

Adult idiopathic occlusion of Monro foramina: Intraoperative endoscopic reinterpretation of radiological data and review of the literature

Andrea Prontera, Alberto Feletti, Rabih Chahine & Giacomo Pavesi

To cite this article: Andrea Prontera, Alberto Feletti, Rabih Chahine & Giacomo Pavesi (2015) Adult idiopathic occlusion of Monro foramina: Intraoperative endoscopic reinterpretation of radiological data and review of the literature, British Journal of Neurosurgery, 29:4, 609-610

To link to this article: <http://dx.doi.org/10.3109/02688697.2015.1080221>



Published online: 24 Aug 2015.



Submit your article to this journal [↗](#)



Article views: 13



View related articles [↗](#)



View Crossmark data [↗](#)

LETTER TO THE EDITOR

Adult idiopathic occlusion of Monro foramina: Intraoperative endoscopic reinterpretation of radiological data and review of the literature

Dear Editor,

Adult idiopathic occlusion of the foramina of Monro (AIOFM) is rarely encountered by neurosurgeons. Nevertheless, clinicians must know this condition in order to properly treat the patient, avoiding unnecessary ventriculoperitoneal or VP shunt implants. For this reason we read with interest the paper by Schonauer et al., recently published in the British Journal of Neurosurgery.¹

We agree with the authors that preoperative MRI is of great value to plan the treatment. It helps assessing whether hydrocephalus is biventricular or triventricular, it gives an idea about the patency of the cerebral aqueduct, and it may in many cases detect the presence of a membrane obstructing the FM. However, FM can be either occluded by a membrane, or by a true stenosis. The definitive diagnosis is therefore possible only through endoscopic inspection, and it may have relevant clinical implications. Actually, the fenestration of an obstructing, transparent membrane is much safer than the dilation of a stenotic foramen, which may damage the fornix and the thalamostriate vein.

Apparently, membranes occluding the FM are not different compared with those occluding the outlets of the fourth ventricle, which have been described as a cause of idiopathic occlusion.² Similarly, the pathogenesis is still unclear. The possibility of anatomic variations of FMs and the development of semipermeable membranes obstructing the foramen can be analogously proposed. The subcritical rates of CSF flux would maintain a clinical tolerance until either a decrease in the membrane permeability or a variation in brain compliance with age could tilt the balance and lead to clinical symptoms. As described for the Magendie and Luschka foramina, a subclinical inflammation of the lateral ventricle plexus may be the *primum movens* leading to arachnoiditis and ultimately to the occlusion of the FMs.

We encountered 2 adult patients with membranous obstruction of the FMs that we classified as idiopathic. However, in the second case a more careful interview about medical history prompted us to hypothesize an inflammatory origin of the obstruction.

A 20-year-old man reported a recent onset of intracranial hypertension symptoms. Medical history was negative. CT and MRI showed a biventricular hydrocephalus, and a thin membrane apparently obstructing both foramina (Fig. 1A and B). Diagnosis was confirmed by direct inspection with a rigid endoscope (Karl Storz, Decq, 30°) (Fig. 1C). We performed a Monroplasty and a septum pellucidotomy. At 6-month follow-up, the patient has no symptoms and MRI confirms the patency of the right FM.

A 72-year-old man presented with a two-year history of gait disturbance and memory impairment. An MRI showed a triventricular hydrocephalus (Fig. 1D) with possible occlusion of the Monro foramina. The medical history was initially referred negative. Neuroendoscopic examination with a flexible scope (Karl Storz, Germany) revealed a natural septostomy and a partial membranous occlusion of the FM (Fig. 1E), which was opened. The inspection of the adytum of the aqueduct confirmed an aqueductal stenosis, along with a thin arachnoid-like filament stretched between the mammillary bodies (Fig. 1F). The postoperative course was uneventful. After asking more insistently, the patient finally remembered about his mom telling him he had an unspecified infection when he was a child.

Triventricular dilation has been reported also in some other cases of AIOFM. It is worth noting that a long-standing weakening of CSF circulation distally to the stenotic FMs may potentially lead to a functional impairment of the aqueduct, irrespectively of previous clinically relevant infections. Therefore we think inspection of the aqueduct adytum should always be performed in cases of AIOFM and enlarged third ventricle.

The preoperative MRI of the first patient presented by Schonauer et al. similarly shows a triventricular hydrocephalus. It would be interesting to know if the authors inspected the aqueduct adytum. The inspection of the contralateral FM and of the aqueduct is easily feasible without any tilting of the scope at the level of the brain parenchyma when using a flexible scope. Schonauer et al. used a rigid scope in the second case, and we guess they used a rigid scope also in the first case, although it is not specified. How did the authors manage to visualize the contralateral foramen of Monro? Did they change optic? Was it possible to inspect the contralateral foramen also in the second patient, despite the significant shift of the septum pellucidum?

We congratulate the authors for their observations and for pointing out the importance of a correct diagnosis and the value of neuroendoscopy for a successful treatment of this disease.

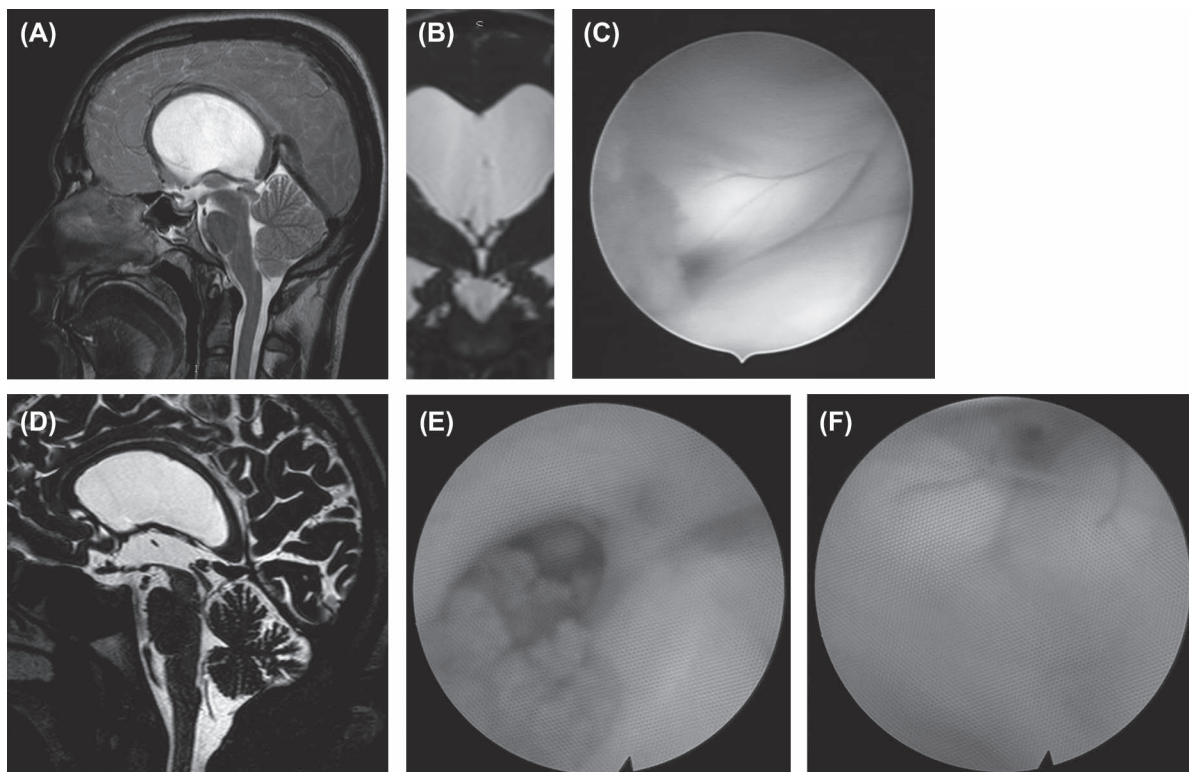


Fig. 1. (A) Sagittal T2-weighted MRI showing a biventricular hydrocephalus; (B) Coronal T2 Drive MRI sequence showing the occlusion of both FM and biventricular hydrocephalus; (C) endoscopic view of the right foramen of Monro occluded by thin avascular membrane; (D) Sagittal T2-weighted Drive MRI showing a triventricular hydrocephalus; (E) endoscopic view of the right FM partly occluded by a membrane; (F) A thin arachnoid-like filament stretched between the mammillary bodies.

Declaration of interest: The authors report no declarations of interest. The authors alone are responsible for the content and writing of the paper.

Andrea Prontera, Alberto Feletti,
Rabih Chahine, Giacomo Pavesi
Department of Neurosurgery,
NOCSAE Modena Hospital, Modena, Italy

References

1. Schonauer C, Johnson R, Chiriatti S, *et al.* Adult idiopathic occlusion of Monro foramina: intraoperative endoscopic reinterpretation of radiological data and review of the literature. *Br J Neurosurg* 2014;28:717-21.
2. Longatti P, Fiorindi A, Martinuzzi A, Feletti A. Primary obstruction of the fourth ventricle outlets: neuroendoscopic approach and anatomic description. *Neurosurgery* 2009;65: 1078-85.