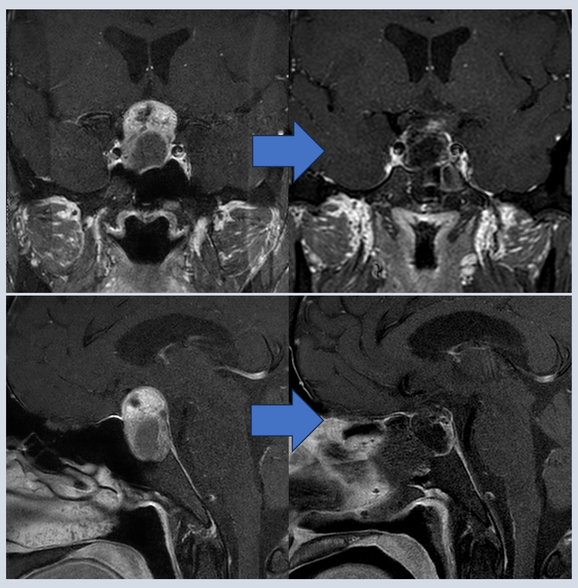
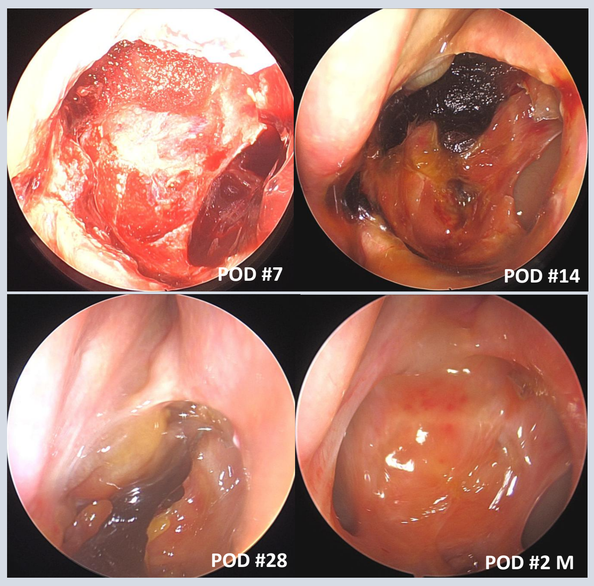
Various sellar reconstruction techniques in cases with Grade 1 & 2 CSF leakage during Endoscopic TSA for Pituitary adenoma

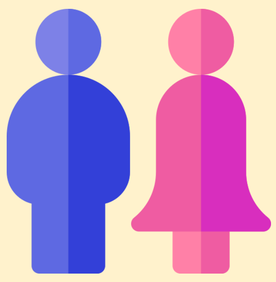
Endoscopic transsphenoidal approach(ETSA) for pituitary macroadenoma has established itself as a representative surgical method for operating pituitary tumors. Intraoperative CSF leakage is a concern for all surgeons performing ETSA. For low to moderate intraoperative Cerebrospinal Fluid (CSF) leakage (Grade 1 & 2), our study demonstrates that a combination of sphenoid sinus mucosa reconstruction and fat grafting (with or without dura suture) effectively minimizes the need for revision surgeries. This means that using a naso-septal flap may not be necessary for such cases.

METHODS: From May 2017 to December 2022, 100 ETSA were performed. Emphasizing cases with low to moderate intraoperative Cerebrospinal Fluid (CSF) leakage, it evaluates the efficacy of various reconstruction methods in reducing postoperative complications and the need for revision surgery. A specific focus is placed on the technique combining sphenoid sinus mucosa reconstruction with a fat graft (with or without dura suture), highlighting its role in minimizing reoperation rates.





ETSA for PA
N=100

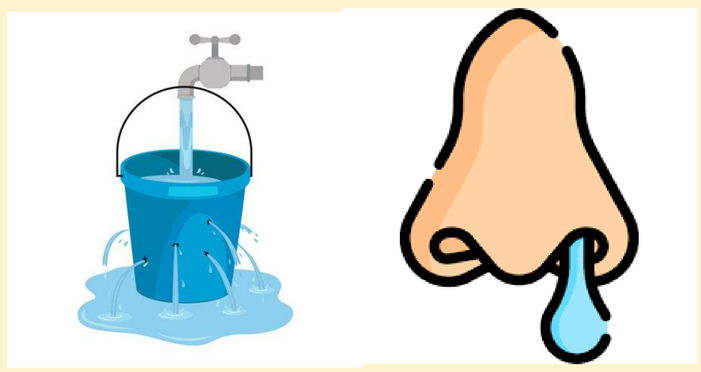


48: 52

NFPA 78 (76%)
GHPA 5 (4.4%)
ACTH 4 (4.4%)
PRL 11 (12.2%)
TSH 2 (2.22%)

GTR & NTR

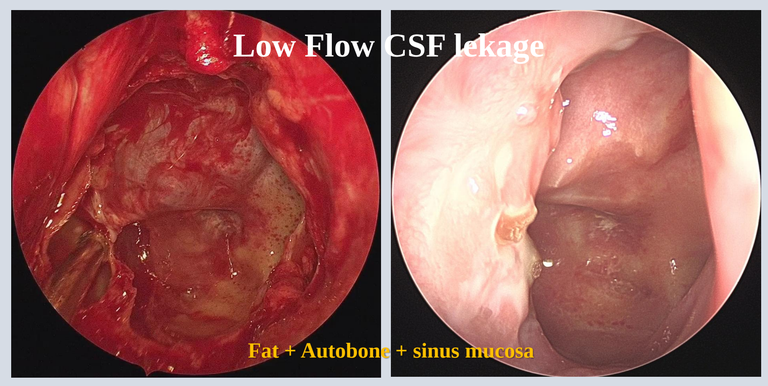
75.5%

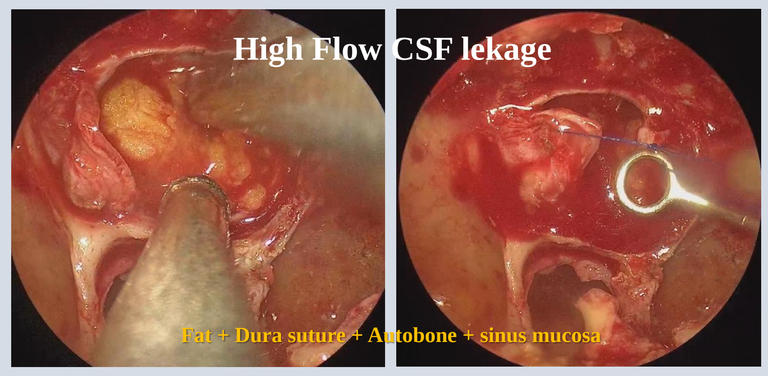


Intraop CSF leak
47%

Post CSF leakage
1%

Revision surgery
0%





"The most important principle in reconstruction is to restore it to its original state without using artificial hemostatic agents or other artificial materials."

SUMMARY: The study concludes that customized sellar floor reconstruction techniques, particularly the combination of sphenoid sinus mucosa reconstruction and fat grafting, can substantially decrease the risk of postoperative complications in ETSA. These findings advocate for the adoption of such techniques in routine clinical practice to enhance surgical outcomes and patient safety in the management of pituitary tumors. Further research is recommended to refine these methods and assess their effectiveness in high-flow CSF leakage cases.

HYUK JIN OH, KYUNG HWAN KIM

Department of Neurosurgery, SoonChunHyang University Cheonan Hospital, Cheonan, Korea
Department of Neurosurgery, Chungnam national University Hospital, Daejeon, Korea