

these demonstrations of medical success, that proper and just credit is not accorded the physician for such efficient work, placing, as he does, a patient in imminent danger of dissolution, as surely as if he were affected by any other deadly process, in a condition of usefulness and comfort to live out the allotted life period.

In conclusion, I plead for a more careful treatment of infectious diseases during the acute as well as convalescent stage. Protect the heart. I plead for a more extensive study of cardiovascular diseases, believing it to be fruitful of gratifying results in treatment. I plead for a more general practice of candid and frank statement of heart conditions early in the history of the case. I plead for public education as to prevalence of heart disease, its untimely consequences, and the hope of great protection under medical treatment.

1135 West Franklin Street.

THE NEISSER OR GONOCOCCUS VACCINE IN GONORRHEAL AFFECTIONS OF THE GENITOURINARY TRACT.

AN EXPERIMENTAL STUDY.

NOAH E. ARONSTAM, M.D.

DETROIT, MICH.

This paper embodies the results of my experiments with the gonococcus bacterin or vaccine. The report is merely tentative and preliminary; a subsequent report will probably give more valuable data concerning this form of treatment. For the last six or seven months I have extensively employed this method of treatment in a number of gonococcic affections invading the genitourinary organs. I have utilized the vaccine not only in the maladies engendered by the gonococcus primarily, but also in the various complications and sequelæ of this type of infection. The cases are varied and embrace different stages and forms of the original malady. The number of cases wherein opsonotherapy was employed was 54, comprising acute and chronic gonococcic urethritis, epididymitis, prostatitis, seminal vesiculitis, adenitis, gonorrheal vaginitis, gonococcic arthritis and the rarest sequelæ of gonorrhea—gonorrheal iritis.

VALUE IN ACUTE AND CHRONIC CASES.

In the acute stage of this affection the treatment was attended by favorable results, pre-eminently so in acute specific urethritis, epididymitis, prostatitis and cowperitis. In the granular form of this affection the results were negative. Only stock vaccine was used and from twenty to forty millions of vaccine—according to the exigencies of the case—were injected in the region of the hip. In the chronic states of this infection, especially in chronic posterior gonococcic urethritis, its utility is doubtful, although some improvement was always noted. No other treatment was instituted, whether internal or topical. Opsonotherapy was the sole agent employed, in order to test its efficacy. The number of injections used in a given case varied from three to eight, and the length of time required to effect a cure in the acute form of gonococcic urethritis ranged from five days to four weeks; on an average the minimum period was ten days and the maximum three weeks.

The vaccine or bacterin possesses a diagnostic as well as a therapeutic value. It is a powerful means of bringing to view latent gonococcic states. Hence as a diag-

nostic agent it may be implicitly relied on in doubtful cases, especially when the question of matrimony is the paramount issue. There are cases wherein objectively and microscopically all vestiges of the disease seem to have been eliminated, and yet on injecting the gonococcic vaccine the discharge reappears, thus putting us on our guard and demonstrating that the morbid process has not as yet come to a termination.

Gonococcic vaccine acts similarly to tuberculin in disclosing latent and dormant conditions that would otherwise have escaped detection.

In gonorrheal arthritis, for instance, even after an apparent cure, the bacterin will usher in a mild recrudescence of the arthritic process, thus denoting indisputably that the disease has not been entirely eradicated. The same principle applies to affections of the posterior urethra, the result of gonococcic invasion. Seemingly the individual is free from all symptoms. Repeated microscopic examinations of the filaments and flocculi in the urine have proved negative, so that the practitioner is justified in declaring his case "cured"; but on injecting the vaccine he will be surprised to note the reappearance of the symptoms and will then be able to demonstrate with facility the presence of gonococci and other bodies in the sediment on centrifugalization. It would be superfluous to give any specific instances, as this paper deals solely with the essential and salient features appertaining to this method of treatment.

Of course, the most careful aseptic precautions should be exercised in the administration of this remedy. The parts should be thoroughly disinfected, the syringe and needle boiled and every effort made to render the area free from any accidental infection. The pain engendered by its use is very insignificant; a slight burning sensation for a few minutes is all that the patient experiences. Occasionally the injection area may become somewhat inflamed; it disappears in a day or two.

REACTION FOLLOWING INJECTION.

A word about the reaction following the injections. In nearly all cases there ensues a constitutional as well as a local reaction; it is an effect that may always be anticipated. Yet it is not very marked and passes off in a short time. The reaction varies with different individuals, largely depending on the idiosyncrasy of the patient, the intensity of the morbid process, the presence of an additional or mixed infection, the duration of the malady, etc. The temperature may rise from one-half to one and one-half degrees Fahrenheit; there may be slight chilly sensations with some headache and muscular soreness. But the next day the patient feels better and is able to attend to his work.

The Negative Phase.—The local process now becomes more or less intensified; the discharge is markedly increased and there is slight burning on micturition. We term this the negative or reaction phase of opsonotherapy. This reaction is the more pronounced if we have to deal with a gonococcic infection, pure and simple; if other bodies are present at the same time, however, the reaction is *nil* or very mild. Hence, if a gonococcic urethritis is complicated by other pus cocci, the vaccine loses its efficacy. This is the reason it does not always act favorably in chronic cases. In such instances the conjoint administration of both the gonococcus and staphylococcus vaccine becomes necessary. Bacteriologic examination in all cases, irrespective of their stage, becomes imperative in order to ascertain the

exact infection one has to contend with. It is a procedure that greatly facilitates the treatment.

The Positive Phase.—After the negative period has existed for about two, or at the utmost three days, the positive phase makes its advent. It is characterized by a decline in the severity of the pathologic process a retrogression of the morbid condition takes place either gradually and slowly or with great rapidity, and at times abruptly, the latter only in exceptional instances, however. This should constitute our guiding factor in repeating the injections, as well as in computing the dosage. At times it may be necessary to repeat the dose at short intervals if no improvement ensues, while again we must not only lengthen the interval, but also reduce the dosage to half of the usual amount, which is twenty millions. As a routine procedure it may be said that twice a week is all that is necessary and the latter should never be exceeded save under exceptional circumstances.

SUMMARY OF RESULTS.

To summarize briefly the results obtained by this particular form of treatment of the affection under consideration, they may be formulated as follows:

1. In acute cases the vaccine acts beneficially, and the time necessary to cure the disease does not exceed four weeks.

2. In some of the complications of gonococcal urethritis, such as epididymitis, cowperitis and acute prostatitis, as well as in gonorrheal adenitis and in involvement of the lymph channels on the dorsum of the penis and in posthitis of the same origin, threatening phimosis, it may be confidently relied on. In the above complications it acts very beneficially and efficaciously and may be considered curative. Lately I have also used it with success in an affection, only rarely encountered during the course of gonorrhea, and which has been denied by authorities, namely, gonorrheal iritis. It is a distinct disease entity and may be seen complicating an arthritis of the same origin or appear independently during the subacute stage of the disorder and during an acute exacerbation of a chronic urethritis.

3. No other treatment, whether systemic or local, is necessary, and irrigations and injections may be entirely dispensed with.

4. In chronic cases it is inert and acts indifferently, owing to the fact that in these conditions one has to deal with a mixed process. The conjoined use of other bacterins, therefore, suggests itself. In these instances the gonococcus vaccine *per se* has reached its limitations.

5. It is a valuable diagnostic agent. It brings to view latent or dormant conditions and thus affords a most important diagnostic means in definitely deciding on whether a given case has been actually cured, which is of inestimable value for sociologic reasons.

6. In dormant gonococcal arthritis it will bring about a recrudescence of the disease. In this sequela it materially shortens its duration and brings about a speedy restitution to the normal.

7. No exact rule can be laid down as regards the dosage and the intervals of the administration of the bacterin; each case must be treated individually.

8. The future possibilities of gonococcal vaccine in particular and opsonotherapy in general are unlimited, promising to give us a new and unexplored field of scientific inquiry. Its bearing on prophylaxis must also be considered and furnishes material for future re-

search. As it now stands the subject is merely in its infancy.

CONCLUSIONS.

Our former conception as to the local aspect of gonococcal urethritis is erroneous and dangerous, endangering not alone the individual, but also the family and state. That the process is not merely local can be readily adduced from its many and far-reaching complications and sequelæ, as well as by the reaction obtained on the administration of the vaccine, confirming beyond controversy the fact that we have to deal with a constitutional or systemic process of varying degrees of severity that should be combated both locally and constitutionally, notwithstanding the optimistic views of many who hold this affection to be solely a local pathologic invasion.

73 Shurly Building.

HYDROTHERAPY: METHODS OF APPLICATION WITH RESULTS

AS USED IN THE PHILADELPHIA HOSPITAL FOR THE INSANE.

WALTER G. BOWERS, M.D.

Assistant Physician, Philadelphia Hospital for the Insane.
PHILADELPHIA.

The purpose of this brief report is to demonstrate what has been accomplished in hydrotherapy in the Philadelphia Hospital for the Insane since the installation of the hydrotherapeutic plant in April, 1907.

The apparatus and the facilities for hydrotherapy are as follows: A douche room containing rain and spray baths, sitz baths with liver spray, perineal and Scotch douche, steam and immersion baths, all operated from control table; shampoo apparatus with marble massage table; three hot-air cabinets for patients sitting, and one for patients reclining; dressing and lounging room with four pack and massage rooms; eight special porcelain tubs for continuous flowing bath, four for males and four for females.

The hydrotherapeutic department is under trained male and female operators, the male patients receiving treatment between 8 and 12 a. m., female patients between 2 and 6 p. m. daily.

Selected patients were given special treatment in both continuous baths and douche room. During the past sixteen months fifty cases were treated in the continuous flowing bath, the length of treatment being from a few hours to seven days in duration, the temperature of the water ranging from 85 to 110 F. Most of the patients treated were excited ones, in whom motor restlessness was marked. They represented cases of mania, acute, chronic and recurrent; excited types of dementia præcox; maniacal episodes of epilepsy, dementia paralytica and senile dementia; alcoholic insanity and insanity of chorea. Most of these patients were greatly benefited by the treatment, especially in the cases of mania, excited cases of dementia præcox, senile dementia and toxic cases, including insanity of chorea.

A brief note on three of the cases will show the improvement observed:

CASE 1.—Daniel D., aged 30, white (mania (acute)). On admission this patient was garrulous, vituperative, restless, noisy and hostile in manner. He was placed in the continuous bath Oct. 16, 1907. The temperature of the water was 100 F. Little or no improvement was noted at the end of the first