Magendie's foramen obstruction as a rare cause of hydrocephalus

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Background

Membranous obstruction of Magendie's foramen is a rare case of non communicating quadriventricular hydrocephalus. Although in children is usually congenital, in adults it is mostly acquired and generally related with infection.

Methods

We present the case of a young woman who presented with intracranial hypertension symptoms (papilledema, headache, vomiting). Brain magnetic resonance imaging demonstrated a significant ventricular dilatation of all ventricles, turbulent flow of cerebelospinal fluid (CSF) in the fourth ventricle and flow of CSF through the Monro's foramen to the lateral ventricles. The patient underwent a suboccipital craniotomy with C1 laminectomy. An occlusion of Magendie's foramen by a thickened membrane (probably arachnoiditis) was recognized and it was incised and removed. Subsequently, a normal flow of cerebrospinal fluid between the fourth ventricle and the cerebellomedullary cistern was restored.

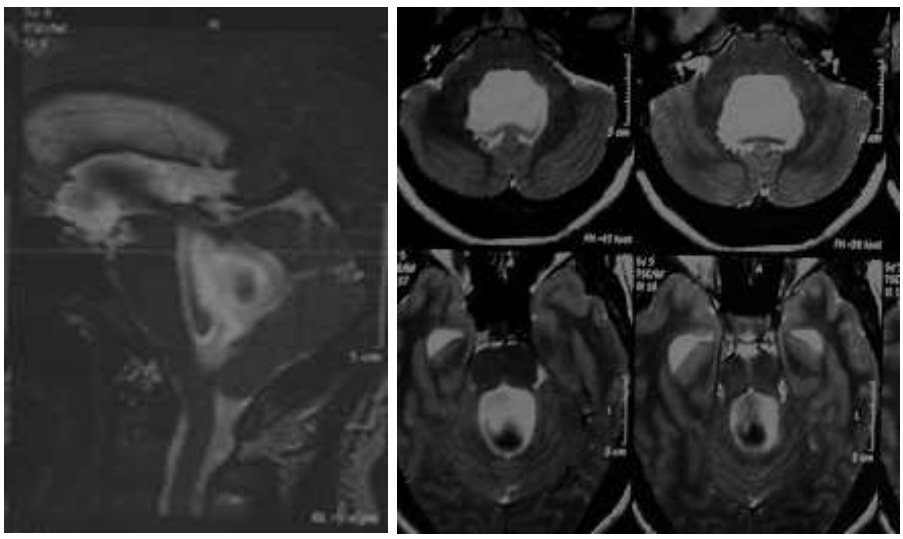

Fig. 1. A : Preoperative sagittal T2W TSE MRI showing turbulent flow of CSF in the fourth ventricle. B : Preoperative axial T2 MRI showing significant dilatation of fourth ventricle with turbulent flow of CSF.

Results

The postoperative course was uneventful. The new fundoscopic examination in two weeks revealed a reduction in papilledema and the MRI scan showed a marked decrease in the size of the ventricles, showing therefore that cerebrospinal fluid flow through the ventricular system and subarachnoid space was restored.

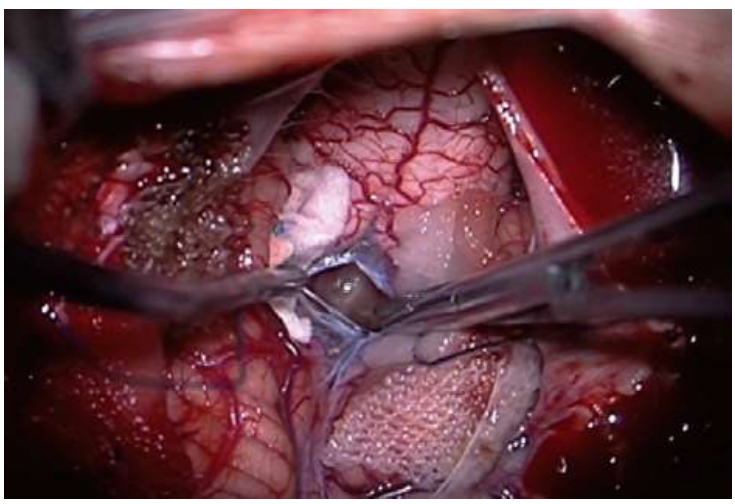

Fig. 2. A : Perioperative photo showing the occlusion of Magendie's foramen. B : Perioperative photo showing Magendie's foramen after the incision and removal of a membrane.

Conclusion

Review of the literature regarding adults revealed only few cases of congenital membranous obstruction of the foramen of Magendie in which the obstruction was not associated with systemic illness or trauma. Also only few cases related to idiopathic stenosis of the foramina of Magendie have been described. The rare published cases of hydrocephalus caused by stenosis of the foramina of Magendie are usually associated with another disease, mainly Chiari Type I malformation.

In our case we present the occlusion of Magendie's foramen by a membrane due to arachnoiditis with the high suspicion of an EBV infectious mononucleosis. The nature of this rare entity is difficult to demonstrate because of the complex morphology of the fourth ventricle. Treatment with surgical exploration and incision of the thickened membrane proved to be a reliable method of treatment without the necessity of endoscopic third ventriculostomy or catheter placement.

References

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