

Medical Student: Jesse H. Cheng (L2)

LSU Health Sciences Center, New Orleans, LA

Mentor: Dr. Stephen Hernandez M.D. LSUHSC, Department of Otolaryngology - **Our Lady of the Lake Regional Medical Center**

Title: Surgical Management of Spontaneous Anterior Skull Base CSF Leaks in Idiopathic Intracranial Hypertension

Authors: J. Christian Lemoine, MD; Jesse Cheng, M2; Stephen Hernandez, MD

Introduction: Idiopathic intracranial hypertension (IIH) disproportionately affects overweight women and carries with it consequential complications like papilledema and spontaneous cerebrospinal fluid (CSF) leaks. These leaks cluster along the anterior skull base, most often at the lateral lamella of the cribriform plate or the lateral sphenoid recess. Traditionally, surgical standards leaned towards endoscopic transnasal repair, often paired with lumbar drains, and utilizing multi-layer reconstructions (vascularized tissue). More recent data has begun to challenge this approach, suggesting single-layer repair is often adequate. Little research has examined whether a single-layer free tissue repair without lumbar drain proves as effective.

Objective: To demonstrate that a single-layer free tissue repair without a lumbar drain is sufficient for most IIH-associated anterior skull base CSF leaks, while identifying pre-operative predictors of failure to better select patients who may require more aggressive intervention.

Methods: We performed a single-institution, single-surgeon retrospective review of all spontaneous anterior skull base CSF leaks associated with IIH from 2019 through 2025, analyzing leak location, flow rate, presence of encephalocele, recurrence, and patient demographics to identify who fared well with the conservative approach — and who did not (age, BMI, leak location, and flow rate).

Results: 45 patients met inclusion criteria. 42 were female, 3 male. The average age was 52.2 years, average weight 102 kg, and average BMI 37.3 with 39 patients carrying a BMI over 30. 25 were at the cribriform plate, 12 at the lateral sphenoid recess, and 8 at other locations. 33 repairs used free tissue while 13 used vascularized tissue. The overwhelming majority (39) were low flow leaks. Only 2 patients experienced recurrence, and both had undergone initial repair with a vascularized flap. 3 patients received a lumbar drain at initial repair, and one of the two recurrences required lumbar drain placement at the second surgery. 26 patients underwent single-layer repair with a free mucosal graft, with an additional 6 receiving a two-layer repair using Biodesign graft inlay and free mucosal overlay.

Conclusions: The data raises the question: are we overtreating most of the patients that receive multi-layer repairs? All patients who underwent single-layer free mucosal graft repair—even those with high-flow leaks—had no recurrence, suggesting a conservative approach may be adequate for the majority. The 2 recurrences occurred exclusively in the vascularized flap group, though a limited sample makes it difficult to draw firm conclusions. Larger studies are needed, but the data presented should elicit more investment into viewing these studies.

