SALVARSAN IN GENERAL PARESIS

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Early last year I presented an article¹ in THE JOURNAL, giving the general negative results obtained in the treatment of general paresis with salvarsan by the subcutaneous method of administration. The results were so unsatisfactory, in many cases the salvarsan failing to be absorbed, and the method of administration being so painful, that we discontinued its use and have since used the intravenous method.

The following cases were selected with the idea of treating patients in good physical health and showing the fewest possible symptoms, mental and physical, of the ravages of this disease. As is known, patients received in a state institution have run the gauntlet of physicians and quacks and are finally taken there, as to a court of last appeal, the result being that they are generally far enough advanced in the disease to prevent many mistakes being made in diagnosis.

CASE 1.—History.—W. B., farmer, aged 43, married, admitted to hospital Feb. 4, 1911. One cousin insane. Previous health good up to two years before admission when symptoms of mental trouble appeared. Cause of trouble given as sunstroke. Patient noisy and incoherent on admittance.

Physical Examination.—No physical defects present. Well nourished. Alimentary, respiratory and circulatory systems normal. Gait unsteady; slight ataxia and aphasia present. Voice parietic. Incoherent and delusional. Patellar and plantar reflexes absent. No ankle-clonus. Pupillary reflex reduced. Argyll Robertson pupil absent. Urine negative.

Treatment and Results.—On Feb. 6, 1911, the Wassermann reaction was found to be positive. Following admission patient became quieter and remained in good health, at times, however, becoming slightly disturbed, his mental condition changing but little. On March 4, 1912, patient was given 0.6 gm. salvarsan intravenously. Positive reaction followed and was slightly disturbed for a few days. March 20 the Wassermann was found to be still positive and on March 26 a second dose of 0.6 gm. of salvarsan was given. Positive reaction followed with some mental disturbances for a few days. Patient soon became quiet and remained about the same. A Wassermann made again on June 7 was found to be positive. A repetition of the Wassermann on Nov. 7, 1912, gave a positive finding. At present he is quiet and orderly, eating and sleeping well, in good health and his mental condition remains stationary. In this case we get practically no change, except slight disturbances following the administration of salvarsan, the patient's condition at present being about the same as just previous to its use.

CASE 2.—History.—H. B., married, laborer, aged 25, admitted to hospital Sept. 18, 1911. Family history negative. Previous health good up to two years previous to admission when symptoms of mental trouble developed. Cause of trouble given as syphilis. Patient cigaret-smoker since 7 years of age, greatly depressed on admittance.

Physical Examination.—No physical defects present. Well nourished. Alimentary and respiratory systems normal. Heart normal. Pulse 74, irregular and weak. Arteries slightly hardened. Gait unsteady. No ataxia present. Aphasia and incoherence present. Delusional. Patellar reflex greatly increased. Plantar normal. No ankle-clonus. Pupillary reflex reduced. No Argyll Robertson pupil. Urine negative.

Treatment and Results.—Oct. 4, 1911, the Wassermann reaction was taken and found to be positive. Patient improved somewhat mentally and physically following admission, and on Jan. 10, 1912, was given 0.6 gm. salvarsan intravenously. Wassermann reaction made Feb. 9, 1912, on blood and spinal

fluid; both found to be positive. Salvarsan was given again March 7. March 20 the Wassermann reaction was still positive. Patient began failing mentally following the second dose of salvarsan. Ataxia appeared and aphasia increased and he became very irritable. His general health, however, remained good. On August 22 convulsions appeared and he died on Aug. 25, 1912, from exhaustion. In this case the patient improved somewhat up to the second administration of salvarsan, when decline set in and he failed rapidly, dying in five months. The use of salvarsan in this case no doubt merely hastened the end.

CASE 3.—History.—J. B. F., farmer, aged 50, married, admitted to hospital Oct. 25, 1911. One cousin insane. Previous health good up to a short time before admittance when symptoms of mental trouble appeared. Cause of trouble unknown. Patient greatly disturbed and very delusional on entering hospital.

Physical Examination.—No physical defects except a small goiter present. Patient fairly well nourished. Alimentary and respiratory systems normal. Heart and valves normal. Arteries slightly hardened. Pulse 120, regular, weak. Gait steady. No ataxia. Aphasia and incoherence present. Patellar and plantar reflexes increased. No ankle-clonus. Pupils unequal. Pupillary reflex reduced. Argyll Robertson pupil absent. Urine negative.

Treatment and Results.—On Nov. 2, 1912, the Wassermann reaction was made and found to be positive. The patient's condition did not improve and on Dec. 4, 1911, he was given 0.6 gm. salvarsan. Following this he became quieter, eating and sleeping much better, but did not improve at all mentally. On Jan. 4, 1912, the Wassermann reaction was made and found to be slightly positive. Salvarsan was given again on January 16. February 9, Wassermann reaction was repeated and found to be negative. No mental improvement followed, but patient slowly improved physically until August, when he began to fail somewhat physically, ataxia appearing and mental symptoms increasing. November 7, Wassermann reaction was found to be positive. November 19, 0.6 gm. of salvarsan was again given. At present he is still declining slowly mentally and physically. In this case physical improvement set in following the use of salvarsan, but its good effects seem to have been only temporary and the general progressive symptoms reappeared after a few short months, the disease continuing on its slow course of destruction.

CASE 4.—History.—W. D. R., a tinner, aged 45, widower. Admitted to hospital Nov. 2, 1911. Family history negative. Previous health good up to one year before admittance when symptoms of mental trouble appeared. Cause of trouble given as alcoholism. Patient greatly disturbed and very delusional on admittance.

Physical Examination.—No physical defects present. Patient in fairly good physical health. Alimentary and respiratory systems normal. Heart and valves normal. Arteries somewhat hardened. Pulse 90, regular but weak. Gait steady, no ataxia. Aphasia and incoherence present. Patellar reflex increased. Plantar reflex absent. No ankle-clonus. Pupils equal but contracted. Argyll Robertson pupil present. Urine negative.

Treatment and Results.—Wassermann reaction made Nov. 25, 1911, was found to be positive. Patient improved somewhat physically following admittance, but remained noisy and unchanged mentally. Jan. 20, 1912, he was given 0.6 gm. of salvarsan intravenously. He became quieter in a few days but showed no mental improvement. Wassermann reaction, made February 20, was still positive and salvarsan was given again, March 11. Slight mental improvement followed this and he ate and slept better. June 7 the Wassermann was still positive. He remained in good health and was quiet and well behaved until the latter part of September when he became disturbed, becoming very combative and unruly. November 7 Wassermann reaction found to be still positive. At present he is slowly declining mentally and physically. In this case we seem to have a slight temporary improvement both mentally and physically followed by the return of the usual symptoms of the disease.

1. Trowbridge, E. H.: Subcutaneous Injections of Salvarsan in General Paresis, THE JOURNAL A. M. A., March 2, 1912, p. 600.

CASE 5.—History.—M. H., a painter, single, aged 20, admitted to hospital Nov. 8, 1911. Family history negative. Previous health good up to one year before admittance when symptoms of mental trouble appeared and he became suddenly violent. Cause of trouble given as syphilis. Patient greatly disturbed and troubled with many delusions and auditory hallucinations on entering hospital.

Physical Examination.—No physical defects present. Fairly well nourished. Alimentary and respiratory systems normal. Heart and valves normal. Arteries slightly hardened. Pulse 96, regular, weak. Gait steady. Slight ataxia present. Aphasia and incoherence present. Patellar reflex increased. Plantar reflex increased. No ankle-clonus. Pupils contracted. Argyll Robertson pupil present. Urine negative.

Treatment and Results.—Wassermann reaction was made Nov. 25, 1911, and found doubtful. Wassermann reaction was made on blood and spinal fluid, December 12, and both found positive. Patient improved somewhat mentally and physically following admission and ate and slept better. Feb. 26, 1912, he was given 0.6 gm. salvarsan intravenously, and March 20 the Wassermann was found to be still positive. Salvarsan was repeated March 26, 1912. Patient slowly improved following the second dose of salvarsan, and the Wassermann made April 11 was found to be slightly positive. He was discharged April 27 by request and passed from observation. At time of discharge patient was in good physical health, quiet, and had but few delusions, but his mind was enfeebled. In this case there was marked improvement following the use of salvarsan, but from previous experience, I anticipate a return of the symptoms and decline of patient with a readmission to hospital in near future.

CASE 6.—History.—E. W. J., aged 26, an undertaker, married, admitted to hospital Nov. 11, 1911. Family history negative. Previous health good up to about a year and a half before admission, when he became unbalanced mentally and forged a signature to a small check, was sent to the penitentiary for a short time and paroled. On admittance patient very noisy, combative and delusional.

Physical Examination.—No physical defects present. Fairly well nourished. Alimentary and circulatory systems normal. Gait steady. Slight ataxia present. Aphasia and incoherence present. Patellar reflex increased. Plantar normal. No ankle-clonus. Pupillary reflex reduced. No Argyll Robertson pupil. Urine negative.

Treatment and Results.—Wassermann reaction was made Nov. 25, 1911, and found to be positive. Patient improved slowly mentally and physically following admission, and Jan. 26, 1912, 0.6 gm. salvarsan was given. Three days after administration of the salvarsan, patient had a convulsive seizure followed by a partial paralysis of the entire right arm and leg which lasted about a week when full use of arm and leg was recovered. February 9 a Wassermann was made on both the blood and spinal fluid and found to be positive. Improvement continued, and March 11 patient was again given 0.6 gm. of salvarsan. Wassermann reaction made in June still positive. Condition continued to improve, and Oct. 27, 1912, patient was paroled home in very good physical health and much improved mentally, though his mind was enfeebled. In this case, as the Wassermann reaction remains positive, I believe that sooner or later active symptoms will reappear and that the patient will have to return to the hospital.

CASE 7.—History.—W. S., a printer, aged 42, married. Admitted to hospital Dec. 14, 1911. Family history negative. Previous health good up to a few months before admittance, when symptoms of mental trouble appeared. On entering hospital patient under the influence of liquor, but quiet. Admitted having syphilis of about fifteen years' duration.

Physical Examination.—No physical defects present. In good physical health. Alimentary and respiratory systems normal. Heart and valves normal. Arteries slightly hardened. Pulse 120, regular and weak. Gait steady. No ataxia present. Slight aphasia present. No incoherence. Patellar reflex increased. Plantar normal. No ankle-clonus. Pupils con-

tracted and unequal. Argyll Robertson pupil present. Slight trace of albumin in urine.

Treatment and Results.—Wassermann reaction made December 19, positive. Patient remained in good health and in fairly good shape mentally excepting one systematized delusion of vast tracts of land which he owned. Jan. 17, 1912, patient was given 0.6 gm. salvarsan. Condition remained unchanged till February 4, when he became disturbed, and slight ataxia appeared with a marked muscular tremor which lasted for forty-eight hours. March 2 he was given second administration of salvarsan. March 20 Wassermann reaction still positive. He failed slowly following this and became disturbed every few days and at times combative. November 7 Wassermann reaction was taken and found positive. The patient's slow decline continued and at present he is very delusional, mind greatly enfeebled, and at times filthy and untidy. In this case the patient seemed to be getting along fairly well until a few days following the use of salvarsan, when he began to decline and the course of the disease seemed to be intensified by the continuation of the treatment.¹

CASE 8.—History.—J. P. B., man, aged 36, single, no occupation given, admitted to hospital Nov. 16, 1911. Family history negative. Patient in good health up to about year before admission, when he began failing mentally. Cause of mental trouble not known.

Physical Examination.—No physical defects present. Fairly well nourished. Alimentary and respiratory systems normal. Heart and valves normal. Arteries hardened. Pulse 72, regular and weak. Gait unsteady. Ataxia present. Slight aphasia present. No incoherence. Voice parietic. Patellar reflex absent. Plantar increased. No ankle-clonus. Pupils dilated and unequal. Argyll Robertson pupil present. Urine negative.

Treatment and Results.—Wassermann reaction made Nov. 25, 1911, was positive. Patient slowly failed mentally and physically following admission, becoming filthy and untidy at times. March 4, 1912, he was given 0.6 gm. of salvarsan. March 20, Wassermann reaction negative. Improvement set in physically and mentally and he gained rapidly in weight and mind seemed much improved till the middle of May, when he had a temporary set-back and became disturbed for a few days. Improvement continued following this, and the Wassermann reaction made November 7 was found to be slightly positive. At present he is much improved over his condition on admittance but is slowly failing, ataxia becoming marked and mind growing weaker. This case shows a decided improvement immediately following the use of salvarsan, but as we see the effects of the salvarsan slowly wearing out, by the return of a slightly positive Wassermann followed by the decline of the patient, we must admit that the benefits of its use are but temporary; and a repetition may possibly help or may intensify the destructive course of this disease.

One has but to glance at these cases, if they may be taken as examples, to see that salvarsan in the treatment of paresis is as far from giving us any hope for permanent cure as are those drugs relegated to the waste-basket of the past because tried and found wanting. Some slight improvement has followed in a few cases and a crowding of the treatment has, as seen, done naught but intensify the destructive action of this disease and actually hastens the patient's death.

The results obtained by modern methods of diagnosis have accomplished wonders for us in the study of this disease, especially the now universal test of the patient's blood by the Wassermann reaction. Its use brings home to us more and more the saying that civilization and syphilization go hand in hand. More than this, the findings obtained in the examination of patients with this dreadful disease give us practically 100 per cent. of positive results, showing beyond a doubt that paresis itself is primarily a disease of syphilitic origin.

¹ Jan. 6, 1913: The patient has had over thirty convulsions during the past two days. Death is expected at any moment.

Statistics show that insanity is increasing at a rapid rate. Syphilis has been found to exist in cases not thought of heretofore. Paresis, incurable as it stands to-day, is cutting off more and more men at the height of their careers, and we stand helplessly by seeing the patient slowly fail and die in such a depleted condition that words fail to convey the horrible picture except to those who have come in contact with this dreadful scourge.

Since Jan. 1, 1911, there have been admitted to my service in the hospital eighty-eight cases of general paresis among the male patients. Of this number thirty-six have died, ten have been paroled by request, and those remaining are constantly losing ground.

At present there are but two ways of working toward the eradication of this disease. The one with which we can accomplish the most is the education of the public in knowledge of the future evils of syphilis and how they may be prevented by immediate treatment. The other rests with those who are devoting their time to scientific research, and who will sooner or later discover the intermediate process or toxin which is causing this disease, and give to the world a curative drug.

NARCOTIC ADDICTION—A SYSTEMIC DISEASE CONDITION

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Too little study, observation and effort to interpret physical manifestations have been given to those unfortunates suffering from narcotic addiction. We have neglected their disease in its origin and subsequent progress and have formed our conception of them from fully developed conditions and spectacular end-results. We have seen them during or after our fruitless efforts at treatment, their tortures and poor physical condition overcoming their resolutions, until they plead for and attempt to obtain more of their drug. We have seen them exhausted, starved, with locked-up elimination, toxic from self-made poisons of faulty metabolism, worn with the struggle of concealment and hopeless resistance, semi-irresponsible beings, at present or soon to be inmates of institutions affording custodial care.

Our literature pictures them as weak-minded deteriorated wretches, mental and moral derelicts, pandering to morbid sensuality; taking a drug to soothe them into dream states and give them languorous delight; held by us all in despite and disgust, and regarded as so depraved that their rescue is impossible and they unworthy of its attempt.

We have ignored or misinterpreted intense physical agony and symptomatology, and regarded failure to abstain as evidence of weak will-power or lack of desire to forego morbid pleasure. We have prayed over our addicts, cajoled them, exhorted them, imprisoned them, treated them as insane and made them social outcasts; either refused them admission to our hospitals or turned them out after inefficient treatment with their addiction still fastened to them. They have realized our failure to appreciate their condition and to offer help for it, and have, after desperate trials of quacks, charlatans and exploited "cures," finally accepted their slavery, and by regulation of their drug and life, maintained unsuspected as nearly normal an existence as possible, or, broken and impoverished, given up the struggle. From these last we have painted our picture. Confined

and observed by the institution alienist, or concealed as family skeletons in many homes, descriptions of them have given to the whole class of narcotic addicts their present status—cases of mental disease due to drug action or habit deterioration and based on inherent lack of mental and moral stamina.

It was with the above conception of these conditions that I began my work in the Alcoholic and Prison Service of Bellevue Hospital, attracted not by hope of helping "jags" and "dope-fiends," but by the mass of general clinical material admitted to those wards. When I left the service after sixteen months of day and night observation, with personal oversight and attempt to care for about a thousand patients a month, my early and faulty conception was replaced by a settled conviction that these cases were primarily medical problems. I realized that the patients were people sick of a definite disease condition, and that until we recognized, understood and treated this condition, and removed the stigma of mental and moral taint from those cases in which it did not exist, we should make little headway toward the solution of our problem.

It is a fact that the narcotic drugs do afford pleasurable sensations to many of those not yet fully addicted to their use, and that this effect has been sought by the mentally and morally inferior purely for its enjoyment and in the same spirit that these individuals yield themselves to other morbid excesses and indulgences. This class is, however, self-eliminating, and its members rarely present themselves for treatment.

There is, however, from my observations, obtained in Bellevue Hospital and in private practice, another class, including a large proportion, if not a majority, of narcotic addicts, in whom there is no inherent mental or moral inferiority, often men and women of high ideals and worthy accomplishments, whose knowledge of narcotic administration is, in many cases, first gained by withdrawal agonies following cessation of medication, who have never experienced pleasure from the drug, normal mentally and morally, unquestionably victims of a purely physical affliction.

In the literature on narcotic drugs I found very little as to their action or as to the manner of production of symptomatology in those habituated to their use. This experience has been paralleled by some of my patients, physicians of high standing, for many years unknown addicts, and zealous searchers for any information as to their affliction which might offer them hope of cure. The literature on narcotic addiction is notable for a persistent effort to interpret drug action in an addict by its observed action in normal men and animals, attributing to supposed enjoyment plus direct action of the drug, plus hypothetical mental and moral taint, the clinical picture of chronic drug addiction.

Since realizing the foregoing, I have been endeavoring to search out and explain from study of the individual addict and his corroborated testimony, and from clinical observation of his disease, the phenomena and symptomatology peculiar to addiction, and to formulate a theory for their production which would give a rational basis for therapeutic effort. Morphinism is the best example of pure addiction, created in most of the patients who seek treatment independently of environment and of personal characteristics. I shall, therefore, in this paper, confine myself to a discussion of morphinism, leaving the application of my conclusions to alcoholism and other narcotic problems for future consideration.