Sellar repair with resorbable polyglactin acid sheet and fibrin glue in endoscopic endonasal transsphenoidal surgery.

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Abstract:

Background: Cerebrospinal fluid leakage after transsphenoidal surgery represents a serious problem. Various methods to prevent postoperative CSF leakage are available, but immediate and tight dural closure is still difficult. The efficacy of a novel sellar repair was described. Methods: The sellar repair using absorbable PGA sheet and fibrin glue was applied to 18 consecutive patients with sellar tumors that include 13 pituitary adenomas, 2 craniopharyngiomas, 2 Rathke's cleft cysts, and 1 meningioma within 135 patients who were treated with endoscopic endonasal transsphenoidal approach. The reaction speed and strength between PGA sheets and fibrin glue were examined in vitro. Results: Polyglactin acid sheets were adhered to the rabbit skin with fibrin glue within 3 minutes and withstood a pressure of more than 220 mm Hg. Postoperative CSF leakage of the patients was not observed in any patients, and excellent adhesion of the PGA sheets to surrounding mucosa was estimated by endoscopic observation after the surgery. Conclusions: Repair of the sellar floor with PGA sheet and fibrin glue is a safe and effective method to prevent postoperative CSF leakage, which decreases the necessity for lumbar drainage after the operation.