

Introduction

The endoscopic third ventriculostomy (ETV) has been used as the first line of treatment for obstructive hydrocephalus. There is still controversy regarding its indications and long-term results. New studies with long-term follow-up are necessary to properly establish the real benefits of this treatment.

Methods

Retrospective study of 100 hydrocephalic patients submitted to endoscopic third-ventriculostomy between May 2004 and July 2011. Their charts were reviewed for age, gender, etiology of hydrocephalus, improvement of symptoms, necessity of VP-shunts , complications and patency of ventriculostomy in the postoperative MRI. The procedures were performed with standard surgical technique (figures 1 - 4). A rigid endoscope (Minop sytem, Aesculap, B. Braun, Tuttlingen, Germany) was used in all cases.

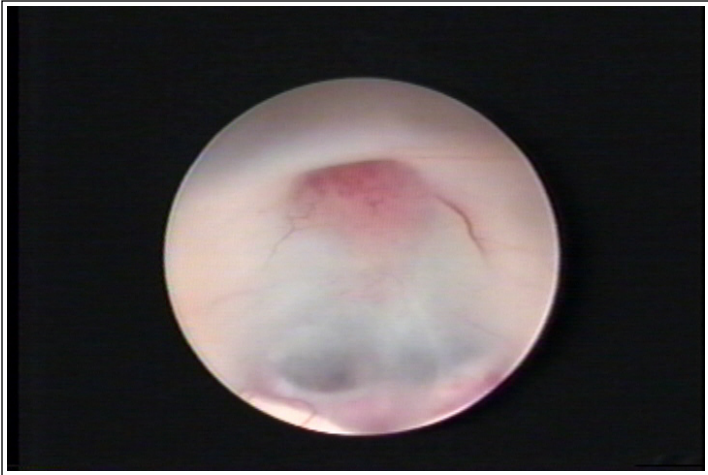


Figure 1- Endoscopic view: Floor of the third ventricle

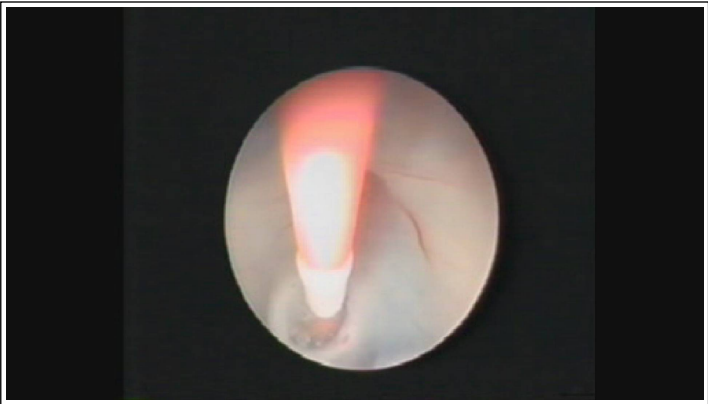


Figure 2 - Puncture of third ventricle's floor with a balloon catheter

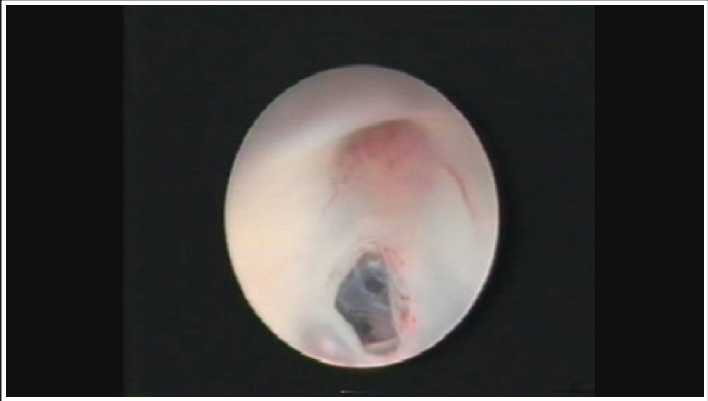
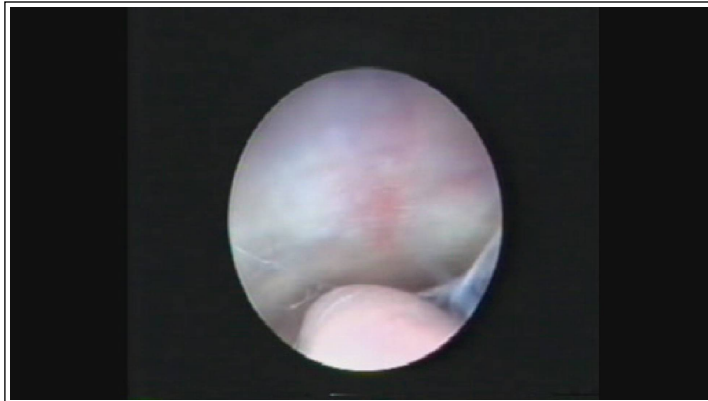


Figure 3 - Opening of the third ventricle's floor showing the Liliequist membrane.

Results

There were 52 male e 48 female patients with age ranging from 1 month to 83 years (mean 24,6 years). The patients were followed for at least 41 months. More than 50% of the patients had an obstruction of the liquor's flow at the level of aqueduct (aqueduct stenosis, brainstem tumors). The procedure was considered successful when the patients were symptoms free and did not require a shunt in 88% of the cases. All of these patients had a MRI with flow study showing patency of the ventriculostomy. There were 15 complications (meningitis and/or CSF leak) and 4% of mortality (2 patients had meningitis before the ETV).

Figure 4 - Endoscopic view: Prepontine cistern



Conclusions

ETV is an effective procedure to treat obstructive hydrocephalus with successful long-term results. Meningitis can be a serious complication but probably less frequent in ETV than in shunts.

Learning Objectives

By the conclusion of this session participants should be able to identify ETV as a reliable option to treat obstructive hydrocephalus.

References

Hellwig, D.; Grotenhuis, J.A.; Tirakotai, W.; Riegel, T.; Schulte, D.M.; Bauer , B.L.; Bertalanffy, H. : Endoscopic third ventriculostomy for obstructive hydrocephalus. Neurosurg Rev (2005) 28: 1–34.

Zymberg ST, Marinello JLP, Filho FAVG, Cavalheiro S. Endoscopic Third Ventriculostomy. J Bras Neurocirurg 19 (2): 42-47, 2008.

Grunert P., Charalampaki C., Hopf N., Filippi R.:The role of third ventriculostomy in the management of obstructive hydrocephalus.Minim Invasive Neurosurg 2003 Feb;46(1):16-21