AJPMHS GLOBAL RESEARCH NETWORK

AMERICAN Journal of Pediatric Medicine and Health Sciences
Volume 03, Issue 01, 2025 ISSN (E): 2993-2149

INSTALLATION OF OMMAYA RESERVOIR IN A PATIENT WITH A PORENCEPHALIC CYST

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Abstract

The article describes a case of successful surgical treatment of a porencephalic cyst of the posterior horn of the left lateral ventricle and the installation of an Ommaya reservoir.

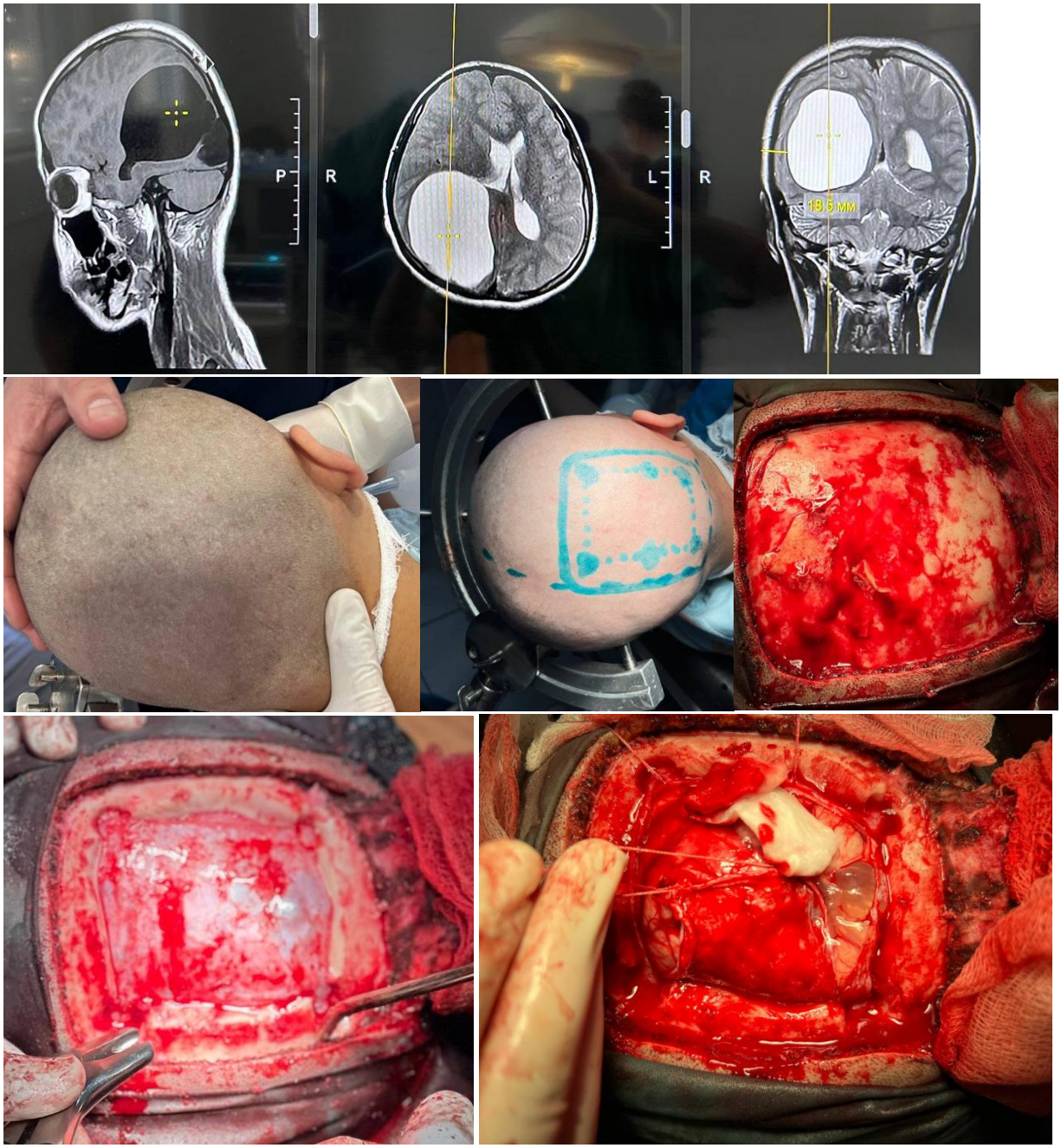
Keywords: cyst, ommaia, cerebrospinal fluid, endoscope.

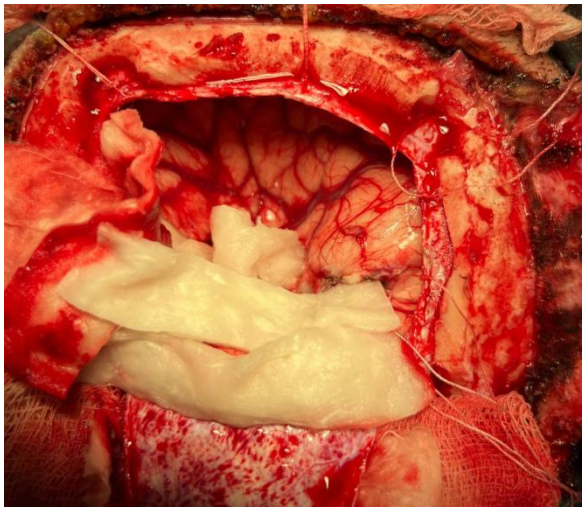
Introduction: in recent years, one of the most discussed issues is the possibility of using a neuroendoscope in the treatment of large brain cysts. This is due, first of all, to the high incidence of intracranial cystic lesions and the occurrence of cerebrospinal fluid circulation disorders [1,2]. In some cases, surgical interventions using modern endoscopic equipment can become an alternative to traditional methods. The capabilities of the method are reduced to intraoperative visualization and subsequent correction of pathological processes that are difficult to access for direct visual control [3,4,5]. Among the cerebrospinal fluid cysts described by the authors: small (up to 30 ml), which have a local effect (irritation, prolapse) and medium (up to 70 ml), causing local and remote signs of prolapse, are usually successfully treated with existing methods with satisfactory results. However, the treatment of cysts larger than 70 ml, which cause not only a limitation of reserve spaces, but also deformation and dislocation of the brain, remains problematic. At the present stage, the most frequently used method of treating large arachnoid cysts is cystoperitoneostomy. The intracranial part of the shunting system is punctured into the cyst cavity, and the distal part of the shunting system is immersed in the abdominal cavity. The authors themselves consider the disadvantages of the method to be the implantation of the shunting system without preliminary assessment of the elastic properties of the craniospinal system, which leads to inadequate correction of cerebrospinal fluid circulation (hypodrainage, hyperdrainage) with subsequent possible development of brain deformation, formation of intracranial hematomas as a result of rupture of transitional veins, intraventricular hemorrhages [6,7,8]. Another known method of treating arachnoid cysts of the brain is endoscopic cystocisternostomy. In this case, the authors perform cystocysternostomy, as a rule, with the interpeduncular cistern or chiasmatic cistern, or the ventricles of the brain by dissecting the membrane separating the cyst and the cavity of the cistern or ventricle. However, the authors encountered the problem of low efficiency in aresorptive processes, the risk of brain deformation with the formation of cerebrospinal fluid hydromas, the need for repeated interventions (cerebrospinal fluid shunting operations, drainage of hydromas, etc.) [9].

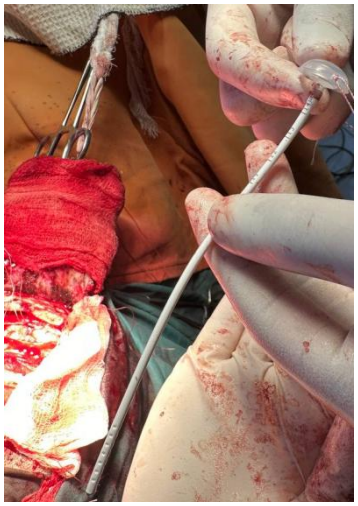
Materials and methods: Porencephaly is the presence of fluid-containing cavities in the brain. The latter can be either single or multiple, often located symmetrically and associated with the ventricular system. The base of the bubble usually reaches the surface of the cerebral hemispheres [10]. The convolutions of the brain surrounding the cavity are directed radially towards it, a number of degenerative changes are observed in them (a decrease in the number

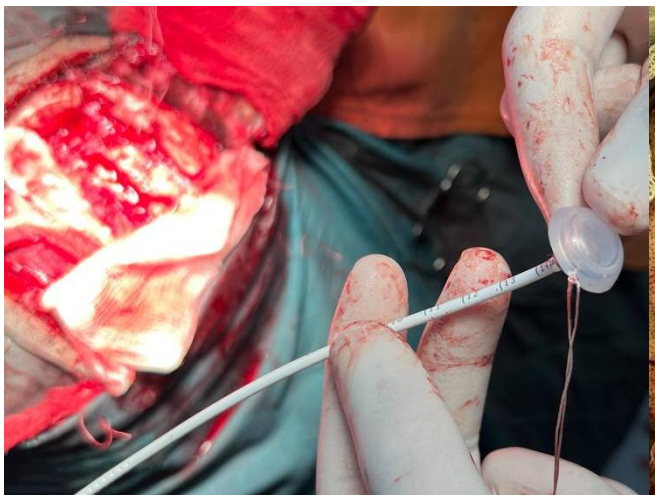
and size of nerve cells, their abnormal arrangement) (Figure 1). The presented image shows the connection of the porencephalic cyst with the lateral ventricles, as well as with the subarachnoid space. The detection of a porencephalic cyst in this patient was a complete surprise, because he does not have, and did not have in childhood, focal disorders characteristic of its presence, or they were too inconspicuous. It is believed that porencephalic cysts of ischemic etiology are more often located in the middle cerebral artery basin and, with unilateral damage, in 80% of cases are located on the right, as in our patient. The cause of congenital porencephaly may be an anomaly in the development of cerebral arteries, their spasm, embolic occlusion of the vessel by placental fragments. The causes of postnatal secondary porencephaly may be trauma, neuroinfections, strokes.

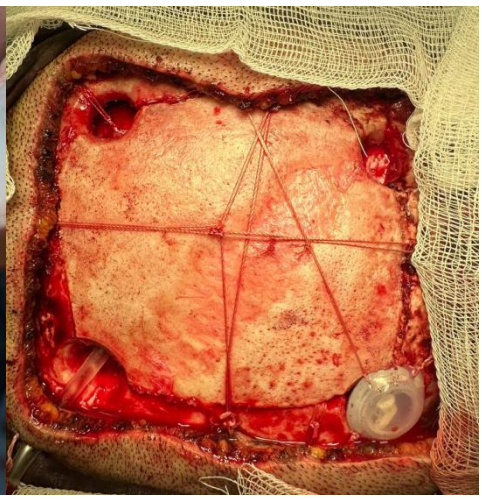
Pic 1. Patient data.

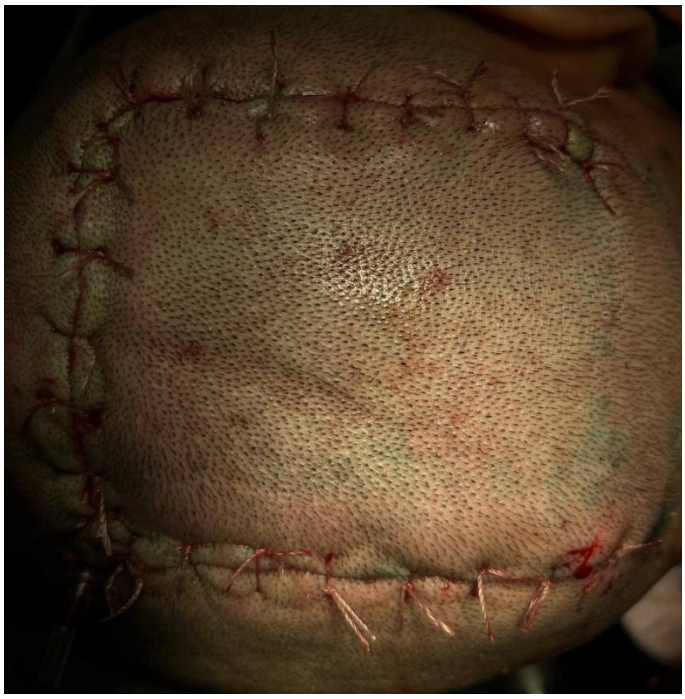












The patient underwent surgery to evacuate the cyst contents and install an Ommaya reservoir to prevent re-accumulation of fluid in the bed. Neurological deficits such as left hemiparesis and general cerebral symptoms regressed in the postoperative period.

Conclusion: Given the above-described phenomena, when detecting focal neurological symptoms in patients of any age, it is necessary to widely use modern neuroimaging methods of research and timely surgical treatment. However, the presence of congenital and acquired gross pathomorphological changes in the brain is not a "sentence" for the patient, highly organized nervous tissue is capable of self-regeneration, which gives a chance for a favorable outcome.

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