

Free Mucosal Graft Technique for Sellar Reconstruction After Pituitary Surgery: Outcomes of a Cohort of 301 Patients

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INTRODUCTION

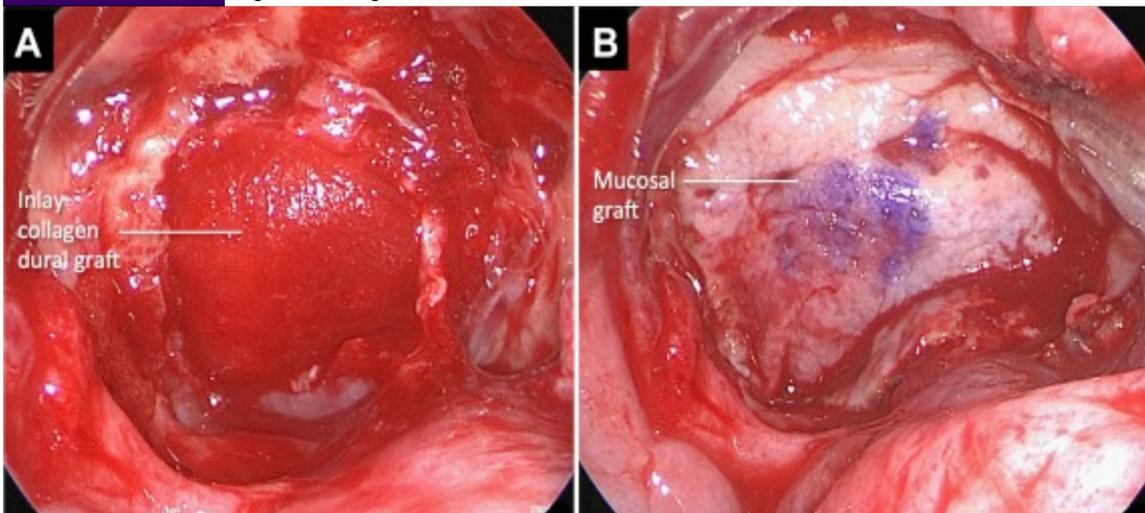
Cerebrospinal fluid (CSF) leaks are a well-known complication of pituitary surgery. While the nasoseptal flap, pedicled on the posterior septal branch of the sphenopalatine artery, is commonly used for skull base reconstruction after pituitary surgery, it leaves an area of exposed cartilage on the nasal septum and is also prone to causing nasal discomfort, crusting, and possibly anosmia. In recent years, the free mucosal graft technique, which involves harvesting the mucoperiosteum from either the nasal floor and lateral wall of the inferior meatus or the middle turbinate and then transferring the resultant tissue to the sellar defect, has been found to be easy and safe, and causes minimal donor site morbidity. It has also been shown to be associated with a decrease in the rate of postoperative CSF leaks.

RESULTS

The strong majority (n = 252) of these patients had primary pituitary macroadenomas (over 10mm); 28 had microadenomas, 13 had Rathke's cleft cysts, 6 had recurrent macroadenomas, 1 had a macroprolactinoma, and 1 had metastasis from prostate carcinoma. Of these, 275 underwent reconstruction with a free mucosal graft, 16 underwent reconstruction with a nasoseptal flap, and 13 had no mucosal reconstruction. Rates of postoperative CSF leaks were 7.7% for patients who had no mucosal reconstruction, 15.4% for patients with nasoseptal flap reconstruction only, and 0.72% for patients with free mucosal graft reconstruction. Rates of other postoperative complications remained low for all patients, with one free mucosal graft patient developing a postoperative hematoma and another developing meningitis.

FIGURE 3

Images obtained with a 0° endoscope. (A) Inlay collagen dural graft. (B) Overlay free mucosal graft covering the entire defect.



CONCLUSION

The free mucosal graft provides excellent sellar reconstruction for endonasal endoscopic pituitary resection, with a very low CSF leak rate and low morbidity.

REFERENCES

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Scagnelli, R. J., Patel, V., Peris-Celda, M., Kenning, T. J., & Pinheiro-Neto, C. D. (2019). Implementation of free mucosal graft technique for sellar reconstruction after pituitary surgery: outcomes of 158 consecutive patients. *World neurosurgery*, 122, e506-e511.

PURPOSE

The present study examines CSF leak rates in a cohort of patients who underwent pituitary surgery at Albany Medical Center.

METHOD

A retrospective chart review was conducted of 301 patients who underwent surgery from 2014 to 2024 at a single institution.

FIGURE 1

Patient Pathology

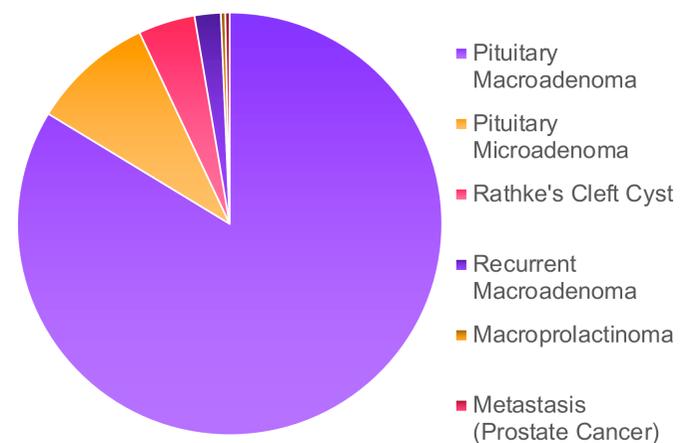


FIGURE 2

Reconstruction Technique

