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ABSTRACT

Multilocular hydrocephalus is an entity that occurs relatively frequently in neurosurgical practice. We are present an editorial letter with a mini-review of the pathophysiology, surgical, and medical treatment.

Multiloculated hydrocephalus (MH) has also been termed as a multiseptate hydrocephalus, polycystic hydrocephalus, interventricular septum and can be unilocular or multiloculated.^{5,6,9} MH is characterized by the presence of septations or obstructions within the normal ventricular system, leading to cerebrospinal fluid (CSF) accumulation due to a lack of communication between ventricles^{4,6,8,10,11}. Although the etiology and pathogenesis not clearly known, the presence of septations has been considered to be caused by a fibrous adhesion within the ventricles or by inflammation leading to sub ependymal gliosis leading to glial bumps and septations leading to Ventricular obstruction^{4,8,9}.

Many etiological factors have been shown to associate with multiloculated hydrocephalus such as many intracranial processes as infection, intracranial hemorrhage, bacterial or fungal meningitis, congenital malformations, birth trauma, tumors, intracranial surgery, among others^{2, 6, 8,10,11}

Histologically, ventricular septum it is origins from a glial protrusion

Keywords

multilocular hydrocephalus,
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operative approach



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in ventricles⁴. The clinical presentation is determined by the most frequent manifestations of complicated hydrocephalus, such as: enlargement of the head, convulsions, neurological impairment, sign of the setting sun (inability to look upwards, observed with higher frequency in infants), headache or mental retardation^{3,7}. On the other hand, in the worst scenario, many patients may have the intracranial pressure (ICP) increased, presented as a consequence of the expansion or enlargement of the ventricles (ventriculomegaly)^{3,10}. Computed tomography (CT) and magnetic resonance imaging (MRI) allow visualization of the multiple cavities with CSF and irregular dilations with multiple septations (Figure -1)^{2,4,9,10}. The complications may be obtained by catheters and interventions to relieve the symptoms caused by raised intracranial pressure, however, the primary goal is to establish communication between existing compartments

and thereby achieve the diversion of the CSF^{8,10}

Treatment seeks to restore communication between isolated intraventricular compartments, in order to create a single cavity and implement a single bypass¹¹. Treatment options include placement of multiple bypass systems, endoscopic fenestration of localized compartments, septostomy, third endoscopic ventriculostomy, stereotactic aspiration, or craniotomy for the microsurgical fenestration of localized compartments or combination of several surgical principles.^{2,3,4,10} This mentioned open surgical and endoscopic approach effective at improving adequate function of CSF derivation. Furthermore, endoscopic techniques have the advantage in decrease time of surgery, need of transfusion and length hospital stay¹. The craniotomy and open surgical approach show a better success rate in severity and/or refractory cases^{1,2}

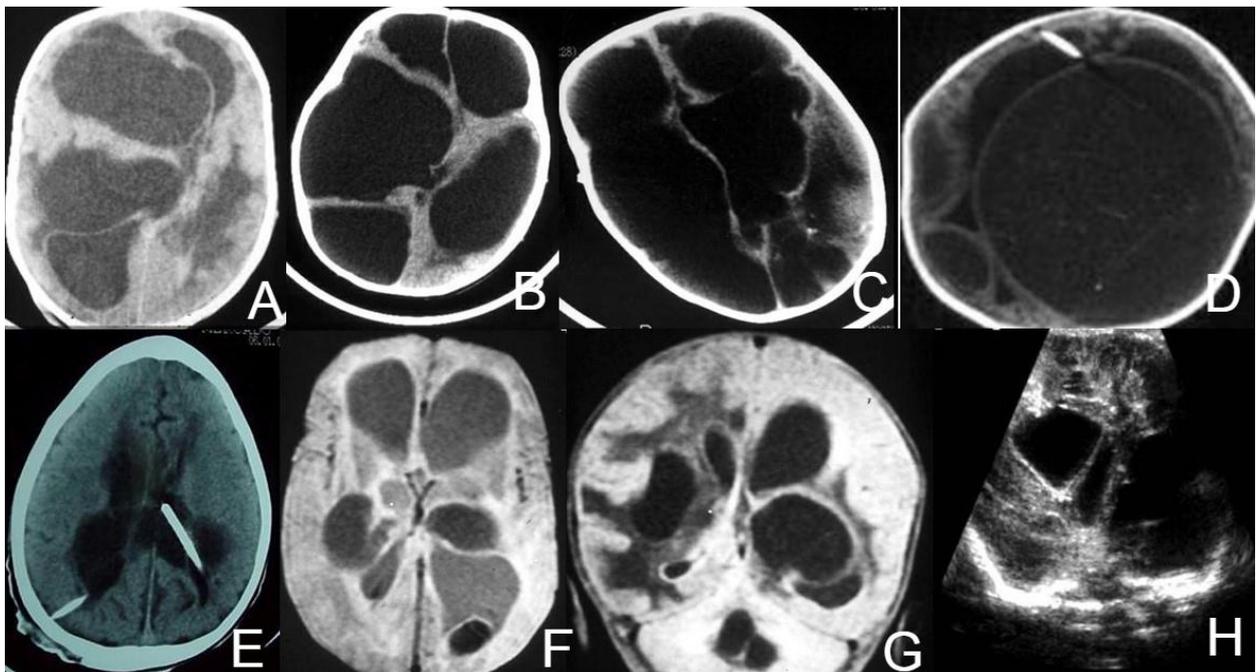


Figure 1. CT scan (A-E), MRI (F and G) and USG images showing characteristic imaging appearance of multiloculated hydrocephalus i.e., dilated ventricle and multiple septations.

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