Article published online: 2022-09-09

Letter to Editor

Endoscopic Third Ventriculostomy in the Management of Obstructive Hydrocephalus

Sir,

In the paper, "Early surgical outcome of endoscopic third ventriculostomy in the management of obstructive hydrocephalus: A randomized control trial," the authors studied 1-month outcome of endoscopic third ventriculostomy (ETV) or ventriculoperitoneal (VP) shunting as the treatment for obstructive hydrocephalus. During 1½ years, sixty patients from 6 months to 70 years were enrolled in the study and allocated into two groups by simple random sampling. Postoperative outcome was evaluated by fontanel, head size, vomiting, and infection. They concluded that early outcome (1 month) subsequent to ETV was better than VP shunt (80% success rate in ETV and 40% in shunt cohort). They reported an infection rate of 26.67% in shunt group and 3.33% in ETV group.[1]

This wide range of patients' age is not acceptable which affects the reliability of the results in each group. They were asked to limit the study population to only children (as most patients were in pediatric age group). Including patients in this wide range of age forms a very nonhomogenous population which muddles the success rate of ETV. Adult hydrocephalus population has a high success rate of ETV procedure even in long-term follow-up (87%). The success rate in initial ETV has been reported to be more than secondary ETV which was done after failure of the first ETV.[2] Patients in the age of infancy, especially in the first 12 months of life, have a lower success rate for ETV comparing to children in older age like age of 10–19 years.[3] This higher failure rate has been described with insufficient cerebrospinal fluid absorption by arachnoid villi in young age despite active cerebrospinal fluid flow from ETV hole.[4] On the other hand, infants have a higher rate of gliosis or arachnoid membrane formation at ETV fenestration area which predisposes these young patients to more ETV failure.[5] Due to this higher failure rate of ETV and all of early and late complications of VP shunt, many studies tried to find some ways that can increase the ETV success rate. One approach that was considered to increase the success rate of ETV was using choroid plexus cauterization (CPC) at the same time of performing ETV. Adding CPC to ETV in infants could increase the success rate from 48.6% to 81.9% as compared to ETV alone in infants.[6]

In a study from Children's Medical Center in Tehran, we conducted a randomized clinical trial in patients younger than 12 months with obstructive hydrocephalus and performed ETV/CPC or VP shunting randomly in 50 patients. The overall success rate in 6–36-month follow-up period was 68.2% for ETV/CPC. The success rate between ETV/CPC and VP shunt was not statistically significant ($P = 0.09$).[7]

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Farideh Nejat

Department of Neurosurgery, Children's Hospital Medical Center, Tehran University of Medical Science, Tehran, Iran

Address for correspondence:
Prof. Farideh Nejat,
Department of Neurosurgery, Children's Hospital Medical Center, Gharib Street, Postal Code 1419733151, Tehran, Iran.
E-mail: nejat@sina.tums.ac.ir

References

1. Early surgical outcome of endoscopic third ventriculostomy in the management of obstructive hydrocephalus: A randomized control trial. AJNS 2017. [In press].
2. Isaacs AM, Bezchlibnyk YB, Yong H, Koshy D, Urbaneja G, Hader WJ, *et al.* Endoscopic third ventriculostomy for treatment of adult hydrocephalus: Long-term follow-up of 163 patients. Neurosurg Focus 2016;41:E3.
3. Lam S, Harris D, Rocque BG, Ham SA. Pediatric endoscopic third ventriculostomy: A population-based study. J Neurosurg Pediatr 2014;14:455-64.
4. Koch D, Wagner W. Endoscopic third ventriculostomy in infants of less than 1 year of age: Which factors influence the outcome? Childs Nerv Syst 2004;20:405-11.
5. Wagner W, Koch D. Mechanisms of failure after endoscopic third ventriculostomy in young infants. J Neurosurg 2005;103 1 Suppl: 43-9.
6. Warf BC, Tracy S, Mugamba J. Long-term outcome for endoscopic third ventriculostomy alone or in combination with choroid plexus cauterization for congenital aqueductal stenosis in African infants. J Neurosurg Pediatr 2012;10:108-11.
7. Nejat F, Habibi Z, Navaei AA. A Randomized Controlled Trial to Compare Therapeutic Efficacy of Endoscopic Third Ventriculostomy and Ventriculoperitoneal Shunt in Infants with Obstructive Hydrocephalus. 43rd Annual Meeting of the ISPN: October 3-October 8, 2015, Izmir, Turkey; 2015.

Access this article online

Quick Response Code:

Website: www.asianjns.org

DOI: 10.4103/ajns.AJNS_51_17

How to cite this article: Nejat F. Endoscopic third ventriculostomy in the management of obstructive hydrocephalus. Asian J Neurosurg 2019;14:340.

© 2018 Asian Journal of Neurosurgery | Published by Wolters Kluwer - Medknow