

# Frontal sinus posterior wall fracture

Frontal sinus fracture of the posterior wall accompanied by nasofrontal duct injury require surgical correction.



Many patients with mild to moderately severe breaches of the posterior wall of the frontal sinus can be managed safely and effectively by techniques that preserve the anatomy and function of the frontal sinus <sup>1)</sup>.

CT image guidance for traumatic frontal sinus fractures repair offers more accurate osteotomy and elevation of the anterior table without increased operative times or untoward sequelae <sup>2)</sup>.

## Case series

Bhavana et al. treated five cases of traumatic cerebrospinal fluid rhinorrhea, and the mean follow-up is 1 year (range: 10-14 months). The frontal sinus is opened by making a small stab incision (frontal trephine), and the defect site is localized by visualization via endoscope through the trephine. The repair is then performed with fat, bone graft, and fibrin glue.

Closure of the defect was achieved in a single stage in all the patients, and none of them had a recurrence of leak in the 1-year follow-up period.

This is a good technique for superiorly and laterally placed posterior table defects of the frontal sinus with minimal morbidity and excellent closure rates <sup>3)</sup>.

## Case reports

A 9 year-old male sustained multiple maxillofacial fractures after falling from a two-store building. Frontal sinuses suffered a bilateral non-displaced linear fractures extending into the anterior and posterior walls. Magnetic resonance imaging (MRI) at this time showed a small encephalocele extending into the right frontal sinus. Operative repair was performed using an Endoscopic-Assisted Trephination approach <sup>4)</sup>.

<sup>1)</sup>

Freeman JL, Winston KR. Breach of Posterior Wall of Frontal Sinus: Management with Preservation of the Sinus. World Neurosurg. 2015 Jun;83(6):1080-9. doi: 10.1016/j.wneu.2014.12.023. Epub 2014 Dec 18. PubMed PMID: 25527881.

<sup>2)</sup>

Lee JC, Andrews BT, Abdollahi H, Lambi AG, Pereira CT, Bradley JP. Computed tomography image guidance for more accurate repair of anterior table frontal sinus fractures. J Craniofac Surg. 2015 Jan;26(1):e64-7. doi: 10.1097/SCS.0000000000001246. PubMed PMID: 25569422.

<sup>3)</sup>

Bhavana K, Kumar R, Keshri A, Aggarwal S. Minimally Invasive Technique for Repairing CSF Leaks Due

to Defects of Posterior Table of Frontal Sinus. J Neurol Surg B Skull Base. 2014 Jun;75(3):183-6. doi: 10.1055/s-0033-1363503. Epub 2014 Mar 3. PubMed PMID: 25072011; PubMed Central PMCID: PMC4078189.

4)

Tarrats LA, Torre-León C, Almodóvar G, Portela JC. Endoscopic- Assisted Trephination approach for repair of Frontal Sinus posterior wall fracture in a Child. Bol Asoc Med P R. 2015 Apr-Jun;107(2):27-8. PubMed PMID: 26434078.

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