A CEREBELLAR TUMOR; OPERATION; RECOVERY.*

BY FRANK R. FRY, A.M., M.D.,

OF ST. LOUIS.

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM, MEDICAL DEPARTMENT OF
WASHINGTON UNIVERSITY, ST. LOUIS.

H. A., journalist, aged 39. I first saw him January 20, 1902, in consultation with Dr. E. M. Nelson, of St. Louis. After a second examination a few days later, I announced my opinion that there was a tumor of the cerebellum on the right side, and that an operation was the only chance—and that, probably, a very poor one.

The patient had meantime told me that Dr. Archibald Church, of Chicago, had made the same diagnosis fifteen months previously. I communicated with Dr. Church, who kindly sent me his notes. They were made over a year prior to mine and I shall present them first, as follows:

"When I saw him in October, 1900, I got substantially the following facts: He had a grandfather on the paternal side who was arthritic, and a brother had migraine, otherwise the family is free from significant factors. The personal history is also practically negative. He stated that in July, 1899, in Manila, he noted a tendency to go to the left. A few days before that he had been exposed to the sun with some general symptoms of feeling chilly, etc. He took quinine and a long sleep and was all right again the same day. On his return voyage of 60 days he was troubled with frequent vomiting in the morning, not attended by nausea, and several times before I saw him the vomiting had been repeated.

"There was twitching in the fingers of the right hand and some stiffness, apparently a muscular over-tone. This rigidity also affected the right face and both limbs on that side. He was ataxic with a tendency to move to the left, due, as I suppose, to the rigidity on the right side. The right ear was almost absolutely deaf.

*Read by title at the meeting of the American Neurological Association, May 12, 13 and 14, 1903.

He complained of throbbing in the back of his head. Sensation was normal. His gait showed a drunken stagger with a little tendency to go to the left. His handwriting was cramped with a tendency to spasm in the right hand. There was ataxia in all four extremities. The reflexes were all exaggerated and on the right side a little more than on the left. Pupils were normal. At times he had vertigo on turning his head sharply in any direction. Dr. Wm. A. Mann, reported that on the right side the watch was not heard on close contact and that bone conduction was reduced. On the left side the hearing was 30—50, the air conduction greater than bone conduction. His eyes showed, right eye, 20—20, left eye, 20—20. The perimeter charts were practically normal but the disks showed swelling, and in the left a slight hemorrhage at the upper edge of the disk. Though the swelling was slight, Dr. Mann thought it was pathological. The muscles of the eyes were working in a jerky way, yet upon effort balanced well. In other words, there was a tendency to nystagmus. I made a diagnosis of cerebellar tumor. Subsequently he was given mercury, and especially iodide, in large doses, but without benefit as far as I can learn."

The notes of my examination correspond so nearly with the above that it will not be necessary to repeat them. It will be more satisfactory to note the slight changes which had occurred between Dr. Church's observation and mine.

The gait was still a "drunken stagger" with a spastic element added; the stiffness and jerkiness being more evident in the right leg. Locomotion had become so difficult that there was little inclination to get about. The ataxia was much more pronounced in the right hand and arm than on the left side. Writing was practically impossible. The tendon-jerks were somewhat more plus on the right side; yet a difference in muscular power between the two sides was difficult to demonstrate at any point. The ataxia, however, was plainly more pronounced on the right side, including the face.

The only disturbance of general sensibility was in the distribution of the right fifth nerve. He complained of unpleasant but not intense paresthesia over the whole right side of the face and inside the mouth, "like it were lined with a thick skin." There

was a good deal of obtundity to temperature and to pin-sticks on the right, as compared with the left side of the face. This was more pronounced under the eye and near the margins of the lips than elsewhere. There was no pain or hyperesthesia.

He was totally deaf in the right ear, and there was no tinnitus on either side.

On March 22, 1902, I received from Dr. M. H. Post, the following report of his examination of the eyes: "Without correction of his visual defects, vision in the right eye 12—24; in the left, 12—24. With the plus glasses which he wears, vision in the right eye, 12—24; in the left, 20—19. Double images due to divergence.

"The ophthalmoscope gave both retinæ edematous. The swelling in the disc of the left eye is about $2\frac{1}{2}$ m.m.; in the right possibly 2 m.m. There are minute hemorrhages on the discs, but I did not find any in the retinæ. The examination was not made in a 'dark-room' and was therefore difficult."

The patient informed me that after seeing Dr. Church, he had taken a good deal of iodide, but had finally discontinued it. In the last three or four months prior to my first examination he stated that he had been feeling generally better, especially he had had less severe vertigo, less diplopia, less fulness and other uncomfortable feeling about the head. But all along there had been more or less of a tendency to these head attacks, with occasional nausea and vomiting, followed by more or less physical and mental lassitude and depression.

Mentally there was no deterioration. The patient fully understood his plight and finally decided to try an operation. I had told him the chances were small. Dr. Church wrote: "In view of the long history of the case, the apparent slow growth of the tumor and its probable firmness, I would advise an operation. By the involvement of the right ear, however, I am led to fear that it is situated in a desperate location."

Dr. H. G. Mudd operated March 25. The opening in the skull had an average diameter of about two inches. Before the dura was incised, Dr. Mudd and myself imagined we could detect an unusual resistance or firmness, in pressing toward the median line. After incising the dura and palpating carefully, we felt quite pos-

itive that deep in the substance of the cerebellum there was circumscribed firmness. The cerebellum was incised and gently separated until the tumor was plainly visible, having a smooth appearance and grayish tinge which distinguished it from the surrounding brain substance. The operator introduced his finger (left index), and (with the right hand) a loop-end curette, and gently grasping the tumor between them, lifted it out. The only attachments were some frail, soft fibers, offering no resistance. The surrounding tissue was carefully explored and nothing else found.

The tumor was the size of a sparrow's egg and quite firm. Dr. Sidney Schwab, who kindly examined it, pronounced it a conglomerate tubercular growth.

The record from the time of the operation until a month later contains nothing of special interest. The patient protested that the right side of the face and mouth felt much better, that he was conscious of improvement even if we could not scientifically demonstrate it.

May 25, (two months after the operation), I made the following notes: Considerable anesthesia of right conjunctiva as compared with left. Some obtundity of sensibility in all portions of right side of face; very little if any different from what it was before the operation. Patient, however, is positive in his statement that both the face and inside of mouth feel better. Speech and locomotion are better and improving, and he has better control over the right arm and hand movements. The bulging at the site of operation is steadily increasing in size and sensitiveness. Pressure upon it produces the following phenomena: pain in the right temporal region, with suffusion and lachrimation of the right eye, general headache, vertigo, confusion. In attempting a more sustained pressure with my hand cupped to cover the whole of the bulging mass, the above symptoms were increased to a very disagreeable extent. The increased tension in the temporal artery was very visible, the tears running, the eye red; the general appearance of the patient resembling exactly a beginning attack of ophthalmic migraine.

I have not seen the patient for ten months. In a letter written April 6, 1903, he says:—

"I wish you could judge my physical condition instead of my-

self, but I will tell you as near as I can. The lump on the back of my head is larger, more prominent, and reaches farther down on the neck. My hand, arm and leg (right side) are jerky to a considerable extent. The right ear is as deaf as ever. The feeling is coming back on that side of my face. I can eat only on the left side and my teeth are wearing out. I go to my work every day, solicit my own advertising and commercial work, do all the writing and managing of my paper and I am as hearty as a harvester, though I weigh but 135 pounds."

The hernia which so unfortunately marred this case occurred in spite of our best efforts to prevent it. Supports were carefully adjusted and the patient wore them until he could no longer tolerate them.

Believing that the tumor was in a deep and "desperate" location, we felt that only a large opening would furnish opportunity for sufficient exploration and manipulation. Practically we found the opening none too large for the work that had to be done, although it fortunately proved to be easier than we had anticipated. We found no precedent for attempting an osteoplastic flap in this region. In fact, all the prominent authorities regard it as impracticable. Dr. Mudd, however, before operating on this case made some trials on the cadaver, which, as we expected, gave us no encouragement.

In a recent case, Dr. Mudd resorted to the following expedient. He had made an opening almost as large as in the case just described (i. e. almost two inches in average diameter). He had prepared beforehand, a thin silver plate with numerous perforations. After sewing the dura, he trimmed the plate to fit into the opening so that the edges of it would slip under the edge of the bone, shaping it carefully and finally springing it into place. It seemed to support the dura very well, and to be held nicely in place between the dura and the edge of the bone.

Six weeks later we made a post-mortem examination and found the plate *in situ* and the tissue above it in such condition as to lead us to believe that it will be a reliable method of closing openings in the skull when osteoplastic flaps cannot be made. I hope Dr. Mudd will soon describe the procedure in greater detail.