

believes that such abscesses are accompanied in most cases by a subnormal temperature. Where a high local temperature is noted, either the pus is from a localized inflammation of the arachnoid, limited by adhesions, or else there is a meningitis in addition to the abscess. If originating from ear disease, where the abscess is secondary, the temperature is usually above normal, although not invariably so. When the motor area is involved, diagnosis is easy; where the motor area is not involved or has not been primarily affected nor injured, chance only can lead to a determination as to the location of the pus. His paper is additionally valuable on account of the cases to which it calls attention.

In the *Edinburgh Med. Journal* (May, 1887, p. 896, and June, p. 995) McBride and Miller have given some valuable hints as to the diagnosis and treatment of cerebral abscess due to disease in the ear. When the auditory nerve is intact the disease is, in all probability, located in the neighborhood of the tympanum. In this case one should trephine above and a little in front of the external meatus. It would be well to so plan the external incision that one can also attack the mastoid process. When the auditory nerve is involved, the pus will usually be found beneath the tentorium cerebelli. In case of thrombosis of the lateral sinus, one had better abstain from operation. If instead of an abscess, one comes down upon a diffuse meningitis, the operation will still be serious. McBride calls attention to the fact that in suppuration of the mastoid cells there will usually be pain on pressure over the process. In cases of chronic suppurative disease in the ear, it is better not to wait too long before opening the mastoid, if there is any reason to suspect the presence of pus.

In the treatment of mastoid disease it occasionally happens that after opening the mastoid and detecting pus the surgeon comes to a halt because he considers that he has done enough in the absence of clear indication to the contrary. It may happen that subsequently cerebral symptoms supervene which point toward an abscess in the brain; in such a case it will be proper to enlarge the original mastoid perforation to the necessary extent, to expose the dura, and to explore with a hollow needle. If pus is found, the abscess is treated as usual;

if no pus is found, no harm will have been done.

It has been a number of times shown that the temporo-sphenoidal region of the brain better tolerates surgical interference than almost any other part of it. If it could be generally taught that, anatomically and surgically, no good reasons exist why opening of the dura and draining of the middle fossæ should not be practiced in cases of suppurative meningitis, we should not have the sad fact to contemplate that so many of the cases of cerebral abscess due to ear disease die unrelieved by mastoid operation. If cerebral abscess can be excluded in favor of an abscess in the cerebellum, no hesitation should be felt in trephining through the skull below the tentorium. Mr. Barker has laid down an excellent rule in such cases—namely to explore the opening of the mastoid vein at once; if purulent softening has extended backward toward the cerebellum from the ear, some of the discharge will be found oozing from this opening. Not enough attention has been paid to his observations.

In the general diagnosis of cerebral abscesses it is necessary to remember that there is usually a latent period, devoid of all brain symptoms, which may continue for an indefinite time, from a few days to several years. The stage of active symptoms is usually ushered in by more or less headache and slight rise in temperature; local or motor symptoms can be expected only when the abscess is in the motor area of the brain. With regard to the operative procedure, it is worth while to remember that Renz published in 1867 a case in which a traumatic cerebral abscess was reopened on account of symptoms of compression. In this case Renz practiced regularly a series of aspirations, emptying the abscess cavity through a small hollow needle twice a day for six weeks. Aspirations were discontinued during the sixth week, but had to be resumed five days later, and were continued six weeks longer. The patient recovered in half a year, and has since remained well. This is the first case on record of systematic and intentional aspiration of cerebral abscess. At the present day no one would think of practicing this method, but would make continuous drainage. When we remember that abscesses large enough to cause cerebral symptoms usually have a cavity at least large enough to find and