VENTRICULOCISTERNOSTOMY ACCORDING TO TORKILDSEN
A REPORT OF TWENTY-TWO CASES
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To re-establish the circulation of the cerebrospinal fluid (CSF) presents difficult problems in cases of hydrocephalus with increased intracranial pressure due to Sylvian aqueductal obstruction or inoperable tumours in or near the 3rd ventricle. A great number of palliative operations have been tried to effect a new passage for the CSF between the ventricular system and the subarachnoidal space, or other tissues and organs of presumed resorptive or conductive capacity. Dandy\(^2\) introduced the procedure of ventriculostomy, establishing a communication between the 3rd ventricle and the cisterna chiasmatis by puncturing the lamina terminalis. This operation, still in use, has the disadvantage that the puncture is performed externally beneath the frontal lobes, thus puncturing also the arachnoidal membrane. There is therefore a risk of CSF escaping subdurally, where the power of absorption is poor. Also, the ventriculostomy often tends to close after some time. Mixter\(^7\) performed ventriculostomy from the inside through the floor of the 3rd ventricle into the cisterna interpeduncularis. In this procedure a cystoscope was passed through one of the lateral ventricles and reached the 3rd ventricle via the foramen of Monro. The floor of the 3rd ventricle was then punctured with a flexible probe. His patient, a 9-month-old child with a non-communicating hydrocephalus, was temporarily much better postoperatively. The general condition improved, the size of the skull diminished, and the dye test showed a communication between the ventricular system and the lumbar subarachnoidal sac. Later, the same idea was used by Stookey and Scarff;\(^9\) in their procedure the lamina terminalis was punctured from the outside as a first step. The floor of the 3rd ventricle was then punctured from within the ventricle, thus connecting the ventricle with the cisterna interpeduncularis, and leaving the arachnoidal membrane intact. The brain tissue punctured in this procedure is very thin, and the authors were of the opinion that there was no fear of a secondary closure.

Hyndman\(^4\) established a communication between one lateral ventricle and the cisterna ambiens by removing the glomus of the choroid plexus. At this clinic Leksell tried essentially the same procedure in a few cases of atresia of the Sylvian aqueduct by puncturing the laminae of the choroid plexus between one lateral ventricle and the cisterna ambiens.

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In the Torkildsen procedure a direct communication is established between the body or posterior horn of one lateral ventricle and the cisterna magna by means of a tube, usually of rubber. Both the Torkildsen and the Hyndman procedures can be used in cases of tumour in or near the 3rd ventricle.

Cases suitable for the palliative operations described in the brief review above are not exceptional, but are rare enough to make it impossible for one single clinic to have at its disposal a sufficiently large clinical material to judge reliably the indications for the different operations and their respective values. Most of the publications dealing with this special subject therefore comprise only occasional or few instances. Torkildsen in his monograph published his results in 32 cases. Fincher, Strewler, and Swanson reviewed the literature and reported their results in 19 cases in which the Torkildsen method was used.

CLINICAL MATERIAL

At this clinic 31 patients have been operated upon by Torkildsen’s method during the years 1939 to 1948. Nine of them had undergone other operations earlier, or shortly before or after the Torkildsen procedure, and in these cases it is difficult to decide the significance of the Torkildsen procedure with regard to improvements obtained and the risk of operation. They have therefore been excluded, and the present report comprises 22 cases. The hydrocephalus was due to Sylvian aqueductal obstruction in 4 cases, and to tumours in 18. In 2 of the cases of aqueductal stenosis an unsuccessful attempt was made to relieve the obstruction by forcing through a rubber catheter.

The mortality following operation is high in this material. Within 1 month 9 patients died. It must be taken into consideration, however, that several of our patients had been admitted to the hospital in an advanced stage of their disease. Of the 9 patients who died, 5 were so ill on their arrival at the hospital that operation was performed as a last resort.