THE UNCERTAINTY OF CEREBRAL LOCALIZATION WITH REFERENCE TO OPERATION
ESPECIALLY IN CONNECTION WITH
GROWTHS IN SILENT REGIONS
WITH INVASION SYMPTOMS.

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(ABSTRACT.)

The accurate localization of a cerebral growth is never easy, and it should always be borne in mind that there are many cases in which tumors of the mid brain give rise to symptoms, which closely resemble those of a growth in the motor area. Even in cases which have been carefully studied for a long time, no tumor has been discovered on operation, although after death the growth has been found deep seated. Growths, which are most likely to cause errors of diagnosis are those, which begin in silent regions, like the frontal lobe, for example, and which encroach gradually upon the motor area. The writer referred to the statistics collected by Starr. Up to 1896 there were 162 cases, in which the operation of trephining was done for brain tumor; of these cases the tumor was successfully removed, and the patient recovered in 72, and 48 cases, that is in about 30%, no tumor was found at the operation. In 35 patients the tumor was successfully located and removed, but the patient died. Out of several hundred cases of brain tumor, which have been studied post mortem by different observers, it was estimated, that but 7% could have been successfully removed had operations been attempted before death.

The writer called attention to the great improvement in the results in brain surgery. In the past three years a much greater percentage of cases have recovered and this is probably owing to the fact that the operations have been done by more skilled surgeons. The writer quoted two cases, which illustrated the difficulty of locat-

ing brain tumors, even when apparently distinct focal symptoms were present. CASE I.—E. M. Male. Age 26 years. A printer by occupation. No history of syphilis or traumatism. When 25 years of age he had a convulsion without any assignable cause. The attack was general. After this he had no seizures for nine months, when he had an attack similar to the first. Since this time the attacks have changed in character and have recurred at various intervals, from several in a day to one in three months. The attacks when he first came under observation were as follows:

The primary movement consists in twitching of the left angle of the mouth and a sense as if the face were being drawn towards the ear. The left arm is then drawn up, and occasionally in an attack the legs are flexed. There is no aura preceding the attack, and there is no loss of consciousness. The eyes were examined but with negative results. The patient's general health was good, the memory was preserved and there was no paralysis of any part of the body. The patient continued under observation until his death in 1896. His condition remained about the same for three years except that the attacks became rather less frequent. He continued at work, but gave up his trade for that of out door work, and he attributed his improvement largely to the more healthy life that he was leading. In January, 1893, he began to complain of severe pain in head, situated over the left brow, and in the vertex.

In March of this year it was found that optic neuritis was present. In spite of potassium iodide, the pain persisted with great severity, and the optic neuritis increased. It was therefore decided to trephine. The operation was done by Dr. Keen and a large opening was made in the skull over the face center on the right side. The brain bulged immediately, showing great pressure, but careful probing failed to reveal the growth. The patient recovered speedily from the operation.

Here was a case, in which the symptoms plainly pointed to a cortical lesion, but although it was evident that there was a deep-seated growth, none could be found at the operation. The operation, however, afforded great relief to the symptoms. The pain subsided and the vision markedly improved. At the end of a year there was recurrence of pain, and optic atrophy took place. The attacks became again more frequent, but were confined to twitching of the face.

In April, 1896, owing to the constancy of severe pain, it was decided to re-open the skull at the point of the original trephine opening. At this operation a well defined tumor presented itself, but owing to the excessive hemorrhages it was not possible to make any attempt at removal.

On June 5, 1896, the scalp was again opened and a portion of the growth as large as a small hen's egg, was removed. The mass sprung from the frontal lobe and extended to the fissure of Rolando. The patient experienced relief from pain, but there was complete left hemiplegia following the operation, and there was gradual failure of strength. The patient died July 3d. No autopsy was made.

CASE II.—P. A. Age 57 years. Male. Single. Denies syphilis. Temperate in his habits, says that he had good health until 7 years ago. Had lived in the West in mining regions, and had been in a good many brawls, and once received a severe blow on the head. Seven years ago, without warning, began to have severe convulsive seizures. These involved the right side alone. There was loss of consciousness during the attack. In the intervals of the attacks he had frequently obscure sensations in the right arm, which he believed to be mild attacks. There was a perception of the movements in the right side before loss of consciousness. None of the attacks was followed by loss of power. The last severe attack occurred in April, 1895; since this, he has had occasional vague sensations suggestive of the attacks, but none for past two months.

About December 1st, 1895, he observed progressive weakness of the right upper extremity. Six or eight weeks later the right leg began to grow weak. On examination, February 7th, 1896, there was marked left hemiplegia; and the face was drawn to the right. There was no aphasia. Knee jerks increased. Sensation preserved. Eyes examined by Dr. de Schweinitz, and the fundus was found normal. The symptoms pointed to a cortical lesion, which was at first probably irritative, and later became destructive. It was decided to trephine over left motor area. On exposing the cortex it was not possible to demonstrate the presence of a tumor. The patient suffered no disadvantage from the operation, but no improvement took place. He grew progressively worse, and died 54 days after the operation. At the autopsy a tumor was found situated in the left frontal lobe. It was

superficial, involving the cortex of the frontal lobe and dipped down into the gray matter and extended to the motor area. To the unaided eye the growth did not appear to involve the motor area. The brain was placed in Müller's Fluid for hardening for further examination.

The post mortem in this case shows that even had the trephine opening been made directly over the growth, it could not have been removed on account of its having infiltrated the brain tissue. The symptoms during life were evidently the result of the proximity of the growth to the motor area.

Such a case warns us to be thoroughly careful in studying in detail every symptom before deciding upon an operation, or at any rate before venturing to make positive diagnosis as to the location of the growth, and should also make us cautious as to the prognosis given in such a case. These cases should not discourage us from operative interference, because they illustrate the small risk attendant upon such operations, and also the relief, which is afforded to urgent symptoms, even when the growth has not been removed.