Commentary

The authors present a report of chronic headaches[1] attributed to a stable unilateral occlusion of the left foramen of Monro (FM) that was followed for 5 years before surgical intervention (septostomy and foraminoplasty of the left FM) leading to dramatic clinical improvement. The patient's symptoms surprisingly resolved after surgery despite the recurrent membrane occlusion at the FM on follow-up imaging. Although there have been 14 other reported adult cases of idiopathic FM occlusion, this is the first case not associated with raised intracranial pressure. It is a nice description of a rare presentation of chronic surgical cause of headache.

Adult idiopathic occlusion of the FM (AIOFM) is a rare condition with only few cases described in the modern literature. To date, only 12 cases of AIOFM have been reported in the literature.[2] It is proposed that septum pellucidum (SP) displacement could play a role in the occlusion of the second FM. Endoscopic septostomy (Pellucidotomy) and widening of FM (foraminoplasty) with or without endoscopic third ventriculostomy may be the treatment of choice in unilateral hydrocephalus (UH)/unilateral ventriculomegaly (UV),[3] where the alternative is ipsilateral ventriculoperitoneal shunt.

However, the absence of papilledema and periventricular lucency signifies that the ventricle might not be under raised pressure in the first place. Absence of the typical clinical picture barring the unsparing, multi-drug resistant cephalalgia, adds to the mystery in this clinical picture. Three-dimensional constructed interference in steady state sequence did not reveal any lesion obstructing the FM. Magnetic resonance imaging (MRI) was done twice, 1 year apart, without any change in the ventriculomegaly, also does not add up.

Left precoronal burr hole was chosen because, despite the dominant side, it was the side with the dilated ventricle-hence more ergonomical to introduce the endoscope. The opening pressure was 22 mm Hg, hence increased intracranial tension is there.

Each lateral ventricle (LV) is a "C" shaped structure with a body, an atrium, and 3 projections (horns). The SP is a thin bilayered membrane that extends from the corpus callosum to the FM, forming the medial boundaries of the frontal horns. FM (interventricular foramen) is a "Y" shaped structure with 2 long arms extending toward each LV and a short inferior common stem that connects with the roof of the third ventricle. The anterior border of the foramen is formed by the pillars (bodies) of the fornices. The posterior border is formed by the choroid plexus.[4] The convergence of the septal veins and thalamostriate veins on the FM aids the neurosurgeon to locate FM, once inside the LVs. The fenestration of SP was performed at the level of avascular zone, between anterior and posterior septal veins.

The stoma was dilated using a Fogarty balloon no. 3. At the end of the septostomy, the endoscope was introduced into the stoma to inspect the contralateral ventricle and confirm the adequacy of the septostomy. There were membranes at ipsilateral FM, which were fenestrated. No attempt to widen the FM was done. Though endoscopic septostomy for headache has been reported[5] earlier, it represented trapped LV due to enlarged thalamostriate vein.

At 3 months of follow-up, she was free from headache without medications. At follow-up of 15 months, she was still free from headaches. An MRI done at 15 months showed septostomy defect, however, the membranes at foramen Monro were persistent, suggesting that the membranes might not be the sole etiology for the UV. There was no appreciable reduction in the size of ventricle.

Asymmetric Lateral Ventricles

It is identified in 5–10% of the normal patients. The asymmetry is typically mild to moderate. Bowing, deviation, or displacement of SP across the midline is common; by itself, it neither indicates pathology nor implicates an etiology for the nonspecific headache. Severe degrees of asymmetry diffuse nonfocal ventricular enlargement or evidence of transependymal seepage should prompt for a search of accompanying disorders. The major differential diagnosis is unilateral obstructive hydrocephalus, which is rare. Membranous obstruction can be overlooked and is best differentiated from benign ventricular asymmetry using MRI.

Unilateral Hydrocephalus

First described by Von Mohr (1842), usually, due to obstruction at FM, is an uncommon type of hydrocephalus, often congenital. In congenital hydrocephalus, vast

majority are bilateral, symmetric hydrocephalus with high rate of association with central nervous system (CNS) and extra CNS anomalies and mortality up to 85%. In contrast, UH is less frequently associated with other anomalies leading to a survival rate of 70%. In congenital cases, the etiology of UH may be atretic FM, stenotic FM, or membranous occlusion and may be associated with corpus callosum anomalies. In acquired cases, the causes include thalamic and intraventricular neoplasm, colloid cyst, tuberculoma, posttuberculous ependymal adhesions, ventriculitis, vascular malformation, and nonspecific inflammatory conditions.[6]

Here, the third ventricular pathologies, both neoplastic and nonneoplastic, may be constructed as the coal mine for the neurosurgeons, and the foramen as the entry gate of the coal mine. The neuroendoscope with its state of the art illumination and magnification on the top of its profile of safety and efficacy may suit the coveted title of the safety lamp. In future, this may turn in to the game changer for all ventricular pathologies, for all times to come and might change the way we look at them.

Soubhagya Ranjan Tripathy

Department of Neurosurgery, SCB Medical College Hospital, Cuttack, Odisha, India

Address for correspondence:
Dr. Soubhagya Ranjan Tripathy,
Department of Neurosurgery, SCB Medical College Hospital, Cuttack, Odisha, India.
E-mail: soubhagya.tripathy@gmail.com

References

1. Shukla D. Neuroendoscopic treatment of idiopathic occlusion of unilateral foramen of Monro presenting as chronic headache. J Neurosci Rural Pract 2016;7:29-30.
2. Schonauer C, Johnson R, Chiriatti S, de Falco R, Albanese V, Tessitore E, *et al.* Adult idiopatic occlusion of Monro foramina: Intraoperative endoscopic reinterpretation of radiological data and review of the literature. Br J Neurosurg 2014;28:717-21.
3. Available from: http://www.neuroradiologycases.com/2011/11/unilateral-hydrocephalus.html. [Last accessed on 2015 Nov 30].
4. Zohdi A. Brain Endoscopy in Hydrocephalus: The Role of Intracranial Endoscopy in the Management of Hydrocephalus: Dos and Dont's; Doable or Not. Germany: Verlag Endo-Press™; 2008. p. 12.
5. Florman JE, Lew SM. Endoscopic septostomy for headache. J Neurosurg Pediatr 2010;5:535.
6. Anne G. Osborn. Osborn's Brain – Imaging, Pathology and Anatomy. 1st ed., Ch. 34. Amirsys Publishing Inc., (LWW); 2012. p. 1272.

Access this article online

Quick Response Code:

Website: www.ruralneuropractice.com

How to cite this article: Tripathy SR. Commentary. J Neurosci Rural Pract 2016;7:131-2.