

Current state of Neuroendoscopy for the treatment of Hydrocephalus.

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Background

During last decades neuroendoscopy has gained a crucial role in the treatment of the hydrocephalus not only in children but also in adult patients, with fewer overall complications than shunt insertion. The endoscopic technique has evolved and refined over past few decades, replacing traditional shunts insertion in most of obstructive and non-obstructive hydrocephalus. However, complications like hemorrhage or failure of the procedure requiring CSF diversion can occur.

Materials and Methods

We review the current state of neuroendoscopy, summarizing clinical indications and prognosis of the main techniques while illustrating with some surgical videos from cases treated at the Hospital Universitario de Canarias (HUC). Some technical aspects are discussed including complication avoidance and neuronavigation use.

Results

The literature review demonstrated that congenital hydrocephalus is the most common etiology treated by neuroendoscopy, being endoscopic third ventriculostomy (ETV) the most frequent technique performed. The role of ETV for the treatment of idiopathic normal pressure (iNPH) is discussed. Using the endoscope in patients suffering hydrocephalus has extended beyond third ventriculostomy, currently including cyst fenestration, tumor biopsy/removal, septostomy, aqueductoplasty...

Conclusions

The results indicate that ETV is very safe and reliable minimally invasive therapeutic option for all obstructive and most of communicating hydrocephalus, however the efficacy of ETV for iNPH remains controversial. Adjunctive procedures like aqueductoplasty, choroid plexus cauterization, cyst or tumour removal etc have significant role depending on the particularities of each clinical case.