

Following this there will be no danger in trephining or chiseling the cranium over the point of separation.

It is more difficult by far to map out the lateral sinus, and yet it is most important to possess a knowledge of its location. There is no sinus within the cranium that is more often approached with the trephine or chisel. This is due principally to the inflammation of the middle ear, and its extension into the antrum of the mastoid portion of the temporal bone. A horizontal line extending from the occipital protuberance to a point one inch behind the external auditory meatus at which point it becomes nearly perpendicular and grooves the inner surface of the mastoid process will outline on the skull the lateral sinus. This perpendicular line extends downward, forms nearly a right angle with the horizontal, and as it is lodged in the mastoid behind the ear the only way to avoid it in diseases of the mastoid is not to cut through both tables of the skull.

In ligating the middle meningeal artery, a vessel that is frequently ruptured in fractures of the skull, Vogt and Bock advise to trephine one half inch above the zygoma, and a similar distance behind the angle of the orbit. Another writer says that it is situated two fingers' breadth above the zygoma, and a thumb's breadth behind the frontal process of the malar.

Kroenlein advises trephining for the purpose of exposing this artery 1-1½ inch posterior to the external angular process on a level with the upper body.

In trephining over the point mentioned with a one inch trephine the anterior or middle branch of the artery can be reached. If a clot of blood is not found in this locality the trephine can be again used just below the parietal eminence. When a clot is reached it should be removed and the artery ligated. A very excellent method of quickly catching the meningeal artery is to include it and the skull in the grasp of a haemostatic forceps. The forceps can be left 48 hours and the wound may be packed about it or the bone may be cut away with a chisel or rongeur forceps and

the artery ligated.

If there be a fracture of the skull, the depression in the bone will generally direct the operator where he should trephine. After an opening is made, if an abscess be present and it be epidural, it should be thoroughly irrigated and dressed antiseptically. If sub-dural, the dura mater should be incised and the cavity treated similarly. The cranium may be contused and not fractured. Under such circumstances pus may form externally under the scalp and ultimately between the membranes and the brain. In the latter instance the cerebral disturbances in the extremities or trunk will generally indicate the pressure of pus within the skull and its location. An abscess may form within the brain substance and remain for months and years without causing the patient any inconvenience. It pushes aside the brain substance so gradually that the nerve centres are not disturbed. If by any chance this slow growing abscess should take on activity causing undue pressure there would be terminal manifestations, sufficient to direct the operator to the trephining area. After removing the button of bone the membranes will be pushed well into the aperture, and no pulsation will be felt.

After dividing the dura a small aspirating needle or groove director can be thrust into the brain to the abscess. When pus is found insert a haemostatic forceps into abscess cavity and separate blades. The cavity should be irrigated and drainage carried on until it collapses.

Many brain tumors can at present be located by means of the cerebral localization and removed. Parks, of Buffalo, gives them in the following order of frequency: Tubercular gumma, glioma, sarcoma, cysts, carcinoma and syphilitic gumma, and a small proportion of fibroma. Parks thinks that out of one hundred cases of brain tumors that not more than from 5 to 7 per cent are so placed as to justify surgical attack. However correct this statement may be, it is too evident at times that death would be preferable to the years of suffering resulting from the pressure of a brain tumor.

The recent works, either surgical or anatomical, agree as to the situation

