

Original Articles.

CASE OF TEMPORO-SPHENOIDAL TUMOR, PRESENTING SYMPTOMS SUGGESTIVE OF ABSCESS.

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THE patient, a prominent business man, sixty-nine years of age, of unusual intelligence and executive ability and of genial disposition, showed slight signs of mental change for six months or more preceding his death. It was noticed, for example, that it was difficult for him to keep his mind upon any continued line of thought. He would repeat anecdotes to the same listeners and find difficulty in telling them correctly. It was also noticed that the patient, though clear in many matters, for example, financial affairs—and, if anything, more interested in details than formerly—in some ways would show inattention. He would sometimes fail to notice when others were talking, and would interrupt them. He was at times inclined to be more talkative than usual, and more persistent in having his own way. It was noticed during the summer preceding his final illness, that during a trip he would form his own plans and would not vary from them, whereas his natural tendency was to ask others what they would like to do, and make plans with reference to their convenience. He would repeat himself in conversation. His disposition gradually changed during this time, and towards the end he would sometimes speak quite sharply. Sometimes he became quite loquacious and inconsequential; for instance, on being asked how he felt, would answer, “First rate, great a, little a, bouncing b,” etc. Towards the end he suffered from very marked lapses of memory, forgetting from day to day what he had done. There was throughout no disturbance in articulation nor trouble in choosing words. With these changes he maintained almost to the end a bright and even jocose manner of answering questions, especially when under the excitement of the physician’s visit.

The patient had suffered for several years from an inflammation of the middle ear, with pain and discharge, an accurate description of which trouble is furnished by Dr. Blake, whose report is appended.

REPORT OF AURAL CONDITION (DR. BLAKE).

I first saw the patient professionally in October, 1890, on account of an impairment of hearing in the left ear, due to the closure of the Eustachian tube consequent upon a head cold, which was easily relieved by the usual treatment. For many years, almost since he could remember, this left ear had been his main dependence for hearing purposes, the hearing of the right ear having been seriously impaired as the result of a suppurative inflammation of the middle ear in childhood.

Examination of the right ear at that time showed a large perforation, very nearly a destruction of the membrana tympani, the long process of the malleus being indrawn by contraction of the tensor tympani muscle until the tip of the bone touched the promontory to which it had become attached by cicatricial growth; a tense and firm cicatrix also extended from the upper border of the old perforation, both in front of and behind the malleus, down upon the promontory; and still other cicatricial bands below served to enclose that portion of the inner tympanic wall directly in view. Hearing tests showed a very marked impairment of hearing for sounds aërially conveyed.

During the interval between this examination and his last illness, he had several slight attacks with trouble in the left ear which brought him under observation, on which occasions inspection of the right ear showed it to remain unchanged, both as to appearance and as to hearing power, as was also the case during his last illness, with exception of a slight congestion of the blood-vessels in the upper remaining portion of the membrana tympani and at the extreme inner end of the upper wall of the external auditory canal; but while this reddening suggested a congestion in the epi-tympanic space, it was too slight in degree to be taken as an evidence of any serious trouble.

About seven weeks before his death he complained for the first time of headache on the right side over the ear, but was out and about; and on Thanksgiving Day (a month before his death) he went out of town to dinner, and appeared very well. On the following day he became quite weak, walked very slowly; and on the second day after Thanksgiving he became so feeble that he had to be supported. That day he took to his bed, which he did not leave, except to be assisted to an easy-chair. From this time on he could hardly roll over or rise in bed without assistance.

Physical examination two days after Thanksgiving showed extreme general weakness, with marked impairment of the movements of the left leg. On being asked to raise the foot so as to touch an object with the toe, he did this fairly well and promptly with the right toe, but with the left toe in a very weak and uncertain manner. He answered questions at this time correctly, but appeared on the whole somewhat sluggish and apathetic, though he was still inclined to answer simple questions in a jocose manner. The pulse was 80, full and soft, the arteries were markedly atheromatous. There was inability to distinguish objects to the left of the median line in each eye (left hemianopsia).

The patient writes, “God save the Commonwealth of Massachusetts” in a good hand without a mistake. Examination of the fundus unsatisfactory on account of patient persistently looking down, trying to close eyes and showing distress generally.

No material change appeared in the patient’s condition during the next few weeks, except that the mental condition became decidedly worse and conversation at times rambling and incoherent. He could, however, at any time be brought to himself by a sharp question. Temperature and pulse were practically normal until within forty-eight hours of his death. An examination of the urine by Prof. E. S. Wood showed early in November only a concentrated condition with excessive acidity and a slight renal irritation. This condition disappeared under the use of mild alkaline diuretics. At times headache appeared severe enough to interfere with sleep, but this symptom was on the whole not prominent. No vomiting occurred throughout.

Second examination of the field of vision, on the 2d of December, showed that the patient distinguished blue, red and yellow at a normal distance in the proper order on the right with each eye, but did not distinguish them on the left until they reached the median line. At this time the grasp of the left hand was extremely feeble, that of the right good. Objects were taken up easily with the right hand, but with the left were taken up feebly and with fumbling. The left leg was much weaker than the right, and in attempting to walk the patient would put the right foot forward and bring the left up to it. No facial paralysis appeared.

The knee-jerks were normal and alike, the pupils alike and reacted to light. The movements of the eyes were unimpaired. Examination of fundus again unsatisfactory, on account of patient's inability to fix.

From this time the patient gradually lost ground, completely losing the use of the left leg, and practically that of the left arm. His memory became so greatly impaired that he would say that he had eaten nothing directly after taking his nourishment. On the day before Christmas the pulse and temperature rose steadily, the patient became comatose, and died quietly Christmas morning. The autopsy was made by Dr. W. F. Whitney, whose report is appended:

Autopsy, December 25, 1896, at 11.30 A. M., five hours after death. Body of an old man of large frame. Rigor mortis present.

Head.—The calvaria was dense, but with two smooth depressions close to the median line in the parietal region, due to senile atrophy. Inner surface normal, dura slightly adherent.

The right hemisphere more prominent than the left, and the convolutions slightly flattened. On attempting to remove the brain it was found to be adherent to the dura mater covering the anterior part of the right middle fossa, opposite the temporal lobe, from which projected a new growth. Section showed this to be a soft mass, illy defined from the rest of the brain substance, measuring about six centimetres by four centimetres. It occupied the first two temporal convolutions in this region and extended back into the white substance, where there was a recent hemorrhagic infiltration the size of a large cherry. The appearance of the growth was quite like that of the gray substance of the brain, but more translucent, less firm and marked by hemorrhages.

Microscopic examination showed its structure to be made up of numerous small cells, many of them with irregular fine prolongations, the whole forming a finely-felted mass. On this were numerous small, newly-formed blood-vessels and large polynuclear cells, some of a pear shape with a single large protoplasmic prolongation suggesting ganglion cells.

Elsewhere the brain was normal, and there was no evidence of any direct implication of the optic track on the right side.

Diagnosis.—Small-cell glioma of the brain, originating in the two first temporal convolutions of the right side, with a recent hemorrhage into its substance.

The chief interest in this case lies in the remarkable coincidence that a glioma, whose origin was, of course, entirely independent of the ear, should appear in the exact location usually occupied by cerebral abscess arising from aural infection. The coincidence becomes even more remarkable when we realize that the tumor was not only seated on the under surface of the temporo-sphenoidal lobe, but that it occupied this lobe on the side of an old, purulent, middle-ear trouble. It is true that the discharge had long since ceased, that no sign of active inflammation existed, and that exploration of the tegmentum tympani by Dr. Blake showed no direct extension of infection; this, however, by no means precluded the existence of an abscess, for this lesion not only follows direct extension from inflammation of the tympanic cavity or the mastoid, but also from infectious thrombosis. In fact, such abscesses are produced by this mechanism in various parts of the brain, even on the opposite side from that of the affected ear. Such a case has recently been described to us by Dr. Crockett. In this case the patient, who had suffered from a chronic middle-ear trouble of long

standing, but with no discharge for many years, was admitted to the Eye and Ear Infirmary for vague cerebral symptoms, such as apathy and change in disposition and moderate headache but with no localizing signs. The autopsy revealed an abscess in the frontal lobe with no line of communication to the ear. It is a well-known fact that similar abscesses deeply seated in the brain have been revealed by post-mortem examination, though no sign of their presence existed during life. It is true that this variety of abscess is far less common as result of aural infection than the form resulting from direct extension and appearing during a comparatively acute stage of middle-ear inflammation.

An abscess set up by this means may become chronic, gradually increase in size and give rise to alarming symptoms, only when so extensive as to encroach upon the important nerve tracts. It must be remembered in this connection that abscesses are less prone than tumors to produce symptoms by pressure beyond the limits of the diseased tissue. The altered mental condition noticed in this patient in the course of the year preceding his death is consistent with both tumor and abscess; but the lack of attention, the loss of that consideration for others and deference to their wishes previously characteristic of the patient, the lack of ability to carry out extended lines of thought, and the lapses of memory running into delirium without marked headache or vomiting, in the case of a person with either present or past purulent middle-ear trouble would certainly primarily suggest abscess. When such symptoms are followed by sudden accession of weakness, mental and physical, with loss of flesh and rapid onset of hemiplegia and hemianopsia, with no vomiting and with comparatively little headache, a presumption would naturally be established in favor of abscess, which had reached the optic tract and internal capsule by direct extension, rather than of tumor which had produced these symptoms indirectly by pressure, though the possibility of tumor in such circumstances could certainly not be denied. The irregularity and range of temperature again (from 97° to 99°) would strongly suggest abscess. The only arguments for tumor were too inconsiderable to turn the balance, namely, the absence of chills and the age of the patient. Tumor is certainly more frequent in advanced life than abscess, still the latter may occur at any period. The presence or absence of optic neuritis might have aided in the diagnosis, though its presence would not absolutely have established the diagnosis of tumor, as this symptom is sometimes present in abscess also; in fact, Gowers considers this symptom much more common than published reports would indicate.

Two attempts to examine the disc were made unsuccessfully, the patient being absolutely unable to fix the eye, and showing such signs of distress that the attempt was abandoned. If the decision of this point had been deemed in any way essential to the patient's relief, the assistance of one more skilled in ophthalmological examination would have been sought; the location of the lesion was, however, absolutely established, and operation decided against in either event.

The question of operation was very carefully considered in all its aspects, the conclusion being reached, in view of the patient's senility (as evidenced, for example, by the marked and extensive atheromatous arteries) and the depth of the lesion, that the patient's condition would be probably made worse rather than better by operative interference. The family were

very naturally opposed to operation on such a discouraging report as we were forced to give them, and to the patient the subject was never broached.

The autopsy certainly established the uselessness of operative interference, as the removal of the tumor would have involved practically the removal of a very

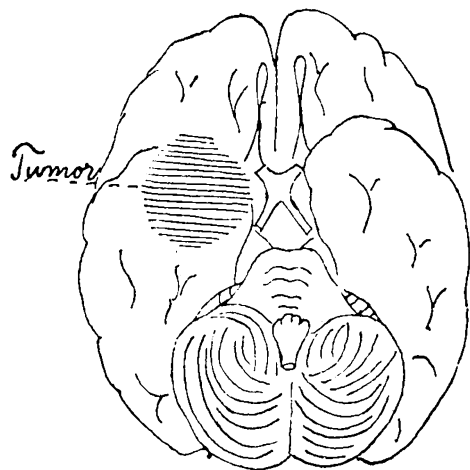


FIG. I. Showing seat of tumor.

considerable portion of the temporo-sphenoidal lobe, as will appear from the accompanying cut. If attempted, the operation would probably have resulted in an extensive brain hernia, with its attending inconveniences and discomforts, thereby increasing rather than diminishing the patient's distress.

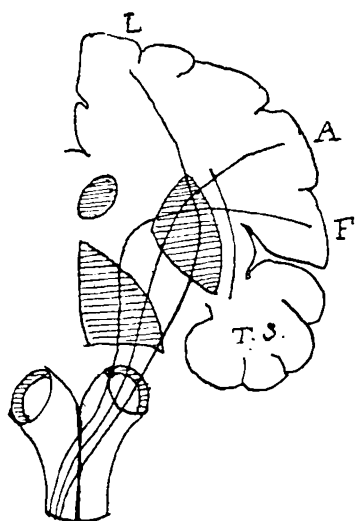


FIG. II. Diagram showing order of involvement of leg, arm, and face fibres by lesions of the temporo-sphenoidal lobe (Macewen).

The most interesting point in connection with cerebral localization is that of the order in which the limbs were affected, a point upon which Macewen lays much stress. In case the lesion extends along the surface of the brain from the temporal lobe, involving successively the Rolandic areas from below upwards, the paralysis begins with the face, and the arm and leg become successively involved. If, on the other hand, the process extends inward and encroaches upon the internal capsule, this order is reversed, because the

fibres from the leg and arm centres cross before reaching the internal capsule.

A glance at the diagram used by Macewen² (Fig. II) will make this point clear. A practical application of this knowledge bears on the question of operative interference. In case we have to do with an abscess, paralysis commencing with the leg tends to show that the lesion is very deeply seated, though it is true that abscesses sometimes cause symptoms by indirect pressure, as shown by the improvement after evacuation of their contents. In the case of tumors, the involvement of more or less remote regions by pressure is quite characteristic, as evidenced by the case here reported, in which the order of paralysis indicated pressure upon the internal capsule, although the post-mortem examination showed that the tumor had not itself invaded that region. Nor had the tumor directly invaded the optic tract, though the marked hemianopsia showed pressure upon that tract, posteriorly to the optic commissure.

This unique case, while offering an excellent illustration of the present status of cerebral localization, only emphasizes the difficulty of determining the exact nature of hidden lesions.

RUPTURES OF THE VISCERA AND THEIR CONNECTION WITH SURGICAL SHOCK.¹

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AFTER accidents of a certain degree of severity, the following group of symptoms is usually found; and when there is no external or known condition to account for them they are taken together and called "shock." These symptoms are lowered temperature, rapid pulse, sighing respiration, restlessness, and cold moist skin; and it is to this group of symptoms rather than to any lesion that the term "shock" is applied. The same symptoms are found with hemorrhage; and it is only when the question of hemorrhage has been eliminated that this term is used.

Shock is being constantly presented to the surgeon in all stages of severity up to the most profound collapse; but it is only in its more severe forms that it is apt to be seriously considered as an obstacle to the radical treatment of the more definite lesion for which treatment is requested. While there are cases in which even the autopsy fails, as yet, to demonstrate the actual lesion which caused death, they are very rare; and there can be little doubt that in the future, with increased accuracy in diagnosis, the word "shock" will, as has already been the case with those equally indefinite terms "idiopathic peritonitis," "scrofula" and "inflammation of the bowels," be superseded by diagnoses more in accord with scientific accuracy, and which will give some idea of the lesions underlying this group of symptoms. It is especially true after severe accidents that the autopsy almost invariably develops some condition which is sufficient in itself to account for the death, and that after an autopsy it is rarely, if ever, necessary to use vague terms to account for it.

¹ Read before the Boston Society for Medical Improvement, March 22, 1897.

² Macewen: Diseases of Brain and Spinal Cord, p. 152.