Endoscopic third ventriculostomy for idiopathic normal pressure hydrocephalus

- The Effects of Endoscopic Third Ventriculostomy Versus Ventriculoperitoneal Shunt on Neuropsychological and Motor Performance in Patients with Idiopathic Normal Pressure Hydrocephalus-ENVENTOR-iNPH: Study Protocol
- Serial Assessment of Gait Changes After Interventions Using Smart Insole in a Patient With iNPH: A Proof-of-Concept Case Report
- Ventriculoperitoneal Shunting Versus Endoscopic Third Ventriculostomy for the Surgical Management of Idiopathic Normal Pressure Hydrocephalus: A Retrospective Cohort Analysis
- The effectiveness of various CSF diversion surgeries in idiopathic normal pressure hydrocephalus: a systematic review and meta-analysis
- Regulation of brain fluid volumes and pressures: basic principles, intracranial hypertension, ventriculomegaly and hydrocephalus
- A Single-Centre Experience of the Management and Surgical Outcomes of Late-Onset Idiopathic Aqueductal Stenosis
- Is endoscopic third ventriculostomy a viable treatment option for normal pressure hydrocephalus? A systematic review
- Comparison Between Ventricular and Spinal Infusion Tests in Suspected Normal Pressure Hydrocephalus

Initially reported for normal pressure hydrocephalus in 1999 [1)].

Mechanistically, it is difficult to explain why ETV would work for NPH, but it has been advocated by some [2)] in highly selected patients, using nonvalidated outcome measures, quoting post-op improvement in 69% of patients. At this time, ETV should not be considered a first-line treatment for most cases of NPH.

ETV and VPS did not differ significantly regarding their failure rate for iNPH, while ETV showed a significantly lower complication rate than VPS. However, the data available is scarce with only one RCT investigating this important matter. Further well-designed trials are necessary to investigate the clinical outcome of ETV in iNPH [3)]

The only randomized trial of endoscopic third ventriculostomy (ETV) for idiopathic normal pressure hydrocephalus (iNPH) compares it to an intervention which is not a standard practice (VP shunting using a non-programmable valve). The evidence from this study is inconclusive and of very low quality. Clinicians should be aware of the limitations of the evidence. There is a need for more robust research on this topic to be able to determine the effectiveness of ETV in patients with iNPH [4)].

1)
Mitchell P, Mathew B. Third ventriculostomy in normal pressure hydrocephalus. Br J Neurosurg. 1999; 13:382–385
2)
Gangemi M, Maiuri F, Naddeo M, et al. Endoscopic third ventriculostomy in idiopathic normal pressure hydrocephalus: an Italian multicenter study. Neurosurgery. 2008; 63:62–7; discussion 67-9

3)

Greuter L, Schenker T, Guzman R, Soleman J. Endoscopic third ventriculostomy compared to ventriculoperitoneal shunt as treatment for idiopathic normal pressure hydrocephalus: a systematic review and meta-analysis. Br J Neurosurg. 2022 Dec 20:1-7. doi: 10.1080/02688697.2022.2149697. Epub ahead of print. PMID: 36537195.

4)

Tudor KI, Tudor M, McCleery J, Car J. Endoscopic third ventriculostomy (ETV) for idiopathic normal pressure hydrocephalus (iNPH). Cochrane Database Syst Rev. 2015 Jul 29;7:CD010033. doi: 10.1002/14651858.CD010033.pub2. Review. PubMed PMID: 26222251.