

Fibrin Sealant Patch for Transsphenoidal Dural Closure Reduces Postoperative Morbidity

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Introduction

Cerebrospinal fluid (CSF) leakage post transsphenoidal surgery occurs in up to 10% of cases with reoperation needed in about 1% and meningitis associated in estimated 1,5-10%. We aimed to compare the rate of CSF leak between both endoscopic and microsurgical techniques and to define the impact of fibrin sealant closure on postoperative morbidity.

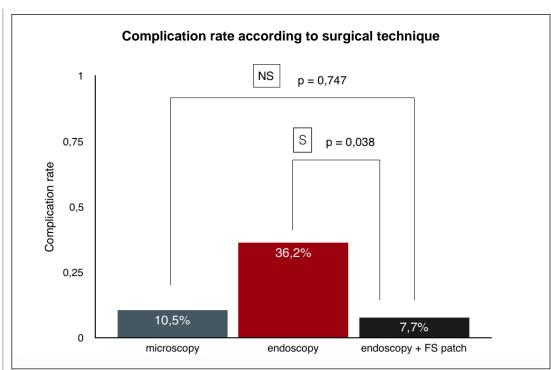
Methods

We retrospectively compared both transsphenoidal techniques (endoscopic vs microscopic) for pituitary adenoma resection in 303 consecutive single surgeon patients between 1994 and 2015. We subsequently compared intra- and postoperative outcomes before and after the introduction of dural closure, using fibrin sealant.



Learning Objectives

Compare both transsphenoidal techniques for pituitary surgery, reduce postoperative complication rates in endoscopic technique, understand the importance of fibrin sealant for dural closure



Results

The fully endoscopic technique (n=138), compared to the traditional microscopic technique (n=152), leads to more intraoperative complications (25,4% vs. 7,2%, p<0,001) such as CSF leak (16,9% vs. 7,4%), hemorrhage (6,6% vs. 2%), non-resection (1,4% vs. 0%) and non-visualization (1,4% vs. 0%), as well as more postoperative complications (36,2% vs. 10,5%, p<0,001), especially a higher CSF leak rate (7,2% vs. 1,3%, p=0,16) and meningitis rate (2,2% vs. 0,7%, p=0,35) when traditional dura mater closure is used. A clear drop in the postoperative complication rate has been achieved by the introduction of fibrin sealant for dural closure with the endoscopic technique (n=13) with no postoperative CSF leak nor meningitis observed, leading to similar intraoperative (7,7% vs. 7,2%, p=1) and postoperative (7,7% vs. 10,5%, p=0,747) complication rates compared to those observed with traditional microscopic technique.

Conclusions

Endoscopic transsphenoidal surgery for resection of pituitary adenoma is equivalent in terms of postoperative morbidity to microscopic technique when associated with fibrin sealant for dural closure. Further studies are needed to explore the impact of this new sealant.