

ESKRIDGE (J. T.)

TUMOR OF THE BRAIN.

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—BY—

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TUMOR OF THE BRAIN.

A CLINICAL LECTURE DELIVERED AT THE ARAPAHOE COUNTY
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Gentlemen:—I wish to call your attention to-day to this man who has been in the hospital three or four weeks, complaining, at the time of his admission, and since, of lameness in the right leg, complete paralysis of the right arm and almost total blindness of both eyes. I will make a systematic examination into his condition to show you the method and to demonstrate the necessity of it.

J. C., aet. 30, Scotland, farm laborer, came to Colorado two and one-half years ago and has been engaged in tending horses since that time. The paternal grandmother died of paralysis and the paternal uncle is now suffering with paralysis which effects the muscles of the throat. No history of other nervous troubles in the family. No history of alcoholism in ancestors. Patient's health in youth and childhood was good. He lived in Scotland up to his twenty-seventh year. He occasionally indulged in alcohol, but as a rule only on Saturday nights, when he would become more or less intoxicated. Since he has been in this country he claims almost total abstinence. There is no history of any trouble up to his twenty-second year, when, after drinking the night before, he observed while engaged in plowing in the field, that the right hand and arm began to shake. He stopped his team but immediately fell over in a convulsive fit. He was told that he remained unconscious for about an hour. He observed both before and after



the occurrence of the fit that when he drank alcohol it seemed to effect his head unpleasantly. He thinks that he did not suffer from headache at the time of the first convulsion. Following this attack he remained well for about two months, when a second convulsion occurred, the same in character as the first, but it had not been preceded by drinking the night before. Two months after the second, he had a third attack, when he began taking medicine and seems to have been entirely cured. Some three or four years ago he contracted a hard chancre, but this was not followed by secondary symptoms. With the exception of this he remained well from 1883, until July, 1890, when he was kicked on the right side of the head by a horse and rendered unconscious. The scalp was cut to the bone, but the latter apparently was not fractured. He does not seem to have suffered much at the time, as he returned to his work the latter part of the same day the accident occurred. He says the blow on the head did not give rise to any headache. He remained well from July, 1890, until January, 1891, when, apparently after taking a cold, what was known at the time as "la grippe," he suffered for a week with severe headache. After this he remained well until the first of August of the present year, when, without any apparent cause, he noticed after the least effort made with the right hand or arm that this arm would be tremulous for several minutes. This condition continued for several days, followed by weakness of the hand and arm. It is just possible that this limb was affected before he observed it as he is left handed. A few days after first observing the affection of the right hand he suffered with severe headache, lasting two or three days and attended by vomiting. Five days subsequently, another severe headache with vomiting began and lasted several days. About this time he noticed the right leg and foot were getting weak. From about the middle of August, up to the time of his entrance into the

hospital, Oct. 10, 1891, he suffered with more or less constant, dull, heavy pain in head with occasional periods of exacerbations of the pain. In the early part of October, about one week before he entered the hospital, the muscles of the right side of the body became stiff and rigid and remained so for a few minutes, but did not lose consciousness.

Status præsens.—He can scarcely stand or walk without assistance on account of weakness of the right leg. The right arm is completely paralyzed, the right leg partially; there is a slight paretic condition of the muscles of the right side of the face. And the tongue deviates to the right slightly in protrusion. Eyelids are both closed at will. Knee-jerks; right, greatly exaggerated; left, slightly increased. Ankle clonus; right, present; left, absent. Planter reflexes; absent. The right foot can be flexed and extended at will when he is lying down, and the muscles of the lower portion of the leg seem to be less paralyzed than those of the hip and thigh. Cremaster reflexes; right, absent; left, present and apparently exaggerated. Inguinal reflexes; right, absent; left, present. Epigastric reflexes; right, absent; left, present. So that the superficial reflexes appear to be present throughout the left and absent throughout the right side. There seems to be almost no power of motion in the right hand, but the movements made by some of the fingers follow several seconds after he endeavors to move the fingers. The right deltoid and pectoralis major muscles are completely paralyzed. The latter muscle is paralyzed for all movements, both associated and single. Deep reflexes of the right arm are greatly exaggerated. The pupils are widely dilated and respond imperfectly to light. Tactile sense on the right foot and leg is blunted but not absent, but on the right hand and arm it is completely abolished. On the right side of the chest it is almost destroyed. On the face it is greatly blurred and almost completely absent, except

in spots, up to the median line. On the forehead it is absent up to the median line. Pain sense is present but slightly lessened on the right foot and leg, somewhat blurred on the right side of the trunk, absent on the right arm and hand, and blurred on the right side of face and head. Temperature sense is blurred or abolished throughout the right side. Muscular sense is nearly abolished throughout the right side. Senses of taste, smell and hearing are all present and nearly normal. Vision: The field of vision is very narrow so that he can only see objects immediately in front of his eyes. He is unable to count fingers at a few inches distance from his eyes. Since he has been in the hospital he has suffered considerably with headache. The pain has come on most commonly in the morning, and at times it is quite severe, requiring morphia and antipyrine for its relief.

Let us inquire into the seat and nature of the lesion from which this man is suffering. Is the lesion in the spinal cord or brain? The double choke-disc, the affection of sensation on the side of the face and head up to the median line, enable us to exclude lesion of the nerves or cord. In inquiring into the character of the brain lesion it is necessary for us to bear in mind a hemorrhage, embolism, thrombus, abscess, or a growth might give rise to symptoms more or less closely resembling those found in the patient before us. There are a few points of difference in the history and mode of onset of these various brain lesions, which I think will enable us to make a diagnosis by exclusion. The age of the man, if he had not had syphilis, would be against hemorrhage, but as he has a syphilitic history, his age plays no part in the diagnosis. Hemorrhage into the brain substance, whether it occurs in a syphilitic subject or not, is sudden in its onset, the paralysis reaches its height in a few minutes or at the most a few hours. With the occurrence of the hemorrhage there is a period of unconsciousness, and the severity of the symptoms

as a rule, lessens after the first shock of the hemorrhage; so that with the history of tremor in the hand and arm, followed by gradual weakness of the muscles affected, and attended with severe headaches, with a gradual increase of symptoms over a period of two or three months, and paralysis extending over the entire arm and slightly affecting the leg and face, enable us in the present instance to exclude hemorrhage. For the same reason we can exclude embolism and thrombus. The most important symptoms in the majority of cases of abscess of the brain is an association of cerebral disturbances in persons suffering with disease in some other portion of the body capable of giving rise to abscess of the brain. The most important of the latter are chronic ear disease, especially one attended with suppuration, or a suppurative process in some other portion of the body, as in the lungs. Injuries, especially of the brain, are sometimes followed by cerebral abscess. Frequently in the abscess of the brain there is a shorter or longer period of cerebral irritation followed by acute brain disturbances, such as we get in a case of apoplexy, attended with fevers and rigors. In the present instance it seems to me abscess may be excluded. We have left then a cerebral growth to account for the symptoms from which our patient is suffering. To study the case intelligently, it is necessary for us now to take up the most prominent symptoms of tumor of the brain and compare them with those with which our patient is suffering. These symptoms for convenience sake may be divided into general or diffuse, which more or less point to cerebral disturbances without indicating any particular region of the brain; mixed, which point to cerebral disturbances and at the same time indicate, to a greater or less extent, irritation in some particular region of the brain, and the localizing or focal symptoms, which enable us to determine with more or less accuracy the portion of the brain affected. This division is not entirely reliable, as the general

symptoms at times may have a localizing value and those of a localizing nature may in other cases result from general cerebral irritation. One of the most common symptoms of brain tumor is headache. It is absent throughout the disease only in very rare cases. It is usually more or less constant with paroxysms and remissions, and in some instances there are periods of days or weeks with entire intermissions. The character is very variable. It may be by dull or acute, and sometimes patients complain of it as stabbing and boring, and not infrequently it is so severe as to materially interfere with sleep. It is increased by whatever interferes with the cerebral circulation; the movements of the patient, muscular efforts of any kind, as fits of coughing, etc. Unfortunately it does not always point to the seat of the disease. It may be general, or located in front, at the back, or one or both sides of the head. In some instances the seat of the pain is limited to a very small area. It does have at times a more or less localizing value. When the growth is situated near the surface, springing from the membranes or directly or indirectly irritating them in some particular spot, the location of the pain usually points to the seat of the disease. With a growth situated in the centrum ovale, the pain is often frontal. Subtentorium tumors are usually attended with pain in the occipital region, extending to the back of the neck, with tenderness over the posterior cervical muscles and more or less retraction of the head. Percussion over the head in superficial cerebral tumors elicits tenderness in the region of the growth while none is found over any other portion of the head. Optic neuritis is found in a large number of brain growth. According to some authors it is found in four-fifths, at least, of all such cases. It is less frequent when the growth is over the convex surface of the brain, involving the membranes, than when the brain substance is the seat of the tumor. Many theories have been advanced to explain the devel-

opment of optic neuritis and choke-disc, and it is probable that they all contain some element of truth. Mental disturbance is found most commonly in those cases where the circulation of the brain is most affected. In some, occasional delirium appears early and delusions may be manifested for some minutes each time a patient awakes from sleep. In the majority of cases, however, there are no great mental disturbances early in the disease, but later, some develop delusions of suspicion and persecution, and seem to be in a constant condition of agitation. In a great number, the mind is fairly well retained until the latter stage of the disease, when there is a gradual blurring of the intellect, an obtunding of the mind, with a tendency to a semi-comatose condition.

Hysterical manifestations are occasionally met with in the history of tumor of the brain. They seem to be more common in the female, and so far, I have only found them where the tumor is situated in the posterior portion of the brain, especially in the region of the cerebellum. These manifestations occur in persons who have a natural neurotic tendency, and have been mistaken for cases of hysteria. Fortunately, in all the cases that I have seen, an ophthalmoscopic examination has revealed intracranial lesions, preventing mistakes in diagnosis.

Vomiting is not an infrequent symptom and may occur with growths in any portion of the brain, but it is most commonly met with in tumors of the medulla, middle lobe of the cerebellum and in regions of the corpora quadrigemina. In cerebellar tumors, dizziness, optic neuritis, vomiting and headache frequently constitute the only symptoms of brain disturbance for a considerable length of time. Giddiness is a frequent symptom in tumors of the posterior portion of the brain, especially in the region of the pons, and in the middle lobe of the cerebellum, and is sometimes manifested whether the patient is lying or standing.

Local spasms, paresis and paralysis, have considerable significance, and greatly aid in localizing the seat of lesion. They are commonly met with when the Rolandic region is involved, and may affect at first, one side of the face, some of the muscles of the hand and arm, or they may begin in the muscles of one foot, especially of the great toe; so that mono-spasms, mono-paresis and mono-paralysis, affecting one group of muscles at first, and involving the other muscles whose brain centres are adjacent to those first affected, enable the neurologist not only to localize the initial lesion, but the direction, course and progress of the disease. If the face is first involved, it is likely that in brain tumors of the cortex, the hand or arm centres will be affected before those of the legs or feet; and where the initial lesion affects the muscles of the feet or legs, the hand and arm are involved before the face. When there is an hemianæsthesia affecting one side of the body up to the median line, it points to lesion in the sub-thalamic region which not infrequently affects the special senses of the anæsthetic side.

Having diagnosed tumor of the brain, it is necessary next to determine its location. Without going into an elaborate discussion of the localizing symptoms of brain lesion, let it suffice to-day to say that the hemiplegia with the hemianæsthesia, involving the entire right side of the body, points in this case to a lesion of the left sub-thalamic region, affecting the posterior portion of the internal capsule. After localizing the tumor we next inquire into its probable nature. Is it a sarcoma, glioma, carcinoma, tubercular or syphilitic growth? The age of the patient, the absence of the history of cancer in the family, or of a morbid growth in any other portion of the body, would enable us to exclude the probability of cancer. For a like reason we can exclude a tubercular nodule. Sarcoma and glioma may occur at almost any time of life and are not infrequently found in persons about the age of

our patient. The history of syphilis, and the probable location of the lesion in the sub-thalamic portion of the brain, not an infrequent site in syphilitic growths, justify us at this stage of the disease in treating our patient for syphilis.

The treatment of brain tumors may be divided into curative and palliative. The curative may be divided into surgical and medical. In the vast majority of cases, brain tumors are not situated in regions of the brain accessible for surgical interference. In no case is such a procedure justifiable until a thorough course of medicine to get rid of the growth has been tried. In the present instance, should medicine fail, the seat of the lesion would preclude any probable good from surgical interference. Since he has been in the hospital he has been on anti-syphilitic treatment and has improved in some respects. This treatment to be effectual must be heroic. He was given to commence with, twenty grains of potassium iodide, largely diluted thrice daily, and the dose has been increased five grains each day, until now he is taking nearly three hundred grains of the salt daily. Besides inunctions of blue ointment have been used, and in addition to this, one-sixteenth of a grain of corrosive sublimate has been given three times daily. The treatment will be pushed to the point of toleration and there maintained until the patient's symptoms decidedly improve, or until after a prolonged and fruitless effort we shall find that no hope is to be entertained from anti-syphilitic treatment.

