SHOULD EXTERNALIZATION BE ATTEMPTED IN CASES
OF NEOPLASM IN OR NEAR THE THIRD
VENTRICLE OF THE BRAIN?

EXPERIENCES WITH A PALLIATIVE METHOD

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TUMORS in the pineal region as well as neoplasms in or near the 3rd
ventricle are characterized by signs of intracranial hypertension at an
early stage of the disease due to the obstruction of the circulation of
the cerebrospinal fluid. Neurological signs due to the local pressure of the
tumor in many cases occur late or not at all. Most of the symptoms are of
hydrodynamic genesis.

Until recently our knowledge concerning tumors in the pineal region and
neoplasms in or near the 3rd ventricle has been based predominantly on
autopsy findings. The development of neurosurgery has to some extent
widened our experiences, and at the present time a considerable number of
publications have appeared dealing with successful removal of tumors from
this central region of the brain. As a rule the reports concern isolated cases.
Accounts of series of such operations are rare. A series of 21 cases of neo-
plasm in the 3rd ventricle, published by Dandy,5 attracts special interest,
comprising 5 cases of colloid cyst and 16 cases of neoplastic lesions of other
nature. His immediate operative mortality was 33.3 per cent. While patients
surviving the extirpation of a colloid cyst usually are cured, this is frequently
not true of patients surviving the extirpation of gliomas in the 3rd ventricle
or its walls. It is not possible to judge concerning the late results in Dandy’s
series, as 6 of the 16 patients had lived 8 months or less when his work was
published. It is to be feared that recurrence has taken place in a number of
his cases and has changed the impression of the immediate result of his
operations. Not all neurosurgeons have been so successful as Dandy. Bab-
bini et al.,1 in 1944 reported 6 cases of tumor in the 3rd ventricle operated
upon with a mortality of 100 per cent.

In the publication mentioned above, Dandy did not include his cases of
tumor in the pineal region. As far as the practical surgical results are con-
cerned, tumors in this region constitute a depressing chapter. By 1932
Cushing had operated upon 14 patients, all of whom died. So far, reports on
successful removal of tumors in the pineal region have been rare. In 1943
Russell and Sachs5 collected from the literature 58 cases, and in 55 of these
death occurred; 32 of the 58 patients had been operated upon.

A recent report by Müller and Wohlfart4 indicates that the results may
be improved, as Olivecrona has operated in 41 cases with a mortality of 50
per cent.
In view of the unsatisfactory results of the attempts at surgical removal of most of the neoplasms in or near the 3rd ventricle, other methods should be worked out. Pituitary adenomas, suprasellar meningiomas and cholesteatomas do not come into consideration here.

A new operative procedure has been devised by the writer. It consists in establishing an artificial communication between the lateral ventricle and cisterna magna. The operation aims exclusively at the relief of the hydrodynamic alterations caused by the obstruction of the flow of the cerebrospinal fluid. By means of a rubber tube running outside the cranium, with one end in the lateral ventricle and the other end fixed in the cisterna magna, the cerebrospinal fluid is short-circuited about the pathological region. In a previous paper I have described the technical details of the procedure.6

Patients who have been operated upon by this method continue to live with the neoplasm untouched. Their fate consequently depends on the expansive energy of the new growth. My experience has shown that the neoplasms in question are frequently extremely indolent. In some of my cases it has not been possible to demonstrate growth of the neoplasm by neurological or ventriculographic examination after intervals of 7 or 8 years.

Up to July 1945, 8 patients with neoplasm in the pineal region and 11 with tumor in the 3rd ventricle or its immediate vicinity have been treated by this method.* Only 1 of the patients with tumor in the pineal region and 2 patients with tumor compressing the 3rd ventricle have died in consequence of the operative procedure. The other patients have lived a sufficiently long time after the treatment to allow interesting observations concerning the effect of the operation on the intracranial hypertension and concerning the further growth of the neoplasms.

The clinical material and the results of the operations are briefly recorded below.

1. TUMORS IN THE PINEAL REGION

8 Cases

ANAMNESTIC DATA

The group comprises 8 patients, the ages varying from 11 to 54 years. There were 5 males and 3 females. In all cases, the first symptoms were of increased intracranial pressure without any local signs giving reason to

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* Two additional cases have been omitted from this discussion. One was a neoplasm in the pineal region: an osteoplastic craniotomy with extirpation of an infiltrating astrocytoma was followed by ventriculocisternostomy on the same day. The patient died postoperatively. It is not possible to determine whether the 1st or the 2nd of these operations was of importance in the subsequent death.

The second case omitted was in the group of tumors in or near the 3rd ventricle. The patient presented neurological and radiological signs of intracranial hypertension due to a neoplasm in the 3rd ventricle. On the same day, subtotal extirpation of a glioma in the 3rd ventricle and ventriculocisternostomy were performed by 2 separate operations. The patient recovered well and has not developed new signs of intracranial hypertension after more than 2½ years. It is, however, not possible to tell whether the improvement was due to the 1st or the 2nd operation, and the case has therefore not been included in this discussion.