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Reprinted from the New York Medical Journal for February 15, 1913.

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ACUTE GONOCOCCAL URETHRITIS IN THE MALE.*

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The medical profession has taken about a generation to correct the former complacent vagary as to the unimportance of the nature of gonococcal urethritis, wrongly called gonorrhea, because it is not, as the Greeks supposed, a loss of the sexual element in either sex. The disease is no longer regarded as a simple, severe catarrh of the mucous membrane, with an early mucopurulent and later purulent discharge, but as a vicious, persistent, treacherous, and, in both sexes, more or less invalidating and sterilizing disease. It is known to attack at all ages, both sexes, and persons in every civil condition, not excluding even the clergy.

In contradistinction from the easy going vagary just alluded to, the specialist and authority of to-day is almost in a state of nightmare and remorse as to the ravages of this disease. These ravages are primarily due to the seemingly fixed, lamentable indifference concerning gonococcal invasion by the average family practitioner, and secondarily due to the good natured ignorance and the jocular attitude toward all venereal infection by its various victims, and finally due to the imperfections, limitations, and inexperience in treatment by the very men who meet this disease in the sum total most commonly, namely, the average practitioners. This is obviously true. The general practitioner, who, in a year, sees a dozen or two new cases of gonococcal infection is by no means doing a small venereal practice.

*Read by invitation before the Williamsburgh Medical Society of Brooklyn, N. Y., November 11, 1912, as part of a "Symposium on Acute Gonococcal Infection."

tients are given a reprint of the paper which appeared in *The Long Island Medical Journal,* ii, 511, 1907, under the title of Instruction to Those Having Gonorrhea. It seems self evident that such printed matter should cover explicitly the following points: The nature of the infection, the importance of the disease sociological and personal, the tendency toward penetration, complications and persistence, the treachery of the disease, even in the hands of the best authorities, with the outcome of diseased wives, husbands, and children after supposed cure of the original victim. Particular instruction should be included as to habits during the presence of the disease, especially as to diet, alcohol, tobacco, exercise, and coitus, and precautions also as to self infection by the patient of the eyes and rectum after dressings and washings, and as to the inoculation of the innocent through soiled dressings and surgical or toilet articles.

Many have seen cases of autoinfection of the eyes, but of the rectum much less commonly. I recall the case of a youth who prided himself on being unusually careful and clean in his attention during an acute gonococcal urethritis by using a sponge for frequent bathing of the genitals. Unfortunately and innocently he used the same sponge for bathing his buttocks and anus, which finally resulted in an infection of the anus and rectum. Proctoscopy revealed gonococcal warts, several inches up, numerous, various in size, and disseminated. Surgical removal and lavage cured the patient.

The advantages of such printed instructions in office and clinic scarcely need enumeration, as at least the following will be admitted, without comment: All patients receive orders on the same matters in identical terms, any of which may be explained upon request. This removes any likelihood of omission by the busy practitioner or clinician of important points from patient to patient. It also prevents the excuse that the patient did not remember or understand any particular element in his own

care of himself. Thus the bulk of the responsibility is placed where it belongs after the first careful examination and explanation and prescription, namely, with the patient. The foregoing instructions might be regarded as the sociological part of the pamphlet, but the therapeutic side must not be omitted, therefore explanation must be given as to the kind, use, and adjustment of dressings, suspensory bandages, and the like. Most vital is the teaching of how hand injections should be taken. My own little pamphlet seems to cover this ground very well in the following terms:

> You must be absolutely sure to obey the following directions while taking the hand injection. If you do as you are herein told, only benefit will follow. If, on the other hand, you do as you please, or experiment on your own account, only you will be responsible.
>
> First, always urinate before taking the injection in order to wash as much pus from the urethra as possible.
>
> Second, never use force in taking the injections, but rather, on the contrary, be as gentle as possible.
>
> Third, never use a syringe that does not work smoothly, because a "kicking" syringe prevents gentleness.
>
> Fourth, never use more than one syringeful at one injection, unless specially ordered by the doctor.
>
> Fifth, fill the syringe, hold it tightly against the mouth of the penis, and gently fill the passage until it feels as full as when urine is passing through it. In other words, no pressure greater than Nature's own during the act of urination is either necessary or desirable.
>
> Sixth, hold the injection in for five or ten minutes by the watch (time to be specified by the doctor).
>
> Seventh, after cure never loan the syringe to any one else, but rather destroy it, in order to avoid poisoning anybody with it.

Prevention is our next topic, a term which obviously implies entire protection of the healthy from the virus of the diseased individual in either sex. In our title, the female is omitted. In general, it may be said that, sooner or later, infection occurs if normal intercourse is performed, in the medical sense of complete introduction of the male into the female organ, with ejaculation, and not in the legal sense of mere contact, with or without introduction.

The importance of this point is illustrated by the following case: A business men's dinner for the consummation of an important project ended with general intoxication and the suggestion that the company visit a house of prostitution for the night. One of the gentlemen, a suburbanite, had brought his wife into town and left her at a hotel. His part of the sexual debauch consisted in intercourse with one of the inmates, after which he returned to the hotel, slept off part of his liquor, and the following morning had intercourse with his wife. A gonorrhea developed in both husband and wife in about nine days. Both were referred to me by Dr. Frank Terry Brooks, of Greenwich, Conn., at the very earliest moment possible, so that each received complete cure. The woman's case never extended beyond a urethritis and vaginitis, which was a lucky and narrow escape. The man was doubly guilty because his wife was a normal sexual individual, deeply devoted to her husband, and the mother of four children in five years and willing to have still others. More than this, she freely forgave her husband because the matter occurred while he was intoxicated.

On the other hand, infection may occur without complete intercourse, as is illustrated by the following example: A gentleman whose acute urethritis had been reduced to scanty discharge and comparative comfort yielded to the solicitations of his wife for intercourse, but thought he was protecting her by not performing the act except by mere external contact. All this was absolutely against my orders and outside my knowledge, until he confessed that his wife was infected and was showing florid symptoms. She was immediately referred to her physician, Dr. Edward B. Cragin, passed through a severe attack, with tubal involvement, but without operation.

The readiness of infection is well illustrated by the foregoing examples.

Prevention through abnormal intercourse, on the other hand, is quite another matter. Every one is

familiar with the various mechanical devices which prevent infection and also so limit the normal enjoyment of the sexual tie as to render them obnoxious and unpopular. The theory, however, that permanent damage ensues upon their use is a mistake. They rather act as does the glove upon the finger of a woman endeavoring to distinguish the texture of fine goods. While the glove is on, refined tactile sense is decreased, but returns when the glove is removed.

Prevention through antiseptics is common in both sexes. The usual error is that undue strength of solution is used to the damage of the delicate mucous membrane of these parts. I recall the case of a prostitute who shed a complete cast of her vagina through having used a douche of bichloride of mercury of unknown, but excessive, strength. Apparently she argued that if one tablet in the douche bag did good a handful of tablets would do more good. Strange to say, her recovery was complete, without deformity or adhesions, so far as her condition, when last seen, indicated.

Obviously antiseptics must be employed not longer than twelve hours after a suspicious intercourse. In private practice no case of infection has been seen if the following plan was adhered to: Examination for smear and culture test, followed by gentle anterior irrigation twice daily until the laboratory report came in, which usually meant three days of treatment. Most of the armies and navies of the world supply the enlisted men with preventive packets containing an antiseptic injection against urethritis and an ointment against open lesions. The men are courtmartialed and degraded if they become infected, which, with the medical means, seems to stimulate care and success of the plan. In this connection it must be remembered that, formerly, in our navy, there were enough men ill of venereal conditions, at all times, to represent the crew of a second class battleship, hence the grave importance of these precautions.

The obstacles against the author's plan of preventing infection rest with the patients who cannot usually be brought to believe that they may well have a disease which they do not as yet perceive themselves. Also many will not believe that a woman with a pretty face, a beautiful body, and an affectionate manner may be a hotbed of virulent infection—until the disease is unmistakably present.

Abortion is the next topic, which, in this disease, as in pregnancy, means the cutting short of a condition already existent. Statistics as to the success of abortive treatment cannot be complete unless they rest on smear and culture diagnoses and distinguish the desquamative or prepurulent stage, when gonococci in epithelial cells, without pus, are present. Very few patients reach the specialist's office in this stage, for valid reasons. First, sexual and alcoholic debauches are usually combined, and, second, many patients are familiar with the fact that after an alcoholic debauch, without the sexual factor, there is a great deal of irritation, sometimes even a mucous disturbance of the urethra. Hence it follows that the mucous prepurulent irritation of the first twenty-four hours of a gonococcal urethritis is ignored by the vast majority of patients. From this fact it follows that hardly any patients seek advice at this, the ripe time for results of abortive measures. If experience was otherwise, a great deal of venereal infection would be saved from proceeding to the later stages, in both sexes.

The most remarkable case of abortive treatment gone wrong was an attempt by a patient, recently personally reported. The man went to a drugstore and asked for an antiseptic, flexible bougie for checking his gonorrhea, seemingly in its earliest possible stage. His impulse sprang from the fact that he was engaged to be married and desired to protect his future wife. The druggist gave him a stick of silver nitrate caustic which he introduced into his urethra, totally destroying about five inches of it, which came away as a complete cast. Syphi-

lis, this accident, the resulting stricture and its deformity, and the breaking of his engagement to be married, all served to produce insanity.

The accepted methods of abortion are the swabbing out of the first inch of the urethra with three to five per cent. silver nitrate through a short urethroscopic tube. The reaction which follows is usually readily controlled by standard means. This plan corresponds with swabbing out the vagina of a woman with five to ten per cent. silver nitrate solution. Irrigation of the first three inches of the urethra with a small catheter and hand syringe with any recognized mild antiseptic is the second scheme. In each of these treatments I like to close the urethra with a penile clip or elastic band to prevent extension of the drugs beyond the desired point. Cocaine is a mercy for the caustic. I have also been successful by using the constriction of the urethra and, with a medicine dropper instilling any of the newer silver salts in strong solution, retaining it from ten to twenty minutes, and repeating the application twice or thrice daily for three days. The toilet of the foreskin and glans must be studiously observed to prevent autoinfection of the urethra; exourethral and endourethral abortion must be carried out together.

In this, as in all stages of acute gonococcal inflammation, preference is given to relatively weaker solutions and much longer application.

Treatment of acute anterior gonococcal urethritis without complications is our next subject. This is the stage marked by free, purulent discharge and other signs of well established, more or less severe inflammation. Bacteriologists inform us that there are at least twelve different strains of the gonococcus, naturally varying in virulence. This fact accounts for the wide divergence in the incubation, onset, establishment, course, complications, and prognosis of this disease. The treatment is divided into the expectant and irrigation methods. The first point is, which is the better? Obviously that

which, in the long run, leads to least complications. Therefore, in the hands of the general practitioner, the expectant is by far the better, because it does not require premature interference with the inflamed and damaged, delicate mucous membrane. In fact, I am accustomed to limit the irrigation treatment solely to cases of true anterior disease, with no appreciable congestion of the prostate, as determined by at least daily rectal examination of the prostate. Naturally such a person must be a man of means who can afford treatment once or twice a day for two or three weeks. Chetwood's double current apparatus with a large irrigator never higher than the patient's ear, thus furnishing pressure equal to that of the urine during micturition and containing a hot, rather weak, solution, fulfils the requirement.

The armies and navies of the world put the enlisted men to bed during the first two weeks of this disease, with the double purpose of affording quiet and of maintaining absolute control over the individual. This would be ideal in private work also, but so many patients would be betrayed by going to bed without previous obvious sickness that one may very rarely resort to it. In children this treatment is very serviceable, as naturally the parents invariably know of the affliction which commonly arises from unnatural practices on the part of vicious adults. In this connection I recall the case of a nine year old boy who was intentionally infected by a merchant of considerable social and financial standing, but of essential perversion of sexual instinct. The only treatment I could possibly give was rest in bed, urinary diluents, and bacterins. The patient did extremely well, although he improved slowly. The parents became impatient because more was not being done locally for him and finally were unjust enough to take him from my care. It is certainly difficult to please some persons. This boy had not had a single complication or severe symptom.

The indications of the expectant treatment are to dilute and neutralize the urine so that it shall not irritate the inflamed mucous membrane and so that, through its increased quantity, it shall wash away the pus at frequent intervals, but only under natural pressure. It matters very little what alkali is used to neutralize the acidity, potash, soda, lithia, and the like. Caution through frequent uranalyses must be exercised to avoid precipitation of crystals, such as sodium urate, which may, by mechanical irritation, offend the mucosa as much or more than the acidity. The drinking of ordinary water is efficient in diluting and increasing the urine, but the patient had best cease forced water drinking about five hours before going to bed, otherwise the activity of the bladder will disturb rest and provoke chordee.

Chordee is the mark of severe infection and may be very troublesome. Cold applications reduce the congestion and the erection, urination then relieves the bladder whose distention is a basis of the symptom. The tendency toward chordee is avoided by emptying the bladder and bowels just before going to bed, sleeping on the side rather than the back, under light in preference to heavy bedclothing, and by taking the fluid extract of aconite in minimum doses every one or two hours through the day. Last, but not least, the patient must not associate with women, especially one of whom he is fond, in order to avoid the inevitable sexual stimulation incident thereto.

Complications of acute anterior gonococcal urethritis are the next topic and are, fortunately, rather trivial in character. They are avoided by as much general rest as possible, consonant with social and commercial duties, such as most patients must inevitably continue. Extreme edema of the foreskin is one of them, due to lymphostasis and inflammatory swelling. Heat to tolerance in penile or sitting baths, local dressings, and subpreputial irrigations are the indications. I use a silver female catheter

mounted in a Valentine irrigator nozzle and reasonably high pressure of potassium permanganate solution to balloon out the foreskin. Spatter is prevented by throwing several thicknesses of gauze over the end of the penis and the catheter in place, which receive the return flow and guide it harmlessly into the sink.

Balanoposthitis is another simple complication, usually accompanied by edema and treated in the same manner. The mechanical removal of the pus, combined with heat, seems to be more important than the actual antisepsis, inasmuch as the continuous flow of pus from the urethra renders the latter at least momentarily futile.

Folliculitis with abscess is more important; if moderate and unobstructive they take care of themselves through the acute stage; if larger and obstructive, puncture and evacuation through the urethra are required. External operation is not advisable, as sinus formation of obstinate character usually follows.

Abscess of the sheath of the penis, usually through lymphangitis, is uncommon and calls for early surgical treatment. Organisms other than the gonococcus, but associated with it, are commonly at the basis of this complication.

Treatment of acute posterior gonococcal urethritis without complications is our next item. Practically all cases of this infection have a slight degree of posterior urethritis, from which the majority proceed to a severe stage. The indications of treatment are, first, a recognition of the anatomy of the part, and, second, of the physiology. The posterior urethra is anatomically the widest part, being bounded behind by the sphincter, and in front by the colliculus or verumontanum. The pouchlike passage between these two points is surrounded by the prostate gland with its innumerable delicate ducts pointing forward for the most part. In the colliculus are situated the vasa deferentia and the rudiments of the womb, the utriculus. From these facts

it will be seen that the irrigation treatment under high pressure invites hydraulic damage to these delicate, essential structures and subsequent penetration of the infection, consequently, even in anterior urethritis, as soon as the prostate shows unmistakable congestion, I never use the irrigation treatment, but promptly go over to expectant means until the acute stage subsides. The second indication of treatment is the physiology of the deep urethra. It should be remembered that into this portion the essential sexual glands, the testicles, evacuate, and the auxiliary sexual glands, such as the prostate, likewise. Hence it follows that great respect must be had for the deep urethra, which, during an acute posterior urethritis of gonococcal origin, must be greatly swollen and edematous, exactly as is the anterior urethra in similar circumstances. Consequently one would ordinarily look for the same means to avail in each case. The expectant is, therefore, the method of choice in the management of acute posterior disease, embodying, as it should, studious avoidance of irritation by physical activity, faulty diet, alcoholic beverages, invasion with any means, instrumental or hydraulic (as fluids under pressure undoubtedly constitute one form of instrumental entrance), or by medicinal stimulation, or, finally, by direct and indirect sexual excitement and gratification. In treatment it must be remembered that there is a certain amount of physiological congestion due to the normal activity of the testicles in their secretion of semen and its storage in the seminal vesicles, followed by the congestion of a more or less regular evacuation in emissions or intercourse. Then the disease produces intense congestion. These sources of congestion should not be augmented by any error or violence of treatment, which again repeats in another form the argument in favor of the milder expectant management which leads to far fewer complications than any other method.

Acute posterior gonococcal urethritis occurs in

mild, severe, and intense forms. The mild cases persist only a few days, show few symptoms and little inconvenience, except frequency and urgency of urination. Tenesmus, if present at all, is transitory and slight. The severe cases persist from one to two weeks and add greater frequency and urgency of micturition, with distinct tenesmus, day and night. Complications usually arise in many of these patients. Hemorrhage is not uncommon. The intense forms last from two to three weeks and include, with the foregoing symptoms, much pain and more or less hemorrhage. Complications are almost invariable. I recall the case of a young lawyer whose urethritis required three weeks instead of one to develop, but went on to severe hemorrhagic posterior urethritis with unilateral epididymoorchitis. He passed, not uncommonly, a half wineglassful of blood several times daily for nearly a week. He fully recovered under the methods hereinafter stated, combined with liberal injections of bacterin, married into one of the socially distinguished families of the country, and has since had a baby without infection of his wife, a very satisfactory, blessed outcome.

Mild cases are treated exactly like anterior urethritis; the usual habits of life, mild diet, simple alkalies and diluents, cessation of hand injections, and precautions against the congestion of constipation, sexual excitement, and undue water drinking.

The severe cases require rest in bed and in addition to the foregoing simple details, one may add, according to the patient's choice and comfort, hot or cold applications to the perineum, or irrigations of the rectum.

The intense cases require longer treatment on the same lines as the severe cases. Bacterins may be advisedly added, preferably autogenous in type.

Posterior urethritis which is not declining satisfactorily requires irrigation. The safest method suggests that a small catheter be passed into the bladder with great gentleness, always after urina-

tion, to flush away contained pus from the urethra. The bladder is then irrigated to prevent infection, filled with a mild antiseptic solution, beginning with boric acid and ending with reasonable strengths of silver nitrate (one in 20,000 to one in 5,000), or potassium permanganate (one in 10,000 to one in 4,000). The patient then discharges the antiseptic, cleansing the infected region under Nature's own pressure of the urine. Before and during such manipulations, the patient should be taking some efficient urinary antiseptic as a preventive. Another good method of irrigating the deep urethra is with a small catheter and hand syringe, so that the pressure of the fluid may be regulated to a nicety, to agree with the pressure of the urine. Heat to tolerance is essential in all these steps. For extreme distress, if present, one may give an opium preparation, the choice being codeine, unless inefficient.

I do not believe now, and I have never believed in the essential wisdom of irrigations of the deep urethra under high pressure through the meatus. It is noteworthy that, at least as far as New York authorities are concerned, most of the devotees and enthusiasts of this form of management have abandoned it, for the sole reason that the number of complications was greater than without it. These statements are not to be regarded as assuming that this treatment is the cause of complications *per se*, because not uncommonly one sees complicated cases without any treatment at all. For example, I recall a hospital patient with double involvement of the testicles and incipient abscess of the prostate who had had the disease about two weeks as a first experience and without treatment of any kind.

The irrigation method of treatment appeals to some patients in the light that "the doctor is doing something," inasmuch as judicious observation of symptoms and gentle means of treatment do not similarly attract their attention. The same remark applies to premature application of hand injections, or of office treatment. If, therefore, the patient be-

longs to this nervous, exacting type, it is, in order to hold him, necessary either to institute the one or the other method of pleasing him; much like the use of a placebo, with the reservation that the disease will not be stirred up. I recently had a lesson in this line. Two brothers were referred to me, one with acute, the other with chronic gonococcal urethritis. After thorough examination of the latter, I instituted office instrumentation and instillations. In about two weeks the acute case was ready for hand injections and began to use them, whereupon his brother wanted to know why I was not doing anything for him by also giving him hand injections. I thought I convinced him that my judgment had best rule and that a hand injection would probably harm rather than benefit him. To my disgust, both brothers left me, doubtless because the patient with the chronic case, who possessed the stronger personality, induced the other to believe that I was trying to "work" them. If, upon his demand, I had given him a hand injection of normal salt solution, both patients would have remained in my care until cured. I shall never again be caught in this same way.

The complications of acute posterior gonococcal urethritis are next for attention, but cover so vast a field that a lengthy paper could be offered on this subject alone, and even on some of the complications by themselves. In order to complete the logical sequence of this paper, however, one should speak of the more prominent complications: Cystourethritis, cystitis, prostatitis, seminal vesiculitis, funiculitis, and epididymoorchitis.

Cystitis is an extension into the bladder of cystourethritis, which, in reality, is only a proximal extension of the urethritis into the direct zone of the sphincter muscle. Each demands about the same treatment as the intense posterior urethritides do, in broad aspect rather than minute details.

Prostatitis represents lateral extension of the infection into the prostate gland and may or may not

go on to single or multiple abscesses or one generalized abscess, affecting the gland as a whole, or one lobe. Caution in diagnosis must be great, as it is surprising to see how readily a generalized prostatitis, without abscess, will simulate an abscess. When this point is settled, surgical evacuation is indicated. It was formerly taught that the evacuation should be always made through the urethra. It is now recognized as wiser to evacuate where the greatest prominence presents; thus the surgical rule of attacking an abscess where it seems about to point is followed, and also the danger of a urethroprostatic sinus is avoided. Prostatitis without abscess formation indicates anodynes, rectal irrigation, and the various methods assigned for severe posterior disease. Gentle, thorough massage, regularly done, as soon as decline appears, is of great value in many cases, and should be tried.

Seminal vesiculitis, funiculitis, and epididymoorchitis are so closely related that they should be regarded together. The infection travels from the colliculus at the ejaculatory duct proximally along the vas deferens into the vesicle, epididymis, and testicle. Bodily and local rest are urgently needed, hot or cold local applications, anodynes, and the other treatments of intense posterior disease are indicated. Open operation is rarely, if ever, necessary in the acute degrees of these three complications. It finds an application, if any, in severe phlegmon of the seminal vesicle. In chronic stages, however, the indication is otherwise, but we are not concerned with chronic conditions in this paper.

One drug should be called to attention which I have found of value in allaying congestion and irritation, namely, the fluid extract of aconite, prescribed for intelligent patients every one to two hours, for unintelligent patents every three to four hours, in doses of one minim. The interval is doubled as soon as the physiological signs appear, namely, tingling of the sensory nerve endings in the lips, tongue, throat, and digits, perspiration, and a

feeling of relaxation. It is surprising to see how many intelligent patients will describe improvements in the symptoms after a half day of this treatment. I usually limit unintelligent patients to a total of six to eight minims in twenty-four hours.

The serum and bacterin treatments are the last element of this paper. Unfortunately bacteriologists have not been quite as successful in the preparation of these products as they have been with those related to other organisms. This seems to be due to the fact that there are at least twelve different strains of the gonococcus recognized, which renders slight likelihood of finding a stock bacterin which meets the given infection to the best advantage. Mixed bacterins, containing all the strains, may, with time, be found to have met this obstacle. On the other hand, the wisest plan seems to be a trial of autogenous bacterins, which, although often difficult to obtain, are usually prepared in most laboratories within a week or ten days.

The serum seems available in the acute stages, while the gonococci are numerous and active, but the bacterins appear to be indicated for combating the absorptive conditions of the disease, in the chronic and possibly subacute periods. When one preparation seems to have failed, the other should be tried, serum or bacterin, as the case may be. I have lately been using larger doses, especially of the bacterin, with apparently better results. If time bears out this observation, it will be analogous to that in the case of diphtheria, namely, that the larger doses of antitoxine succeed when the smaller ones fail.

In this connection I recall the case of a man with double, chronic, relapsing seminal vesiculitis, so severe as almost to constitute an acute attack during each relapse. He preferred to postpone Fuller's operation of double seminal vesiculotomy. I therefore began to give him gluteal, intramuscular injections of autogenous bacterin, 400 million organisms at a time, at first every other day, then twice

a week, and latterly once a week. Up to the present time the man has received about forty injections. His prostate, vesicles and testicles have all returned virtually to normal and no relapse has been even suggested by symptoms. I purpose exploring his deep urethra with the urethroscope very shortly. For this reason I can make no note of findings now.

I have endeavored to touch upon the indications of acute urethritis in the matter of treatment from the standpoint of anatomical, physiological, pathological, and bacteriological data rather than from the data of mere lists of drugs or formulas available. This seems to have been the best plan of approaching an old subject because, if one carries in mind clearly what is going on in a definite part of the urethra and its annexa during acute gonococcal infection and its complications, the selection of the drugs or of the means of treatment is relatively easy. One rule, however, should be followed, that of observation, gentleness, and conservatism. "When in doubt do nothing," is a very safe axiom in gonococcal infection.

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