

SYPHILIS IN MENTAL HOSPITAL PRACTICE.*

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Dr. PRENTICE said that syphilis, in its incidence, diagnosis and treatment, presented, in mental hospital practice, problems which differed from those met with in dealing with the disease in general practice and in V.D. clinics. In the former its incidence was higher than in the general population, and that was largely because many of those whose nervous system had become affected by the later stages of the infection ultimately developed a psychosis. Drugs which were efficacious in somatic syphilis showed but little therapeutic effect in the treatment of the nervous system when affected by syphilis. There was a wide variation in the syphilis occurrence-rate among new admissions to mental hospitals, namely, from 5% to 31%; there was no doubt that incidence varied in different parts of the country; for instance, at Whittingham Mental Hospital, Lancashire, the male admissions in one year showed 21.9% with syphilis, and females 8.9%. At Narborough in the past two years—using the same methods of diagnosis—the positive males were only 7.7%, the females 4.6%. It was difficult to estimate reliably what proportion of the general population suffer from syphilis, but comparison of the figures of the Royal Commission on Venereal Diseases with those given by numerous workers in mental hospitals—excluding cases of general paresis and meningo-vascular syphilis—showed that the part played by syphilis in the ætiology of ordinary mental diseases must be a very small one. Bearing in mind the body-mind relationship, any toxic or infective process which could be a factor in the ætiology of mental illness should be dealt with. Even if the disease were predominantly psychogenic, all possible physiogenic factors should be eliminated or dealt with.

In view of the lack of inhibition and the disorders of conduct characterizing the preliminary stages of some mental diseases, it was surprising that the early stages of syphilis were not more often encountered. During ten years' examination of recent admissions Dr. Prentice had never seen a primary sore, and it was rare for him to see the ordinary clinical signs of the secondary and tertiary stages. All the cases diagnosed as positive before the routine test was inaugurated suffered from either general paralysis or meningo-vascular syphilis; no cases of latent syphilis were detected. The marked increase of diagnostic efficiency constituted a strong plea for the more general adoption of a routine serological examination.

The Wassermann test had acquired a prestige and authority which on the evidence now available was not wholly justified. No present biological method of examination had reached mathematical accuracy in regard either to sensitivity or specificity, but the general opinion among serologists at present was that the best of the precipitation tests had been proved to be superior in regard to sensitiveness, and equal with respect to specificity, to the Bordet-Wassermann reaction and its modifications. Most of the flocculation tests gave good results in the hands of their originators and experienced workers, and their simplicity made them eminently suitable for carrying out at ordinary mental hospital laboratories.

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Meinicke recently concluded (1) that the flocculation and the Wassermann test, had now reached the apex of their efficiency, and could not be further refined without losing in accuracy; (2) that where differences in precipitation in the various reactions or in different modifications of the same reaction occurred, these were only quantitative and therefore relative, even if the difference appeared to be absolute in the weaker methods; (3) the practitioner of the future must make use of the modern sharp flocculation reactions for correct diagnosis and for the control of therapeutic effect.

To avoid possible error it was generally advised that two separate diagnostic methods should be employed simultaneously. The micro method offered several advantages in mental hospital work, especially when dealing with troublesome and resistive patients. In its latest form (M.K.R. II) the Meinicke reaction could be recommended as simple in technique and reliable in results; moreover the readings could be made on the same day. The ideal method was to do two or more different tests on each serum.

Cases of somatic syphilis could be treated with the usual arsenicals and bismuth and mercury, though they did not appreciably alter the course of syphilis of the nervous system. The one drug which had given good results in treatment was tryparsamide; it was a valuable aid in arresting the infection. For best results the treatment should be prolonged over several courses; there was only slight risk of damaging the vision as a result of its use. It should be stopped at the first sign of visual deterioration.

A therapy for which good results were claimed was the intramuscular injection of cerebral lipoids: 1 c.c. was injected every other day, with a weekly injection of tryparsamide. The remission-rate following this was high: patients gained in weight, and the basal metabolic-rate returned to normal.

The mode of action of the fever-producing therapies had not yet been adequately explained; there might be a direct bactericidal effect on the organism, or a stimulation of the general metabolism, with resulting special tissue and biochemical changes. A specific antagonism between the two organisms was supposed to exist under malaria therapy. In some cases this latter had proved superior to any form of drug therapy.

Physical agents included hot baths, the electric cabinet, and short waves or diathermy; the main mechanism was the heat production.

Of chemical agents, sulphurated oil and protein shock preparations were examples. He had treated 25 patients by means of sulphurated oil, but the percentage of remissions was not sufficiently high to warrant it being continued, and malarial treatment was resumed.

A third group consisted of the injection of preparations of dead, or attenuated live micro-organisms, examples of which were pyrifur and T.A.B. vaccine.

Of the infections, benign tertian malaria remained predominant, and had stood the test of twenty years of continuous use. Occasionally a patient proved immune to inoculation, and the spacing of rigors could not be so controlled as by other methods of treatment. The serious malarial illness was often followed by anæmia and debility. Yet it remained the chief therapeutic agent, and represented the greatest advance yet made in the treatment of syphilis of the nervous system.

Discussion.

Dr. FORD ROBERTSON said he would like to make a few remarks on the diagnostic value of the flocculation tests in psychiatric practice. There was no doubt that these were recognized as possessing a sensitivity which was much superior to that of the Wassermann test. In the past three years he had made a routine practice of running three different Wassermann methods at the Institute—the standard method for psychiatry, the Wyler drop method, and the Browning method—with three flocculations—the Kahn, the Meinicke, and the Müller reactions. There had been more agreement with regard to the sensitivity of the three flocculation tests

than among the Wassermanns. The flocculation tests had a much higher sensitivity. The difficulty in regard to flocculation reactions in mental hospitals was that none except the Kahn was as reliable as the Wassermann for fluids; even the Meinicke failed to some extent. It was agreed that the Wassermann was still the test *par excellence* for fluids. The difficulties in regard to fluids had been so marked that in the past two years he and his colleagues had tried to solve some of the problems in these electro-colloidal reactions known as flocculation tests, and he felt that some of the faults were now being overcome. He hoped that in the next few months the Institute would be able to produce a flocculation test involving some of Meinicke's principles which would have equal sensitivity and specificity for fluids and sera, and which, therefore, could be adopted in psychiatric practice.

Dr. E. J. FITZGERALD said that this was a subject in which he had been interested for years, and he could not agree with some of the conclusions which were set out in the paper concerning the Meinicke reactions. He felt no doubt, from a long experience, that the Kahn was superior to other reactions in respect of blood and cerebro-spinal fluid; especially was it superior in the blood. The Kahn had the great advantage that it could be carried out by the average medical officer who did laboratory work. The Meinicke he regarded as very inferior to the Kahn, but there was the advantage that a nurse could collect the blood. A great disadvantage was the unduly large number of false positives. It was necessary to have two tests, the first a diagnostic one, and the second an exclusion test. One test gave the maximum sensitivity; the other must give absolute specificity, while not troubling one so much about sensitivity. In the diagnosis of syphilis, active and latent, there was no test which could compare with the Kahn. It was absolutely necessary to have a routine examination of both the blood and the cerebro-spinal fluid. Dr. Nicole and he were struck by cases in which one got a negative report for blood and a positive one for cerebro-spinal fluid. He sent a sample of blood, taken on the same day, to three different laboratories, and got one weak positive, one doubtful, and one negative. A week afterwards he sent the same sample and got opposite reports from the same laboratories. In the hands of even competent people, the Wassermann reaction alone was a most fallible method of diagnosing syphilis available, and the League of Nations had pointed out, and it was supported by certain well-known syphilologists, that to diagnose syphilis on the Wassermann alone amounted to malpraxis. Most laboratories would return a report of both Wassermann and Kahn.

With regard to diagnosis by the Meinicke, for five years he routinely examined the blood, dealing with over 200 admissions a year. On an average, 21% of the males admitted had syphilis, but he was struck by the fact that in very few did syphilis seem to have had anything to do with the mental illness, apart from the general paralysis group. Dr. Shaw Bolton had postulated that if a man had a weak brain he would break down at a certain age, and if he had syphilis, he would get general paralysis. Excluding general paralysis, the percentage of cases of syphilis in mental hospitals was much below those in the general population.

He would like to pay a tribute to Dr. Prentice, because that gentleman had introduced him to the study of serology.

He wished to emphasize that it was incorrect to say that the various methods possessed anything like the same value. The League of Nations' reports showed that the routine Kahn was infinitely superior to the best Wassermann.

Dr. DUNCAN said that the present was the first occasion on which he had heard it advocated that nurses should take from patients blood for serological tests. Against such a practice he wished to enter his protest. For whatever purpose, the taking of blood from patients should be done only by the medical officer. It was the medical officer's duty to take all possible precautions.

He had listened to Dr. Prentice's paper with the greatest interest, and agreed with everything that gentleman had said. As to results of the Wassermann test, he mistrusted every laboratory except his own.

Dr. R. M. STEWART said that Dr. Prentice had mentioned an extraordinarily high percentage of male admissions who had syphilis—he thought it was 21%—and he asked to what years those figures applied. The newer forms of therapeutic agents had now been used for so long that a substantial reduction in the incidence of syphilis should be seen. Credit for such reduction must be given to the education of the public and to their increasing confidence in treatment, rather than to the potency of the therapeutic agents in the arsenical group. In Vienna all forms of syphilis were now being treated with malaria. He thought that example would have to be followed in this country. If he were in charge of a large acute mental hospital he would give every patient who had presumed active syphilis a course of malarial treatment.

The PRESIDENT agreed that 21% seemed an enormously high figure.

A MEMBER said he had been struck by the definite fall in the incidence of syphilis in the last ten years. At a certain hospital 19% of the admissions in 1926 gave a positive reaction, and there were 21 cases of general paralysis of the insane, whereas in 1936 the incidence-rate for syphilis was 6.3%, and there were only 4 cases of general paralysis.

The PRESIDENT said his own experience, too, had been that the incidence of cases of general paralysis of the insane had fallen a great deal in recent years. He was trying to collect the incidence figures for that disease over a course of ten years. Apart from the places and institutions where there were many sailors, there could be no doubt about the fall.

Dr. DRURY said that when he started at Warwick Mental Hospital there were 25 cases of general paralysis, half of them ambulatory. At the present time, with a similar population, there was only one case of that disease.

Dr. DONALD ROSS regretted that, with this discussion in prospect, he had not looked up his figures bearing upon the subject. Some might remember that fourteen years ago Dr. Ferguson Watson contributed to the Journal an article giving an analysis of a series of examinations of serum in various mental hospitals. At that time in his own institution there were 415 cases, and more than 400 of them were tested; it was all controlled, and no data were supplied to the examiners. Two or three samples from patients went under different numbers. The staff, on their side, took careful notes, so it could not be alleged afterwards that the clinical findings had been "cooked". Three flocculation tests were used. Out of 410 samples there were 25 positives. An interesting thing to him, the speaker, then was that in every case in which the clinician knew there were positive findings from elsewhere, or definite physical signs of the disease, the return was positive, and in no others, or practically none. Among the 3 or 4 exceptions was an old man who had been in the institution several times. In the ensuing 18 months he had a Charcot joint, and he died with syphilitic manifestations. Amongst the other cases which interested him at that time were two of the oldest inhabitants, a male and a female, who gave markedly positive results. The man had been admitted in 1869, and the woman in 1872. At about that date there were in the institution very few instances of syphilis, except cases admitted from Glasgow.

Last year two workers in Edinburgh were very enthusiastic about monkey malaria. The speaker had 5 recent cases which were injected with serum. They developed slight pyrexia, which lasted 5 days; none of the other cases gave any response. One gave no reaction but improved enormously.

Dr. POOL said he had been surprised to note that speakers who particularly stressed serological reactions did not mention the Sigma test. That was one of the earliest, and also one of the best, as it expressed the syphilitic infection in

terms of units ; and when one was following one's cases through, and having the blood tested at intervals, one could watch progress either way in units. Where the tests were done by one person it was a very useful test, and compared favourably with the other flocculation tests which he, the speaker, had handled.

With regard to therapy, he had had experience of the inductotherm during the past few months, and was very pleased with it. With it one could guarantee the temperatures, and it did not upset the patient in the same way that malarial rigors did. One could give any number of rigors up to 20, the average period for the development of each rise of temperature to 105° being $2\frac{1}{2}$ hours. At his institution there had been 34 cases so treated, and he felt that the results compared very favourably with those following combined therapy. Previously he used malaria and tryparsamide.

Dr. E. L. HOPKINS said that in 1927 he published a paper on the incidence of syphilis among the admissions to Hanwell Mental Hospital in 1924 and 1925, using the Wassermann test ; he was sorry to have to conclude from what he had heard to-day that their results were no good. Among the male admissions the syphilis-rate was 27% in 1924, in 1925, 25%. To follow the matter up, he went through the cases for 1926, and found the incidence-rate had dropped to 22%. The war was thought to have something to do with the high incidence, and as the war date receded the tendency was for the incidence to fall. It would be interesting to see whether that drop would continue. In a large proportion of the cases of general paralysis one could get a history of service in France or other theatre of war.

Dr. FORD ROBERTSON, in further remarks, said he would like to correct a possibly erroneous impression. The Wassermann test, if properly carried out, with due regard to all the difficulties involved and the balancing of the reagents, was a very valuable one from the point of view of specificity, but not from the standpoint of sensitivity. That was why the Wassermann, for mental hospital work, lost its diagnostic value. It did not give positive results in mental patients who nevertheless gave strong positives with the flocculation tests. In the experience of himself and others in Glasgow, the Kahn test was difficult to carry out ; some workers had good results with it, others did not. The Meinicke was simpler to carry out, and yielded consistent results, but it suffered from over-sensitivity.

It was necessary that these tests be carried out by someone who was thoroughly conversant with the technical procedure ; none of them could be conducted in a haphazard manner. Just as much care was needed for the flocculation tests as for the Wassermann.

The PRESIDENT invited members to say something about private patients. He had been told that the incidence of general paralysis and syphilis cases had fallen more among private than among hospital patients.

Dr. G. W. SMITH said that during the last fifteen years it had been very rare to find general paralytics in private asylums in London. At an earlier period such cases were as common in those institutions as in others.

Dr. RAMBAUT agreed there was now a decrease in the number of cases of syphilis in private mental hospitals.

Dr. RUSSELL said that at his hospital there had been examinations carried out consistently on practically every new admission for the past twelve years by the Meinicke test, and those who might possibly be positive had been controlled by a Wassermann test done at Leeds University. Only on two occasions had the findings been contradictory.

Dr. PRENTICE, in reply, said he agreed with Dr. Ford Robertson that for examinations of the cerebro-spinal fluid the Wassermann was the better test ; he himself depended upon that more than upon the flocculation test.

In reply to Dr. FitzGerald, he thought the position could be taken to be that, done by the proper people, most of the tests were very good, especially in the hands of those who originated them. It was foolish, he thought, to say one test was good, and another was no good. For example, Meinicke used the Kahn himself, also the other tests, in his own laboratory. In capable hands all the tests gave fairly good results.

Dr. Duncan disapproved of nurses being allowed to withdraw blood for tests ; the Meinicke reaction was a micro-reaction, and needed only a prick of the finger. At this institution the staff liked the nurses to do all they could in these small ways, and by taking notes, to co-operate with the medical staff. He would not allow nurses to take venous blood or cerebro-spinal fluid ; that was a medical duty.

In answer to Dr. Stewart, the statistics he gave referred to the time before and after the institution of the serum test, 1926-7. The 1924 percentages were about the same. They had no private patients.

He was glad to hear of Dr. Pool's successful results. Those who had worked with malaria for many years knew how difficult it was, and if a better method were brought in he would willingly use it.

He rather regretted that the discussion had degenerated into a criticism of things serological ; he had hoped to hear more about therapy.