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Surgical Treatment of Suprasellar Arachnoid Cyst

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Dear Sir,

Suprasellar arachnoid cysts often present with hydrocephalus [1, 2]. Even if hydrocephalus can usually be treated without permanent shunting devices, the best surgical approach remains presently controversial concerning the operative risks and the avoidance of long-term recurrences [2]. We describe a case of suprasellar arachnoid cyst which was successfully treated by direct opening of the cyst wall and creation of a cis-ternocystostomy.

A 34-year-old woman was admitted to our Department on February 12, 1991, with a 2-week history of increasing headaches, morning vomiting and tinnitus. Physical examination was normal. CT and MRI revealed a triventricular hydrocephalus caused by an expanding lesion located in the suprasellar region and extending backwards into the interpeduncular cistern (fig. 1). The mass had a smooth external surface and intensity features similar to CSF. A right pterional craniotomy was performed to allow direct access to the lesion. Gross examination revealed a typical thick arachnoid membrane without evidence of neoplastic tissue. The arachnoid cyst was largely opened with outflow of CSF under pressure. To prevent recurrence of hydrocephalus, a free communication was created between the third ventricle and the basal subarachnoid space by resecting the lamina terminalis. A CT scan performed 18 months later confirmed the absence of cyst recurrence and normalization of the ventricle size.

Fig. 1. MRI T1-weighted sagittal view showing the suprasellar arachnoid cyst extending backwards into the interpeduncular cistern (a) and T1-weighted frontal view outlining the borders of the cyst contiguous to the ballooned third ventricle (b).

The simplest way to relieve hydrocephalus and increased intracranial pressure is shunting of the lateral ventricles. Ventriculo-peritoneal shunting alone has not proved to be efficient because it seems that the pressure gradient between the drained ventricles and the intact cyst may favour further growth of the cyst and paradoxical aggravation of the hydrocephalus [1]. De novo formation of an arachnoid cyst has even been reported as a complication of ventricular overdrainage [3]. Hoffman et al. [4] have proposed to insert a shunt directly into the cyst and to drain into the lateral ventricle. Direct approach and opening of the cyst can be obtained on different routes. The subfrontal approach of the suprasellar region has been abandoned because of too many complications secondary to frontal lobe retraction. In order to avoid the risks of craniotomy and long-term complications of ventriculo-peritoneal shunting, Kahn et al. [1] have proposed the opening of suprasellar cysts by percutaneous ventriculocystostomy. Among 15 patients, 2 had a cyst membrane too resistant to be perforated by the leukotome and 1 had a peroperative subarachnoid hemorrhage. In most patients, ventriculomegaly and hormonal disturbances regressed only partially after the operation. Our patient was treated by classical pterional craniotomy without any complication. With help of the operative microscope, the cyst wall was largely opened and a communication between the ventricular system and the basal cisterns was created, so that no long-term shunting device was needed. As in other locations, it has been reported that arachnoid cysts in the suprasellar region can recur after total excision of the cyst wall [4]. However, our successfully treated patient suggests that with careful direct microsurgical opening of the cyst wall and creation of a large cisternocystostomy, durable good results can be obtained with minimal operative risks and avoidance of a ventriculoperitoneal shunt. Suprasellar arachnoid cysts represent, therefore, a rare cause of hydrocephalus which is curable without shunting.

References

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