

Oral Presentation

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Treatment of third ventriculostomy failure: re-fenestration or shunt?

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Clinical background

Though endoscopic third ventriculostomy (ETV) has proven to be a valid alternative to shunting for some hydrocephalic patients, the decision to re-fenestrate or shunt after ETV failure is less clear. The aim of this retrospective study was to evaluate the clinical outcome and complications for patients who required re-fenestration or shunting compared to initial ETV cases.

Materials and Methods

189 primary ETVs were evaluated between 1994 and 2002. The failures ($n = 50$), underwent a CINE Phase-Contrast (PC) MRI protocol for evaluation of fenestration patency. Patients with open fenestrations were shunted, while those with closed were explored for possible re-fenestration. The results of re-operation were compared with the results of the primary ETV. The probability of success in each group was determined statistically with using Kaplan-Meier plot.

Results

Of 189 primary ETV patients, 139 (74%) were successful at 2 years. Fifty patients showed clinical failure. On CINE PC MRI protocol, 30 of the failures showed patent CSF flow pattern and underwent shunting. Of the twenty patients with obstructed pattern, 16 were endoscopically re-explored and treated (10 re-fenestration only, 4 re-fenestration + shunt, and 2 shunt only). The remaining 4 were shunted without exploration. As a result a total of 40 of the failures were shunted and 10 were re-fenestrated endoscopically. The success rate for re-fenestration was 50% (5/10) with no complications, and a 62.5% success probability at 2 years, whereas the success rate for shunting was 58% (23/40), with a 39% complication rate and a probability of success of (72%) at 2 years. A total of 144/189 (76.1%) patients remained shunt-free.

Conclusion

The majority (3/5) of ETV failures were not due to fenestration closure and required shunting to treat a residual communicating hydrocephalus. Approximately 2/3 of the fenestrations that did appear blocked on CINE MRI studies could be re-fenestrated on re-exploration. Re-fenestration success was not as high as primary ETV success but comparable to shunting. Re-do ETV is justified as a treatment of ETV failure, especially given the low morbidity and possibility of shunt avoidance.