A COMPLICATED CEREBRAL CASE WITH PATHOLOGICAL FINDINGS.*

BY CULLEN F. WELTY, M. D., SAN FRANCISCO.

In a case sent to the City and County Hospital, with a diagnosis of intra-cranial tumor, the following findings were reported: Pupils react to light and accommodation. External rectus of the right eye, immobile. Paralysis of the right side of the face. Hearing not good in the right ear. In the mouth, a soft fluctuating mass.

At the request of Dr. Ryfkogel, I saw the case and elicited the following: Patient had always been in good health until four months ago, when he began to have pain in the right side of the head, and some frontal headache; at the same time he noted that he had a discharge of pus from the right nostril. The headache was increasing somewhat in severity. Two months ago he was repeatedly operated upon by the intra-nasal route without relief. Three weeks ago, the antrum of Highmore on this side was opened by way of the canine fossa. Following this operation, all of the symptoms have apparently been aggravated. One month ago, a swelling appeared in the right side of the throat. The frontal pain and headache on this side of the head had increased very much. During the last week there was pain in the ear, and the hearing was not as good as usual; also some pain back of the ear, and pain over the whole side of the head.

Examination: Paralysis of the external rectus muscle of the eye. Choked disc of this side and facial paralysis.

Ear examination: Paralysis of the facial nerve. Patient did not know but thought that of late the eye on this side had a tendency to become inflamed. Some tenderness over the whole side of the head. More tender over the mastoid and specially over the tip. No apparent increase of surface-temperature in comparison with the other mastoid region. The drum membrane was dark-reddish and bulging to such an extent that the land-marks were obliterated. There was bulging of the posterior superior wall to such an extent that it partly occluded the drum membrane. The patient did not hear as well as might be expected from the appearance of the drum membrane.

*Read before the meeting of the San Francisco Medical Society, February 9, 1909.

Nasal examination: R. S. Deviation of the septum to this side to such an extent, that the middle turbinate could not be seen at all. The inferior turbinate pressed against the septum and was adherent to it. The nose was full of pus, and because of the malformation, the origin of it could not be demonstrated. There was a discharging fistula from the original operation on the canine fossa; so it could be assumed that the pus was still present in the antrum, and because of the increase of the frontal headache, it was natural to suppose that this was due to pus retention, besides being painful to pressure. It was assumed that the frontal sinus was involved because of pain induced by pressure on the inner orbital wall. No illumination tests, or X-ray photographs secured.

Nose: L. S. Normal. Not sensitive to pressure about the eye.

Mouth: A tumor, hard, the consistency of bone. Apparently coming in the soft palate. In other words, the mucous membrane of the uvula surrounded this mass entirely. The tumor could be traced to the vault of the naso-pharynx, filling the right side completely, and must of necessity have encroached on the Eustachian tube of this side.

Ear diagnosis: From the fact that the patient had a facial paralysis, impaired hearing, bulging of the posterior superior meatal wall, redness and bulging of the membrane, painful mastoid, especially over the tip, my diagnosis of acute mastoiditis with pus retention was quite natural. My explanation of choked disc and paralysis of the external oblique, I accounted for in the following way, namely, ethmoidal suppuration and retention with pressure.

At this time I did not attach any importance to the tumor-mass that I found in the naso-pharynx for the simple reason that I could not account for it. I made an incision into the mass and found it was bone. I tried to secure a specimen for examination but was unsuccessful.

Operative findings: Mastoid. Large pneumatic mastoid which was filled with reddish-brown blood the consistency of chocolate. I had never seen such a condition before. Politzer describes such a condition as hemorrhagic mastoiditis, without making explanation.

To my surprise, none of the symptoms changed, and for four days, he continued to have facial paralysis and pain over the whole side of the head. Pain in the immediate region of the mastoid was improved. Ear dry of secretion. Posterior wound, healthy. Up to this time, I had not verified my examination by the tuning-fork.

Tuning-fork examination revealed an entirely different condition. Weber to good ear, which should have been to diseased ear; so it

must be assumed that the patient had either a brain abscess, with an infection by way of the semi-circular canals, because the hearing of this ear was entirely destroyed; or a brain abscess from the frontal sinus empyema, with great preference to the latter, and deafness accounted for by the pressure on the auditory nerve.

By the tuning-fork examination, I determined that the labyrinth was destroyed. Until recently we had no way of differentiation between a destroyed labyrinth and a mass pressing on the auditory nerve in such a way as to destroy its function. During recent months, a test has been found, that will probably differentiate a suppurative condition of the labyrinth, regardless of pressure on the auditory nerve. This would have been a negative finding and would have suggested a different way of communication.

You will realize that I have not spoken of intra-cranial tumor. While a brain abscess will give you exactly the same symptoms as a brain tumor, we must infer that practically all cases of cerebral complication associated with pus from the nose or ear, are directly dependent upon the same. It rarely happens otherwise, in fact, I do not recall reading of such an instance.

As has been stated before, the picture had somewhat changed, and it seemed to be a brain abscess originating from the ethmoidal or sphenoidal sinus. An abscess situated at such a place would paralyze the external oblique, besides producing a choked disc on the same side. While this is all true, there are still some things to be explained. The abscess must be in front of the optic commissure, or a similar condition would show in the other eye. A tumor-mass that made its appearance in the naso-pharynx might produce paralysis of the external oblique and choked disc. If large enough, through counter-pressure, it might produce paralysis of the facial and auditory.

From the facts as stated before, we must conclude that the man had a brain abscess situated in the region of the tempero-sphenoidal lobe, and that the infection was from one of the nasal accessory sinuses, probably the posterior ethmoidal or sphenoid. This would account for all the different manifestations as it would make its appearance in practically the same place as the tumor-mass before mentioned. It was my belief that the tumor of the naso-pharynx was in no way connected with the cerebral condition.

The patient grew weaker daily and complained of increasing pain. He would not allow another operation and died in the course of a week.

Pathologic findings: Doctor Ryfkogel furnished me with the following from memory, the exact data having been lost in the fire of 1906:

A sarcomatous tumor-mass about the size of a fist occupying almost the whole of the middle fossa was found which was a continuation of the mass found in the naso-pharynx. It completely destroyed the sphenoidal sinus and the posterior ethmoidal sinus; the anterior ethmoidal cells, the frontal sinus, and the antrum of Highmore contained pus; incipient meningitis in the region of the frontal sinus and ethmoidal cells. The tumor-mass was so large that it would account for all the nerve lesions. However, it is extremely rare to find such a large tumor that has not produced a choked disc of both eyes, as it must if it press on the nerve.

Cerebral complications are difficult to diagnose, and with clear, well-defined symptoms and lesions pointing to definite pathological conditions, mistakes can be made. If cerebral complication develops during the course of, or following an ear, or nasal suppuration, we are doubly justified in assuming that the origin was from the primary infection, rather than from an intra-cranial growth. I wish particularly to emphasize this point.

Had I made a tuning-fork examination before my first operation, I would have been led to believe that the cerebral complication was from the ear, because it was reasonable to suppose that pus was in the mastoid. The pain on the whole side of the head for four months is easily explained by the nasal empyema.

From the pathologic findings, we see that the primary diagnosis was correct. It explains fully the paralysis of the facial, the external oblique and the auditory, but no explanation can be given as to why the choked disc did not appear on the other side, while the diagnosis was correct. The doctor on more mature deliberation was not justified in arriving at such a conclusion.

I report this case, merely to show the necessity of examining all cases very thoroughly.

Shreve Building.