Ventriculoperitoneal shunt contraindication

- A minimally invasive technique for ventriculoatrial shunt placement
- Lumbar Puncture or External Ventricular Drainage as Initial Treatment for Acute Hydrocephalus in Aneurysmal Subarachnoid Hemorrhage-A 2-Center Cohort Study
- Diagnosis of shunt nephritis through cerebrospinal fluid culture: avoiding the need for kidney biopsy. Illustrative case
- Balancing form and function: A single-center review of autologous vs. synthetic grafts in cranioplasty
- Ventriculo-pleural shunt --- A second line option in the management of complex hydrocephalus
- Children and adolescents with severe motor and intellectual disabilities who underwent kidney transplantation
- Optimized trans-cranial direct current stimulation for prolonged consciousness disorder in a patient with titanium mesh cranioplasty
- Comparing the Long-Term Cardiovascular Outcomes of Lumbo-Peritoneal, Ventriculo-Peritoneal, or Non-Shunting Treatment after Idiopathic Normal Pressure Hydrocephalus: A Nationwide Retrospective Cohort Study

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Absolute contraindications

Infection over the entry site

Cerebrospinal fluid infection

Allergy to any of the catheter components (silicone)

Relative contraindications

Altered coagulation function

High Cerebrospinal fluid protein protein

Cerebrospinal fluid with blood [1)].

Hydrocephalus with intracranial infection (HII) may cause pathological changes in brain tissue structure and irreversible damage to the nervous system. However, intracranial infection is a contraindication to ventriculoperitoneal (VP) shunt surgery, and the prognosis is improved by early infection control and intracranial pressure reduction. This study evaluated the safety and efficacy of the Ommaya reservoir vs. modified external ventricular drainage (M-EVD) in the management of HII in pediatric patients.

Methods: This retrospective controlled study included 45 pediatric patients with HII treated with an Ommaya reservoir (n = 24) or M-EVD (n = 21) between January 2018 and December 2022. Clinical

outcomes, cerebrospinal fluid (CSF) test results, complications, and outcomes were compared between the Ommaya reservoir and M-EVD groups.

Results: No patient died during the follow-up period. The two groups were similar regarding age, sex, admission temperature, weight, preoperative serum protein, and albumin concentrations, CSF analysis (white blood cell count, glucose concentration, and protein content), and clinical symptoms ($P > 0.05$). Both groups had significant changes in the CSF test results postoperatively compared with preoperatively ($P < 0.05$). In the M-EVD group, the median days for 13 children to remove the external drainage tube and receive the VP shunt was 19 days. The longest drainage tube retention time was 61 days, and there was no intracranial infection or serious complication related to the drainage tube. After the placement of the Ommaya, the median time required for CSF to return to normal was 21 days, and a total of 15 patients underwent VP shunt surgery.

The Ommaya reservoir and M-EVD are safe and effective for pediatric patients with HII. Both methods reduce the intracranial pressure and alleviate the symptoms of hydrocephalus, although there are differences between the two methods [2].

1)
Fowler JB, De Jesus O, Mesfin FB. Ventriculoperitoneal Shunt. 2023 Aug 23. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan–. PMID: 29083724.
2)
Chen L, He M, Shi L, Yue Y, Luo P, Fang J, Wang N, Cheng Z, Qu Y, Yang Z, Sun Y. Effects of modified external ventricular drainage vs. an Ommaya reservoir in the management of hydrocephalus with intracranial infection in pediatric patients. Front Neurol. 2024 Jan 11;14:1303631. doi: 10.3389/fneur.2023.1303631. PMID: 38274873; PMCID: PMC10808584.