

corn-syrup and corn-meal and possibly in other ways. There is no such thing as pellagra from corn poison. In the investigation of these early cases, I never saw a case that occurred in a person who did not seem to have been previously debilitated. The early diagnosis of pellagra is rather difficult. Any person may be nervous and have diarrhea; if you are going to rest on those two symptoms you certainly are making an astute diagnosis. There are two forms of the disease, the fulminating form, which goes on to death in two or three months, and the chronic form, which may recur sometimes for years. It has been stated that the second year is worse than the first, and the third worse than the second, both from the mental standpoint and the standpoint of cutaneous and gastro-intestinal symptoms; I do not believe that this is so. Many cases are improved the second year. I have found that some of my patients had had unrecognized pellagra for five or six years, but most were in the first year of the disease, which started as a gastro-intestinal upset, if a very severe stomatitis be included, in over 90 per cent. of the cases. The sequence of symptoms was, as a rule, gastro-intestinal, cutaneous and then nervous and mental. The nervous and mental symptoms formed no regular symptom-complex; they were simply the individual reaction of the patient to an infection or a toxemia. I agree with Dr. Spiller, who in his examination of the cord in some cases of Dr. Anderson, stated that he thought from the appearance of the cord that pellagra was probably of infectious origin. From the early clinical history of cases, which begin with stomatitis, gastritis and usually diarrhea (and these are often forgotten unless one goes very carefully into the history), and which then show cutaneous symptoms, and at the same time or later manifest nervous and mental symptoms, the disease looks like an infection with the cutaneous manifestations as trophic disturbances, and the mental and nervous manifestations as toxic disturbances of a gastro-intestinal infection.

DR. TOM A. WILLIAMS, Washington, D. C.: Pellagra is not a nervous disease. I should not regard the skin lesions as trophic; I consider them as toxic, just as eczema is toxic. What we really have here is an active agent in the nature of a toxin, producing these symptoms. A very important symptom, sialorrhea, is often overlooked, but when taken into consideration, together with violent acute diarrhea, lasting several weeks sometimes, one does not require the pellagra to make the diagnosis, more especially when the gastro-intestinal symptoms are accompanied by some signs of the mental inhibition which is characteristic in some stages of the disease. I do not agree with the statement that the disease does not conform, mentally speaking, to any well-known clinical picture. The disease is typical; it might be the prototype of a well-known picture of mental disease, namely, the *confusion mentale* of Chaslin, which is the mental syndrome shown in pellagra. It is the toxic psychosis. The type of the disease is a confusion of ideas and an inability to react in the usual way. The anxiety state may be in some cases secondary to the feeling that one is severely ill and about to lose one's mind. These conditions of confusional insanity may be well seen in the mental disturbances resulting from alcohol. The confusional state may be maniacal depressive, or it may be subject to definite delirium with more or less systematized delusion, varying with the time and degree of severity of the case.

DR. D. E. HOAG, New York: The gait in the few cases which I saw seemed to be of a spastic type. I do not think any of them were ataxic. Whether that gait varies from time to time, whether it is spastic this week and ataxic a few months later, I do not know. My object in bringing a paper like this before a Section of this kind was to see if there was anything in the early symptomatology of the disease, so far as nervous symptoms are concerned, that would fit in with any of our neurologic syndromes. If there is ever going to be a possible serum that may be used, it would have to be used in the early stages. Consequently, it would be valuable to recognize the symptoms in their very incipency.

I disagree with the observation that pellagra always occurs in the anemic and weak, for I inferred from the answers to my inquiries that it often did occur in the robust and strong.

A CASE OF TRAUMATIC PSYCHOSIS ASSOCIATED WITH AN OLD DEPRESSED FRACTURE OF THE SKULL, FRONTAL REGION; OPERATION; RECOVERY *

C. E. ATWOOD, B.S., M.D.

AND

A. S. TAYLOR, A.B., M.D.

NEW YORK

We deem this case of sufficient interest to report for the following reasons: It was a case of a traumatic psychosis which had already been treated for a year and four months in a private hospital for the insane, without improvement, before it was seen by us. There was a history of an old compound fracture of the skull over the right inferior frontal region, sustained about eleven years prior to the onset of the psychosis. A surgical operation revealed an area of depression of the inner table of the skull, at the site of the old injury, corresponding to the right middle and inferior frontal convolutions. And, lastly, after the operation for the removal of the depressed bone there was a rapid recovery from all symptoms and a restoration of the patient to his family and his business. The operation was performed in January, 1911, so that sufficient length of time has elapsed to enable us to look on the recovery as permanent.

REPORT OF CASE

History.—The patient was a man, aged 50, single, born in New York. He was the fourth of twelve children; his birth was at full term and unattended with difficulty, but as an infant he was "sickly." No mental or neuropathic heredity was ascertained. From youth until the age of 40 the patient drank to excess. He contracted gonorrhea, but denied luetic infection. From the age of 10 he had earned his own living and assisted in the support of his family. In the year 1898, a private business venture not succeeding, he became worried, drank more heavily, and one evening, while under the influence of liquor, shot himself in the head with a 32-caliber revolver. He was not rendered unconscious, and was able to walk several blocks alone to a hospital. The hospital records merely note the removal of a bullet for compound fracture of the skull and the discharge of the patient after dressings had been applied. No anesthetic was taken for the extraction of the bullet, and no ill effects followed. The patient continued at work and there is no record of a psychosis at this time. He also continued to drink some after this, but less than formerly, until 1902. Since 1902 he has been a total abstainer.

For eight months, in 1898 and 1899, he had gleet, and in 1901 a mild attack of gout in the left foot. Sexual impotence had existed since some time prior to the suicidal attempt.

Onset of Symptoms.—Mental and nervous symptoms began in July, 1909. This was eleven years after the head injury and seven years after the patient had stopped drinking. The symptoms were of gradual onset and development. At first there were impaired digestion, a feeling of soreness all over, cold sweats, pains in the head and insomnia. Then supervened a loss of usual self-confidence and capacity for work, followed by a fear of being alone and other anxious fears. When alone he had impulses to jump from the window and a general panicky feeling. He lost 40 pounds in weight in six weeks. All attempts to do work only increased his symptoms and developed pains in the back and a feeling of oppression in the chest. At times he would weep and laugh hysterically. There was hardly a sustained or true melancholia, but more or less depression undoubtedly existed.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

Hospital Treatment.—In September, 1909, or two months after the head pains and other symptoms began, believing he was insane and fearing that he might again attempt suicide, he went of his own accord to a private hospital for the insane and remained there as a voluntary patient. In this asylum, he was much more comfortable. The records there have not been made accessible to us, but the patient said that one night the head pains were so severe he thought he was going to die. After remaining in the hospital for a time, and feeling better, he made several visits to his home. He found, however, that even a day's visit home developed his symptoms, both physical and mental, so unbearably, that he invariably hurried back to the hospital before the visit was completed. His longest visit home was less than a week. This was in December, 1909, three months after his admission. All of his symptoms had improved at the hospital, he said, but they returned with double force at home. His pains and oppressive feelings were greater at home and his fears intensified. The symptoms improved again as soon as he entered the asylum portals, all except his feelings of incapacity and inadequacy. This experience was duplicated at every visit. Thoughts of work would throw him into a panic. His family and friends could not understand his condition; and as his general bodily health seemed to be excellent, they repeatedly urged him to come out, and told him that his illness was purely imaginary. Shortly after his week's visit home in December, 1909, the head pains, which had been for five months occasional only, became more constant. They seemed to radiate upward and backward from the old injury. Also a sort of hissing sound in the right ear, which had existed since the injury (from concussion?) was more noticeable. He continued idly in the hospital for over a year, however, before he came to consult one of us (Atwood), in December, 1910.

Examination.—His weight then was 235 pounds; height, 5 feet, 7 inches. On examination there was a slight scar with depression of bone over the inferior frontal region well to the right. The cranial nerves were free except that there was slightly diminished hearing, right side. There were no objective neurologic symptoms; no paralysis, convulsions or anesthesia; no contraction of visual fields. Arteries were normal. There was a small umbilical hernia; also a small hydrocele. The heart's action was irregular (from smoking?). The patient had the habit of yawning and yawned frequently while in the office. A Wassermann-Noguchi test turned out to be negative. Mentally some delay and fatigability in the reactions existed, with moderate depression and at the same time a tendency to *Witzelsucht*. The symptoms previously mentioned were described by the patient clearly and in detail. He wanted to know, himself, whether there could be a physical basis for them in the old head injury. The head pains which he had had for fourteen months, at first occasionally, and for a year or longer more persistently, were described, as stated, as radiating especially upward and backward from the site of this injury. When the examination was completed, the patient decided that he would not remain in town with his family, even for lunch. He hastily said that he was not opposed to an operation; then hurried back to the asylum, fearing an accession of symptoms. Careful analysis of the urine and feces showed an absence of auto-infection factors.

After consultation with Dr. Taylor, an operation was decided on as offering a possible means of relief, prolonged hospital treatment having failed to produce any improvement. And while the private hospital staff strongly advised against operation, the patient himself said that there was something wrong inside his head and insisted on exploratory operation, inasmuch as his mind would never be settled until he knew definitely. Operation was performed by Dr. Taylor at the New York Hospital in January, 1911.

Postoperative History.—Since the operation, the patient has been free from pains, depression, psychic fears, feelings of incapacity, etc. His mental reactions soon became more prompt and there was soon less fatigability. The hissing in the ear disappeared gradually. Sexual power has returned. Patient was kept under occasional observation for several months and his general health looked after. He soon expressed

a desire to get back to work and secured his old position as a buyer ten weeks after the operation. Later he was given an interest in his firm.

That portion of the cortex involved in the old injury was in a so-called silent area of the brain, the middle and inferior frontal convolutions of the right side. There was apparently some softening of the brain tissue where compressed but no change in color or presence of scar tissue was discovered.

REPORT BY DR. TAYLOR

An osteoplastic flap, with beveled edges, involving the temporal ridge and outer part of the right frontal bone, and the anterior part of the squamous portion of the temporal bone, was turned down with the base pointing obliquely toward the zygoma. On the inner surface of this flap, just beneath the bullet wound in the outer table, was a circular depression of bone about 2 cm. in diameter and projecting toward the brain about 0.5 cm. The area of brain just beneath this depressed inner table felt distinctly softer than that which surrounded it, but when the dura was opened the brain was of normal color. Aspiration showed that no subcortical cyst was present.

The dura was closed with catgut. The bone flap was laid back in place; the muscle and fascia were sutured with chromic gut and the skin was closed with silk. No drainage was used.

Convalescence was uneventful. The wound healed by primary union. After a year's time the scar was scarcely visible.

14 East Sixtieth Street—115 West Fifty-Fifth Street.

ABSTRACT OF DISCUSSION

DR. L. PIERCE CLARK, New York: If one were confronted with the symptoms of this case, independent of the history of injury, one would at once place it in the category of anxiety and fear neuroses. I am not certain that the two elements, the brain injury and the neurotic symptoms, are associated even here. The main point is to recognize that the structural disease has been a provoking or determining agent and as such should be removed. Proper weight should be apportioned to both sides of the question. An organic and functional disease in one and the same case may coexist and yet be unrelated in causation to one association.

DR. TOM A. WILLIAMS, Washington, D. C.: One of the most potent factors in the induction of psychogenic abnormal reactions is physical disease. This case of Drs. Atwood and Taylor is a very clear illustration of the obtunding of the cerebral functions by injury, predisposing the patient to whatever psychopathic factors there were in his environment and to the manifestation of morbid reactions which were in fact psychogenic.

Another factor is that recently alluded to by Dr. Angell. Patients in the condition of toxicosis are prone to morbid psychic reactions, and the possibility of recurrence in psychogenic cases is often due to the physical state. I am not reactionary in this respect, because no one is more alive to the importance of psychogenic reactions than I am; but I would like to protest against the extreme view of immediately concluding that every psychogenic symptom must be attacked by analytic procedure until one has exhausted the physical factors, which are easier to remedy.

DR. ALBERT E. STERNE, Indianapolis: In any case in which a definite injury has been sustained, it is justifiable to investigate the site of injury. Conditions frequently arise in which an injury has been superimposed on a known psychogenic state. As I understand it, the injury in this case was caused by a bullet wound self-inflicted; prior to the injury there must have been some element of a psychopathic character, not necessarily that the man was insane, but that he was not of sound mind. There are other classes of cases which must be taken into consideration in an analysis of this kind. That this man carried a strong autosuggestive element through

the years intervening between injury and operation with the knowledge that he had tried to injure himself, and that he had inflicted damage, and that that alone could produce psychogenic impulses without anything else must also be admitted; that the removal of that chief element to which his introspective ideas had been turned through all these years, through operative measures, would be followed by relief, especially when no organic disease was found at operation, and where no cortical cyst existed, should not be cause for surprise. I usually puncture the lateral ventricle, especially where there is any evidence of tinnitus in the ear. The effect of the operation and the momentary drainage would undoubtedly be followed by a good psychic influence. Yet there are other cases of traumatic type in which this element is not so much in play. A man is injured; the question of a damage suit does not arise, the complaint of constant mental trouble and notably of headache is shown, and the question arises whether or not operation is advisable or justifiable. In such cases a careful analysis should be made; the serologic findings of the spinal fluid should be carefully gone into and the urine investigated. Not infrequently we find in those cases in which there has been head injury and in which the question of momentum is more important than the question of impact; the question of body weight in falling is of importance, and the so-called compression syndrome has followed, that the patients are not improved by operation because secondary cellular changes have occurred which cannot be benefited by operation. But in cases in which the psychic influence of the operation is important, and in which oftentimes there are psychic manifestations such as this case showed, benefit undoubtedly will be derived from the operation itself. I refer altogether to conditions arising remotely to injury and not to those immediately following traumatism. In the latter cases, I advocate careful investigation as to the extent of damage at the time of injury, if possible.

Dr. S. GROVER BURNETT, Kansas City, Mo.: Dr. Sterne refers to the patient's mental state prior to the injury.

I recently operated on a man who had been hit on the head with the blunt end of a scythe, causing a depressed, linear fracture of the skull. At the time I saw him he had been in an asylum for a year and had returned home, receiving no special care. His mental symptoms were those of a melancholy depression without the sadness. He had a profound loss of memory for language expression, both spoken and written. He presented no special physical symptoms except those referring to his writing and performing certain intellectual movements with the opposite foot; he had lost the memories for certain intellectual movements of the right foot. He could write from dictation and could copy, but he could not write of his own accord, so far as forming thought and putting it on paper was concerned. He had lost, in part, the memories of the mechanical expression essential to externalize his own thought in language spoken. He had lost the memories for expressing his thoughts in writing as well as the memories for all facial expressions of emotions, including the natural smile.

Dr. Mills has recently located the cortical center of the mechanical expression of the emotions in the right pre-rolandic area. In my case the trauma is in the left pre-rolandic area, in the posterior part of the first and second frontal convolutions of a right handed man whose difficulty was in arousing the educational memories necessary to put the muscles of expression into functional activity.

At the seat of the lesion we found a distinct depression. On opening the skull the bone formation was seen to be thin in the fracture line, but a thick depression on each side of the fracture line remained. Nature having absorbed the osseous substance in the direct line of fracture. The membranes were found to be massed and adherent; scar tissue had formed over the pre-rolandic area, over the posterior portion of the superior frontal and down onto the middle frontal convolution. The brain was pale and pulseless. After the adhesions were broken up the pulsation returned. There was some hemiplegia after the operation, but it soon disappeared. The patient is still in the sanatorium, but he has recovered his

memory for smiles; the blank putty-like, expressionless condition of the face has disappeared. He has recovered from the incomplete loss of memories for externalizing speech and the complete loss of memories for externalizing writing of his own composition. This man now talks well, smiles well and thinks with less effort; instead of saying "I cannot think," as was formerly the case, he thinks slowly, but methodically and with reasonable ease.

Dr. CHARLES E. ATWOOD, New York: Our patient was making \$5,000 a year as a buyer. He had not been insane at the time of his suicidal attempt, so far as I could ascertain. He was in active business at the time, but was drinking more than customarily. Immediately after learning that some private business matter had gone awry and being unnerved by the liquor, he attempted suicide. His attempt was apparently abortive; he did not fall to the ground; he was not unconscious; he walked to the hospital two blocks away for the removal of the bullet. There is no neuropathic history in his family on either side of the house. The mental symptoms for which the operation was done came on eleven years after the injury and seven years after he had stopped drinking. There was no toxic condition of the system that could be ascertained by the ordinary tests in common use. The effect of the operation itself we hoped would be beneficial, even if we found nothing. We tried to make as much of an impression in a suggestive way as we could as to the value of the operation. We deemed that a legitimate procedure. The responsibility of operation rested on Dr. Taylor and myself. We were opposed by the hospital authorities and the family thought the patient had nothing the matter with him. But in view of the fact that there undoubtedly were associated symptoms of psychic origin, we thought that these would be benefited by the suggestion of the operation and the subsequent suggestive treatment. The man had been in a lunatic asylum for a year and four months, and was content to remain there. When he went out for a day he hurried back. He was of no use to the community and his family was suffering. The operation brought about an immediate change. He never went back to the institution; he went directly home from the hospital and has remained there ever since.

Dr. ALFRED S. TAYLOR, New York: I should like to know why Dr. Sterne aspirates the lateral ventricle in every case in which the head is opened. In our case, the area of brain that lay immediately under the depressed bone was distinctly soft to the palpating finger. There was no evidence of change to the visual examination. I had an idea that we would find a cyst underneath that softened area, but that proved not to be the case. There was no evidence of increased intracranial pressure, and therefore it did not seem to me that an aspiration of the ventricle was desirable. I did not think we would get anything from it, considering the origin of the case and the fact that there had been no symptoms referred to ventricular distention.

It is desirable to do osteoplastic operations in this type of cases. The inner surface of the bone can be shaped very readily and the bone flap laid back so as to give proper protection to the membranes and brain substance itself. It seems to me somewhat of an error to remove the bone completely from depressions of this type and dispose of it, because so frequently adhesions between the membrane and the overlying soft tissues follow, which lead to further disturbances of one type or another.

Eugenics.—Eugenics broadly has to do with all measures that make for the improvement of conditions affecting the life of human beings. Race culture, the application of the laws of sanitation to the housing of the people, clean streets, destruction of disease-carrying insects, suppression of dust nuisances, the supply of pure water, clean milk and wholesome food, the protection of workers from the effects of dangerous callings, the securing proper hours of labor for children and women, the limitation of preventable diseases, notification, quarantine and segregation.—Harvey in *Journal of the Medical Society of New Jersey*.