

Skull base reconstruction in the extended endoscopic transsphenoidal approach for suprasellar lesions.

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Publication Date: 2007

Abstract:

Object. The extended transsphenoidal approach to the suprasellar region has the advantages of minimal invasiveness and brain manipulation in the surgical treatment of small to medium lesions. At the same time, however, it carries a higher risk of postoperative cerebrospinal fluid (CSF) leakage and related complications than those for the standard transsphenoidal approach. Effective reconstruction of large skull base defects is a major concern in such extended approaches and remains challenging. **Methods.** Between January 2004 and April 2006, 21 patients affected by different suprasellar lesions underwent the extended endoscopic endonasal transtuberculum-transplanum approach. Three different techniques were used for the skull base reconstructions. In all cases, dehydrated human pericardium (Tutoplast) for dural reconstruction and a copolymer of L-lactic acid and glycolic acid (LactoSorb) as a bone substitute were used. Collagen sponges, fibrin glue, and an inflated Foley balloon catheter were also used to fill the sphenoid sinus cavity. **Results.** Two cases of postoperative CSF leaks (9.5%) and one case of mycotic sinusitis (4.8%) occurred following the intradural (inlay) and intraextradural (inlay-overlay) graft positioning. No cases of postoperative CSF leakage occurred in cases in which the extradural-only reconstruction procedure was applied. No meningitis or other complications related to the closure were noticed. **Conclusions.** The rate of postoperative CSF leakage after an extended approach to the suprasellar area is higher compared with that following standard pituitary surgery. Reconstruction after craniopharyngioma surgery exposes patients to an increased risk of

postoperative CSF leaks. The extradural (overlay) technique was found to be the most effective in assuring a watertight closure.