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GASTRIC, SECRETORY AND OTHER CRISES
IN GENERAL PARESIS.

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The term "gastric crisis" has been applied to periodical attacks of pain at the epigastrium, associated with vomiting, headache, and sometimes diarrhœa occurring suddenly in the course of locomotor ataxia, without assignable exciting cause. The ejecta from the stomach are generally clear fluids free from any admixture of food; sometimes they contain bile and blood. In rare instances the gastric crisis precedes the development of locomotor ataxy, and is one of the first symptoms. More commonly, it is developed in the course of pronounced tabetic disease and is the sequel of other grave symptoms. How the crisis arises is still in dispute, and authorities are not agreed upon its pathogenesis. That it is a disturbance of function from defective innervation, consequent upon progressive disease of the spinal cord and medulla all agree, but whether the disordered function is due wholly to an irritation at the origin of the pneumogastric, or to a combined irritation of the pneumogastric and sympathetic, is still in dispute. The existence of pain and altered secretion would seem to lend countenance to the latter hypothesis. Laryngeal, intestinal, vesical, cardiac, genital and rectal crises of similar character and analogous origin have been described as occurring in the same disease. Secretory crises, pointing to grave disturbances in the sympathetic system are also common. As far as I can learn, however, from a careful examination of the literature of general paresis, no mention has ever been made of similar crises occurring in this disease. It is my purpose in this brief paper to call attention to the gastric and other crises of general paresis. To more fully illustrate the character of these crises among paretics, I will report two cases somewhat in detail.

CASE I.—J. M. V. H., at present under treatment at the Eastern Michigan Asylum, is forty years of age, a native of Michigan, and an industrious farmer. His father was a man of correct habits and highly respected, but eccentric, neurotic (a stammerer), and unsuccessful in his profession, which was that of a lawyer.

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His mother possessed a nervous organization, but is still living at an advanced age. The patient has always been peculiar and somewhat unsettled, being of a roving disposition, but neither intemperate nor licentious. After partially completing a college course, he relinquished study to enter the army during the late civil war, and served faithfully for about a year. After his discharge from the army he engaged in a variety of occupations in the west and northwest, and suffered considerably from exposure and hardship. On one occasion he received a blow from a club and sustained a severe injury upon the head which rendered him unconscious for several hours. This was followed by a period of excitement of eight days duration, from which he eventually recovered. On another occasion, from exposure to cold, he had facial paralysis with ptosis of the right eyelid and divergent strabismus of the right eye. The latter infirmity still persists notwithstanding operative procedures at the hands of an eminent oculist to overcome it. The strabismus is undoubtedly of central origin. Although an unremitting, almost intemperate worker, he has never been very successful in his undertakings. For a year prior to his admission he had been depressed physically and mentally; had lacked good business judgment, and had seemed more than usually unsettled. About a week previous to coming he suddenly developed delusions of great wealth. He contracted to purchase cattle in his immediate neighborhood at extravagant prices, and talked freely of spending \$100,000 per day, until he secured complete control of the cattle market. Upon admission he was found excessively noisy, loquacious, excited and full of business. His gait was markedly ataxic, the tendon and pupillary reflexes were abolished and the hand pressure diminished. He could not stand firmly with his eyes closed, and walking in the dark was impossible. He was wakeful at night. After the lapse of a week his noisy excitement and extravagant delusions had disappeared, but a state of great elation persisted for nearly two months. At the end of this time he displayed some depression, was extremely hyperæsthetic and suffered acutely from deranged sensations. He complained that sounds went through him "like a knife," and had violent headaches, "pins and needles" sensations in his limbs and a sense of "crawling all over." To prevent a complete loss of self-control he retired to bed and avoided all active exertion. He suffered severely from a sudden sense of constriction in his left side and an inability to expand his chest. The acute pain and sense of constriction in the side—the "hide

bound" feeling, as he expressed it—shifted to the left hip whenever he attempted to walk about. After a few days he had a gastric crisis, and vomited steadily for eighteen hours, notwithstanding remedies constantly administered to relieve the symptom. The attack was not due to any indiscretions or errors in diet, and no adequate exciting cause existed. The ejected matters were fluid and unmixed with any food, semi-digested or otherwise. When the vomiting ceased he was much less hyperæsthetic and the nervous storm seemed to have spent its strength. About a month later he had a similar gastric attack which was severe, but not as protracted as the former one. Shortly after, he began to have profuse perspirations at night which saturated both clothing and bedding. They were succeeded in their turn by paroxysms of profuse salivation, occurring regularly in the middle of the forenoon and during the early part of the night. At the first attack he was awakened from a sound slumber by the saliva welling up in his mouth and overflowing at the corners. The attacks lasted about an hour and the flow of saliva was so excessive as to fill a spittoon. During the following month he had a return of the former profuse perspirations, but gradually improved under the use of one-half drachm doses of fl. ext. ergot. Three months later they again recurred after slight exertion in walking. A few days ago he complained for several successive days of paroxysmal attacks of pain high up in the rectum, corresponding in location with the rectal crises mentioned by writers on locomotor ataxia. This patient still remains in the asylum. His mind is feeble and he is childish and lacking in endurance. His extravagant delusions have passed away. The ataxia is stationary, and he is now able to take long walks in the open air each day. His handwriting is not perceptibly changed, and he has no word-blindness.

CASE II.—W. J. A., age thirty-two, a railway conductor, of temperate parentage, and free from predisposition to insanity or nervous disease, was admitted to the Eastern Michigan Asylum in March, 1880. He had been an industrious, capable man, but intemperate and licentious. There was no history of syphilis. Four years previous to his admission he had a sunstroke, and afterwards showed peculiarities, but had been able to work up to the previous November. Upon admission he had predominant delusions of fear and apprehension. His pupils were unequal, and the right dilated; his speech drawling and his gait inco-ordinate. After a few days he began to soil his bed involuntarily at night.

At the end of two weeks he was excessively distressed under an impression that he was about to die, and his pupils became widely dilated, his pulse slow and his surface cold. Prompt stimulation relieved some of his symptoms, but he continued fearful of impending death. He declared, with groans and tears, that his body was melting away, his teeth gone, his penis destroyed, etc. On the tenth of April, about one month after admission, he had a gastric crisis, which is thus described in the medical notes: "After a forenoon, during which he seemed more than usually cheerful, and had been able to engage in games, while standing at the window conversing with his attendant, he suddenly exclaimed, 'I am dead,' and fell forward apparently lifeless. He was visited immediately, and but for respiration, which was regularly performed, no sign of life was present. He had no pulse; his face was waxy and expressionless; his eyes forcibly shut, an attempt to open them being unsuccessful, owing to a strong voluntary closure of the lids. The foot of his bed was elevated, and warm applications were made to the surface of the body. He could not be induced to swallow. He resisted an attempt to open his mouth, striking at those in attendance, and clenching his teeth firmly. His pulse slowly returned, beating at first twenty to thirty per minute. Stimulants were freely administered by the nasal method, until a disposition to swallow returned. From time to time his countenance became distorted from great pain, and he screamed and found relief by vomiting small quantities of a dark liquid. Later his bowels moved twice, the passages being dark, liquid, and without fecal odor. Stimulants seemed imperfectly appropriated by the stomach, and finally hypodermics of brandy were resorted to with immediate benefit. Subsequently one-eighth grain of sulphate of morphia was given every three hours. At two o'clock on the following morning, about fifteen hours after the commencement of the attack, he ceased to vomit and slept." There were subsequent attacks of a similar character, but none as severe as the one detailed. About ten days later he died suddenly in a paretic seizure.

In the first mentioned case there were gastric and rectal crises—also profuse salivation and perspiration. In the second a gastric crisis of extreme severity, abolishing the action of the heart, followed by vomiting and liquid stools. In reviewing the cases of general paresis, which have been under treatment at the Eastern Michigan Asylum, I find that other similar attacks are not wholly unknown. In three other cases there were salivary crises, charac-

terized by a sudden, causeless flow of saliva. In one of the cases the patient, a female, had delusions of great extravagance. She believed herself to be a powerful and important personage, one hundred years old. She had no special ataxia in her gait, but her speech was drawling, and at times almost unintelligible. At her best she "scanned" when talking. In writing she omitted words after the manner of male paretics. She had daily attacks of great mental dullness, accompanied by an excessive flow of saliva of comparatively brief duration. This condition followed a paretic seizure. In another case, also a female, there was a ravenous appetite, periods of noisy confusion, delusions of wealth, quivering of the lips, tremulousness of the tongue, a peculiar "stiffness" in the gait, and a loss of the fine lines of expression in the countenance. In this case there was, in addition to the salivary crises, at certain times a hypersecretion of urine, and an inability to control the sphincters of the bladder or bowels. Later in the disease there was retention of urine. She had periods of screaming, in consequence of severe paroxysms of pain in the rectum, evidently a rectal crisis. She died suddenly in a paretic seizure.

In two other cases there were vesical crises, characterized by pain in the region of the bladder, producing a condition of collapse, a profuse secretion of urine, and a total inability to void it. When the urine was subsequently drawn by the catheter it was bloody in both cases, but did not continue so, although the catheter needed to be used for a period of two or three days. In another case there were repeated genital crises, characterized by violent pain in the testicles, which caused the patient to utter frightful screams, and to injure the parts by pinching and bruising them until they were black and blue—evidently to quiet intense pain. I have never seen any examples of the laryngeal crises described by writers on locomotor ataxia. The pain crises of the latter disease also seem to be almost wholly absent in general paresis. I can not now recall a single case where the fulgurant pains in the calves of the legs were a prominent symptom. The same is true of cardiac pain. Profuse perspiration, both general and unilateral, are common symptoms, and are probably more frequently met with in general paresis than any other secretory crises.

The question now arises, in what classes of paretics are crises to be expected, and further is there any apparent connection between the degree, character and seat of the ataxia and any particular form of crisis? In a general way there would seem to be a connection between the degree of ataxia and the form of the crisis.

When a salivary or perspiratory crisis occurs alone, independent of any other crisis, ataxia is not generally a marked symptom. If however, gastric crises are associated with secretory crises, ataxic symptoms, in my experience, are a marked feature of the mental disease. In some instances of this sort, in fact, the ataxic symptoms are so prominent as to suggest that a general paresis has been grafted upon a pre-existing locomotor ataxia. The experience of every student of mental disease leads him to consider the relation between the two diseases as much more intimate than writers upon nervous diseases have acknowledged. In how many cases of senile or chronic dementia ataxic symptoms, bladder troubles and paralyzed sphincters are present, in which it is impossible to determine which set of symptoms had precedence. The alienist is prone to ascribe the ataxia to the mental defect, and the neurologist to regard the mental defect as the legitimate outcome of the slowly increasing degeneration of the spinal cord. Is it not highly probable that the mental defect and the ataxia have gone hand in hand and are manifestations of the same diseased process. So also of the relations of general paresis and locomotor ataxia. It is impossible to say where one ends and the other begins. The wide-reaching and complex relations of the pneumogastric with its sensory, motor, vaso-motor, inhibitory, excito-secretory and excito-motor functions would seem to suggest, *a priori*, that gastric crises are most liable to occur of any of the crises of paresis, and when occurring would affect the whole economy the most profoundly. In cases characterized by secretory crises alone, the amount of ataxia, except in speech, has not been great.

The treatment of these various crises may be dismissed in a few words. In the gastric crises dependence should be placed upon stimulants and morphia, hypodermically. The symptoms are urgent, and prompt action should be taken. Morphia sufficient to quiet the pain and vomiting, and brandy or ammonia enough to sustain the heart's action should be given at once. In the salivary crisis astringents can be used locally, like golden seal, tannin, tannin and glycerine, in connection with atropia or hyoscyamine. In profuse perspiration, ergot or ergotin hypodermically are of service. In the rectal and genital crises nothing will prove of any permanent benefit but some form of opium. In the vesical crises it is all-important to relieve the bladder with the catheter, as the vesical pain seems to promote a hypersecretion of urine, which in its turn incites the pain and the general prostration.

