

BY

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THE TREATMENT OF GONORRHŒA IN THE ARMY.

By Major H. C. FRENCH.
Royal Army Medical Corps.

It not infrequently happens that men are admitted to hospital a month or two after arrival at their station either with a relapse of gonorrhœa, or with intractable gonorrhœal complications, such as stricture, epididymitis, and orchitis; and sometimes with arthritis, or eye affections, the result of "systemic" infection. Gonorrhœa is a potent cause of anæmia and debility, and when excessive smoking and beer-drinking is superadded, of that typical affection of soldiers, "disordered action of the heart." Endocarditis may occur in the course of gonorrhœa, in conjunction usually with arthritis, or a generalised septicæmia. If a man, in the first instance, is adequately treated in hospital for gonorrhœa, these complications are less likely to occur, and invaliding is correspondingly reduced. Many soldiers, however, go about with gleet for months, and only report sick, either when complications such as arthritis occur, or when awarded punishment for military offences, when they often make use of it after award to evade sentence of court martial, and they commonly succeed in their object. Treatment in hospital should continue for at least six weeks, whether the man says the discharge has stopped or not, unless microscopic examination of the urine shows an absence of the gonococcus, which is in the highest degree unlikely within the above-mentioned period. There are four advantages in the above minimum time-limit procedure. First, from the exact and recorded observation of many hundreds of cases, cessation of urethral discharge was commonly effected. Secondly, relapse in average cases more rarely occurred; this quite apart from the fact whether injection or irrigation was or was not used in freshly contracted cases. Thirdly, the occurrence of the previously mentioned protracted complications are lessened, or can be more promptly and adequately dealt with, and so the number of re-admissions are reduced. This ultimately reduces time in hospital, minimises loss of efficiency, and reduces invaliding. Fourthly, the "disciplinary" restriction, if concealment is frustrated, which it can be by properly directed effort, is beneficial in two ways. Many men, unless due for the Army Reserve, &c., wish to get out of hospital to avoid loss of pay,

hospital fatigues, &c. They are consequently not so liable to expose themselves again. The hospital fatigues, however, in large military stations, should not be so exclusively done by venereal patients. Fatigues such as scrubbing floors, or other heavy work, cause complications, buboes, swollen testicles, &c., and tend to promote concealment of disease before admission. If cured, men cannot later make use of a gonorrhœa to evade punishment. A gleet, or chancre, is a valuable asset to a soldier desirous of evading the result of irregularities, viz., punishment. Gonorrhœa cases should not be treated in syphilis wards, nor syphilis in gonorrhœa wards. The following tabulated rules form a rough general guide, reduce clerical labour, and simplify ward work in dealing with large numbers of gonorrhœa cases with a small staff. A copy can be posted in a conspicuous place in the ward.

(1) All cases on admission will have two No. 9 pills, and later mist. alba, 1½ ozs., every morning for seven days, or until the treatment is changed by the medical officer in the book.

(2) Mist. alkaline, 1 oz., t.d.s., for ten days, or until the treatment is changed by the medical officer in the book. If there is much scalding, or chordee, the medicine can be given every four hours, and a hot bath twice daily.

(3) No injection, or irrigation, until ordered in the book by the medical officer.

(4) Bed, except for necessary purposes, until marked "up" by medical officer. This includes absolute exemption from hospital fatigues, which is often not the case at present.

(5) A piece of clean lint, or cotton wool, soaked in 1 in 2,000 perchloride of mercury, will invariably be kept on the penis between the glans and foreskin, changed frequently and placed in a special basin.

(6) The patient must be careful that he does not touch his eyes with the discharge, or he may lose his sight.

(7) Under no circumstances will a patient with pain in the testicles, or groin, or with swollen testicles, inject or be irrigated, except with the medical officer's permission. The orderly carrying out irrigations should be so warned.

(8) Cases of *relapse* of gonorrhœa re-admitted to hospital will be recorded as such on their diet sheets in red ink, with the date of their previous stay in hospital, and enquiry elicited as to "the cause."

(9) Cases of gonorrhœal complications, such as epididymo-orchitis, arthritis, stricture, &c., should be entered in red ink on

the diet sheet, and on a "gonorrhœal case-sheet," which is filed for reference. The accurate collection of such data is invaluable. Cases of epididymo-orchitis, on an average, remain eight to twelve weeks in hospital.

(10) Two hip baths are kept in the ward for "acute" cases of gonorrhœa, or cases with swollen testicles, specially ordered hot baths. The bath daily used by "convalescing" gonorrhœal cases will be indicated in the bathroom by a notice board.

(11) The wardmaster, or orderly, in the ward, will read the above orders to each patient on admission, and will report the next day to the medical officer in charge of the ward that this has been done.

The above rules are framed to guard against initial neglect in the acute stage by the patients, or orderly, since inattention to minutiæ, or neglect, is ordinarily a common cause of epididymo-orchitis, &c., and of a prolonged stay in hospital.

I consider that cases of gonorrhœa in hospital should be marked "bed" during the "acute" stage, that is, about seven to twelve days. Milk or "farinaceous" diet, with barley water, porridge, and cocoa as extras. During this period, free saline purgatives are administered every morning, and mist. alkaline every four hours. No injection. This dietetic and sedative line of treatment usually prevents chordee and pain, and better guards against "systemic" infections, such as myalgia, septicæmia, and gonorrhœal rheumatism with or without effusion, and protects against intractable complications, such as prostatitis and epididymo-orchitis, due to backward extension. After ten days, on an average, under this treatment, the formerly creamy, yellow, purulent discharge becomes thinner, whiter, and muco-purulent. The man may then be marked "up" and his diet changed to convalescent. Alcohol, spices, and much meat prolong the duration of the discharge.

On admission to hospital, after microscopical examination of the purulent discharge, the urine of each man should be subjected to Thompson's two-glass test bi-weekly, or daily in some "acute" cases, and the diagnosis of anterior or posterior urethritis, as the case may be, is made from this rough clinical test in order to select which kind of irrigation is to be made. The "first" morning urine is passed, half into one glass, half into the second. The glasses are labelled 1 and 2. The urine is passed in the presence of an orderly, and can be kept, if necessary, in the ward annexe, to stop humbug, such as the substitution by the patient of a normal urine. If the urine in No. 1 glass (*i.e.*, the first passed) is "cloudy," and that in

No. 2 glass is "clear," the case is one of anterior urethritis, the diet sheet is thus marked, and irrigations for *anterior* urethritis are commenced. If the urine in No. 1 glass is clear and that in No. 2 is cloudy, or both are cloudy, the case is one of posterior urethritis, the diet sheet is marked "posterior," and irrigations for posterior urethritis are commenced *as soon as acute symptoms have subsided.* Should cystitis or epididymo-orchitis threaten, or occur, injections or irrigations should entirely cease. Sub-acute cystitis, or prostatitis, may be recognised by the "ropy" appearance of the urine, with large deposit, or by blood in urine (smoky) if acute, and in both glasses if acute, or in the second glass, when sub-acute. Pain over the region of the bladder is usually complained of, and is relieved by fomentations every two hours.

"*Anterior*" irrigation commences about the fourth to sixth day, unless orchitis, cystitis, or other contra-indication is present. Anterior irrigations, one pint at a time, can be employed, two, three, or more times daily—but posterior (which enter the bladder) are naturally much more severe, should be more cautiously employed, and never more than once a day, preferably in the morning. An "anterior" irrigation (half a pint) to wash out the anterior urethra, is first made before giving a posterior irrigation (half a pint). It is useful in posterior cases to give a second "anterior" irrigation in the afternoon, and the last thing at night. In selected cases a man could carefully syringe in the intervals, or be more frequently irrigated.

The irrigations are performed by a properly trained orderly under the direction of an officer. Kolman's dilator may be used in chronic cases with irrigations. This instrument, by expanding, dilates and stretches the mucous crypts, and thus permits the "free" gonococci and pus organisms to be washed out of these crypts.

A solution of permanganate of potass., 2 grs. to 1 oz., and 1 oz. of this to every pint of luke-warm water (90° to 95° F.), is used for irrigation. The strength, therefore, is gr. $\frac{1}{10}$ to 1 oz. The strength can be later cautiously increased. Silver salts are apt to cause cystitis, and should not, I consider, be used until the "gleet" stage in the third or later weeks, but the advantages of silver salts are theoretical rather than practical. My predecessor at Woolwich (Major Eckersley), abandoned them, I understand, owing to the frequency of orchitis and cystitis; I saw them resumed, and later abandoned. They should, I think, be limited to "anterior" irrigations or injections in the later stages in

experienced hands. Gonorrhœa, like syphilis, has a natural tendency to resolve. Silver salts are apt to be credited with the success primarily due to nature, *i.e.*, phagocytosis, as later explained. About 8 pints of the irrigating solution is placed in a large "measured" glass receptacle, which is hung on the wall about 8 feet from the ground, the solution coming through the india-rubber tube affixed to the bottom of this glass receptable.

The distal end of the rubber tubing is fixed to a "double channel" irrigation glass nozzle. The orderly sits on a stool opposite to the patient, and inserts the point of the glass nozzle just inside the urethra. Over the penis is a mackintosh apron to direct the fluid into a bucket. The orderly should wear india-rubber gloves. The glass nozzle of the irrigating apparatus is sterilised before use, and should be disinfected by dipping in 1 in 20 carbolic lotion between each case.

After *posterior* irrigation the patient empties his bladder into a glass and shows it. It can be noticed, that as the case improves the colour of the permanganate of potassium solution is retained.

The apparatus is obtainable at the Army Medical Stores, Woolwich, viz.: Large urine glasses, two per man; large glass measured pints, double channel glass nozzle, india-rubber tubing. Mackintosh for aprons from Barrack Stores.

After the urethral discharge has ceased, the urine, as evidenced in the urine glasses, gradually becomes clear, and threads, in average cases, are no longer visible after five to six weeks. The man is then placed on beer for several days, and if the urine still remains clear he is discharged hospital when ten or fourteen days free of discharge, if the gonococcus is not demonstrated by the microscope, but never under six weeks if admitted with "acute" gonorrhœa. This time limit better guards against later relapse, and further medical inefficiency from irregular habits outside.

The only really scientific treatment of the "gleet" stage in chronic cases which curtails it, is to illuminate the urethra by means of an electric urethroscope, any time after the twentieth day of disease, if the discharge is gleety, or in chronic cases, and apply local applications of argent nit. to the "granular patch," present at some time in every case of freshly contracted gonorrhœa. This patch usually causes the persistence of the glairy gleet, or may give rise to stricture. By means of this instrument, with practice, it is quite feasible to detect the presence of the exquisitely tender "granular patch." If the urethra is unduly sensitive at any one spot on the passage of the instrument, one is then quite certain that

the gonorrhœa is not cured. In the case of a "normal" urethra, there is no pain or discomfort on the passage of the instrument. In a "diseased" urethra the granular patch is usually situated within 4 inches from the meatus urinarius and on the floor of the urethra. In cases of prolonged gleet a more careful examination should be made for stricture, or for enlarged prostate. If the latter, massage of the prostate may be tried, as in America. Before a case of gonorrhœa is discharged from a military hospital a careful examination of the meatus urinarius should invariably be made. If the meatus is red and glazed, discharge is present, in despite of the man's assertion to the contrary, with a view to getting out of hospital and so avoiding loss of pay. Swab the urethra with a piece of cotton wool and examine for gonorrhœa, or examine the urine for the gonococcus, if the man states that there is not any discharge. The groin should be examined for tenderness, or possible glandular enlargement, and the testicles and epididymis for tenderness, or possible epididymo-orchitis. The urethral mucous membrane should be closely examined by the urethroscope to see if the "granular patch" on the floor has resolved. Failing the possession of this invaluable instrument, a black vulcanite urethral canula, with sharp edge and solid interior plug, which can be withdrawn, is supplied by the "Icthyol Company," High Holborn, London. It is a simple and excellent instrument for localising the "granular patch" and topically treating it. If the man feels any pain or tenderness on the passage of the anterior sharp edge of this instrument, a "granular patch" must exist on the floor of the urethra, and, *ipso facto*, a gleety gonorrhœal discharge must be present. Cases should be inspected once a week for a month after discharge from hospital. The urine can be centrifuged and microscopic examination made for gonococcus before declaring the case cured. Finger, of Vienna, also considers that six weeks is the usual period of gonorrhœal discharge, and that injections do not curtail this period. When relapse occurs the case should be at once sent for adequate treatment to guard against "complications," debilitating anæmia, and the infection of others. Relapse, in carelessly-treated gonorrhœa, may nearly double the admission ratio of gonorrhœa cases. An admission and discharge book kept in the ward, or a gonorrhœal case-sheet, when properly kept up, gives very material assistance to the medical officer in charge of the hospital in compiling his annual report on venereal diseases. The "causation" of intractable complications, such as bubo, in the case of gonorrhœa complicated by balanitis, or by venereal sores, and of

epididymo-orchitis, bubo, and gonorrhœal rheumatism in the case of gonorrhœa, are recorded in it. Cases of gonorrhœa complicated by the occurrence of arthritis, epididymo-orchitis, or anæmia, should, on discharge from hospital, be kept under special observation for endocarditis. A notification should be sent to the medical officer in charge of the barracks. The above complications commonly indicate a constitutional or severe infection, and are usually associated with fever at the onset, and later, with severe and often prolonged debility and anæmia, which predispose to other diseases. This, in many instances, more especially at foreign stations, permanently incapacitates the men, and renders later invaliding necessary. Further, when it is considered that orchitis is the commonest cause of "sterility" in the male, that iritis may cause permanent damage to the eye, and that gonorrhœal arthritis often leaves permanently stiff or useless joints, the importance of attaining accurate knowledge of these complications cannot be under-estimated. Permanent adhesions usually form when arthritis is inadequately treated. The prognosis, however, is good, if the case is seen early and well treated.

Quite apart from the humanitarian aspect, it would appear that the interests of discipline are better maintained in the case of prisoners suffering from venereal diseases, if a regulation directed that all such cases in the first instance are to be invariably admitted to hospital and not first sent to prison. Such time as is thereby lost to be made up in prison on recovery. This procedure would, it is believed, absolutely prevent concealment, commonly practised by soldiers with the ulterior view of evading awards of courts-martial, and discipline would be more adequately safeguarded. Hard labour and physical exercises will rapidly induce epididymo-orchitis, and prison life and food will markedly accentuate the debility and severe anæmia that ordinarily occurs in the course of this disease.

Remarks.—I do not concur in the view put forward by Major Pollock, R.A.M.C.,[1] that irrigation in the initial acute stage of gonorrhœa prevents the posterior urethra from becoming infected. I consider that chemical irrigation or injections, in the early stage, so far from preventing, are very liable indeed to cause infection of the posterior urethra, and in the very *acute* stage are probably quite the most common cause of undesirable complications, such as

[1] "Treatment of Venereal Diseases in the Army" (Advisory Board Final Report, p. 15).

epididymo-orchitis, cystitis, urethral fever, and "systemic" infection. Notes could be given of very many cases. Thompson's two glass test shows that subsequent to irrigation the posterior urethra has become involved, whereas it may not have been so before. Rest in bed, milk diet, hot baths, hot compresses, sedative alkaline mixtures, free saline purgation, and an absence of hospital fatigues, are much more reliable remedies in preventing these intractable complications, and this view is, I believe, supported by the experience of the profession at large and conservative medical opinion. I have extensively tried both plans amongst some 5,000 in-patients, but in the initial "acute" stage have long abandoned chemical irrigations and injections in favour of more conservative methods, and with the best results. I consider, especially in dealing with ignorant patients, that it is a retrograde step in our knowledge to unduly interfere with an intensely inflamed urethra in the very early stages, either by instrumentation, or chemical injections or irrigations, which often act like instrumentation, and give rise to urethral fever and its adverse sequelæ.

The posterior urethra is not uncommonly affected at the time a patient reports sick, and the not infrequent presence of epididymo-orchitis at the time of admission to hospital, which is usually due to delay in reporting sick—*i.e.*, concealment, or injection at the local chemist's—should preclude routine irrigations or injections until the case is more closely studied. Hence the importance of a few general instructions as given in the beginning of this article. After epididmyo-orchitis, or cystitis, has been present, if chemical injections or irrigations, are used, severe relapses of the former condition very often ensue—and these conditions commonly mean a stay in hospital for three months before the man is fit for military duty, whereas, if complications do not ensue or persist, a man should be quite fit to attend as an out-patient confined to barracks after five weeks in average cases. The fact, moreover, of the testicle swelling as a result of too early or vigorous irrigation in hospital, is apt to discredit the treatment in the eyes of the patient, a desideratum of the first importance in the Army, where soldiers are only too ready to resort to quacks and chemists. Discredit is thus unfairly thrown on irrigation, which, with limitations, is an advance on the injection treatment.

I have tried, and have seen used, all the ordinary chemical injections and irrigations, and favour, once the acute symptoms have abated, sterile warm water to commence with, followed by potass. permang., in dilute solution, $\frac{1}{10}$ gr. to 1 oz., as an irrigation,

and ½ a drachm to 2 pints of water as an injection, and the strength increased in the gleet stage. The reason why injections and irrigations fail to more appreciably curtail the total duration of a gonorrhœal discharge, even amongst in-patients, is presumably due to the pathological fact that the gonococci, besides gaining an entrance into the leucocytes as a result of phagocytosis, also gain an entry into the urethral sub-mucous connective *tissue*, and give rise later in the gleet stage to the "granular patch." The superficial mucous crypts in the urethral lining membrane no doubt also lodge the gonococcus; but the persistence of gleety discharge is probably due to the minute though definite *infiltration* (granular patch) in the sub-mucous coat, which only slowly proliferates and resolves, or later in rare instances, in neglected chronic cases, forms a thickening or stricture. Irrigations, injections and diuresis, in muco-purulent stages, wash away the accessory pyogenic organisms, pus corpuscles, and some of the free gonococci, but could not remove gonococci imbedded in the tissues until sufficient time had elapsed for exfoliation of the surface epithelium, which occurs naturally during the course of resolution of the localised inflammation. This observation is further borne out by the clinical fact that cases of stricture are commonly found in association with a prolonged urethral discharge. There is also a resilient slight enlargement of the inguinal lymphatic glands in many cases of gonorrhœa, and the leucocytes containing gonococci can thus get into the blood stream and give rise to constitutional symptoms, such as anæmia, arthritis, fever, or generalised septicæmia. Hence the scientific treatment of the unduly prolonged "gleet" stage which guards against complications is that so ably described by Mr. Burghard[1] by means of the electric urethroscope, and local applications to the "granular patch" of a strong solution of argent nitratis (grs. xx. to grs. xxx. to the oz.). A large number of gonorrhœa cases, of course, naturally get well after five to seven weeks without any local treatment. This is what we would expect of a localised inflammatory process—provided we prevent a generalised septicæmia occurring—by rest, dietary, diuresis and sedative measures in the initial acute stage, and careful irrigation or injection later.

Carefully safeguarded irrigations performed by a trained person are necessarily more efficacious in the "muco-purulent and gleet stages" (*i.e.*, later stages), than routine injection practised by an

[1] King's College Reports, vol. i., 1893, p. 115.

ignorant patient. After the third week, the "frequency," time, and manner of irrigation or injection, and not the chemical nature of these, is no doubt one dominant factor in curtailing the discharge in average cases if the phagocytic power is normal. I have pursued investigations in India, extending over some hundreds of cases, where no injection or irrigation, was ever used. I was astonished at the infrequency of complications, and the ordinary duration of urethral discharge was five to six weeks.

I believe that at the Guards' Hospital, London, a similar series of investigations was conducted ten years ago by Colonel Fenn, R.A.M.C., at the instance of Mr. G. Lenthal Cheatle, and the latter informed me that the duration of urethral discharge averaged about five weeks.

Of course one is met with the admitted fact that there are prolonged cases of gleet that last much longer, and that threads may be seen, or gonococci may be recovered from the urine, after three months, but in some cases only pus corpuscles and not gonococci are found. I cannot admit that irrigation, even for several months, does much good in many of these prolonged cases, although it has been advocated as the universal panacea. It is in this class of case, or in the case of men who frequently contract gonorrhœa, that stricture not uncommonly results. There is often a history of several previous attacks of gonorrhœa. In some of these cases the urethral discharge persists for fourteen weeks or longer, in despite of most carefully supervised irrigation (including silver salts), and in-patient hospital treatment. Naturally, when a posterior urethritis, or epididymitis, has occurred, the average duration is ordinarily much longer (eight to twelve weeks on an average) than in uncomplicated anterior cases (five to seven weeks), so that it behoves us to prevent, if possible, the occurrence of these conditions. I consider this is best done by ensuring that the man reports sick early, before his testicles swell, and that he is first treated in hospital. If a soldier with gonorrhœa only reports sick when his testicle has swollen, and he is consequently unable to walk, he ought to be crimed with concealment. The disease has probably been in existence seven to ten days, and the chemist has failed to cure him. I have used, and have seen extensively used, urotropine and salol as urinary disinfectants, but, like silver salts, the advantages in practice are not so obvious as well advertised; and barley water, by increasing diuresis, effects excellent results. Tonics, particularly quinine and iron, improve the anæmia ordinarily present in the later phase of gonorrhœa, and, *ipso facto*, may cur-

tail the duration of gonorrhœal discharge by increasing the phagocytic power of the individual. Recently, antistreptococcus serum is advocated for gonorrhœa. I have not as yet had any experience of this line of treatment. The injection is made *per rectum*. Concealment of disease results from indiscriminate punishment, but disciplinary efforts, if properly directed, can easily prevent the concealment. If treated as "out-patients" after five or six weeks in hospital, cases of gonorrhœa must be confined to barracks, and excused the canteen to stop drinking under Army Order 158 of 1903. This tends to prevent the infection of women in the neighbourhood, and the consequent re-infection of their comrades in the garrison. In civil life, all cases of gonorrhœa are treated as out-patients.

The prolonged and worst cases of gonorrhœa, like syphilis, ordinarily result from initial neglect, concealment, and treatment by the prescribing chemist and civil medical practitioners. The latter should be obliged to notify cases of venereal disease to the military authorities, as on the Continent, since soldiers can only be temporarily—and consequently inadequately—treated under such circumstances; and the expense to the public is considerably and quite unnecessarily increased by reason of a more prolonged stay in hospital due to initial concealment, and easily preventable factors. There is not at present any "systematised" procedure in dealing with concealment in the Army. Reports are only made in a small percentage of cases, and the punishments vary. If concealment reports are to be regularly made by medical officers, the soldier should be more regularly warned in barracks by his commanding officer, and when one case of concealment occurs in a company, every man in that company should be medically inspected. No punishment should be awarded, except for concealment of venereal disease. Non-commissioned officers should attend, or be seen separately from the men, and treated, if possible, in separate wards.