

# Endoscopic assisted cranioplasty for repair of an isolated anterior table frontal sinus fracture

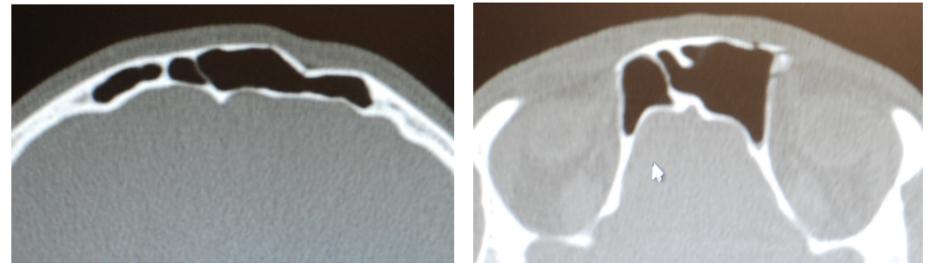
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## Introduction

Frontal sinus fractures account for 5 to 15% of all maxillofacial trauma. A myriad of options exist for repair depending on the extent of injury. Involvement of the frontal recess or posterior table make management inherently more difficult and can result in serious complications. In contrast, isolated anterior table fractures carry lower risk for long term morbidity. Traditional repair of isolated anterior table injuries involves a coronal incision with reduction of the fracture pattern and rigid fixation. Though generally successful, the approach entails a relatively long incision and resultant scar, prolonged recovery, scalp numbness, and associated risk of facial nerve injury. An alternative, aesthetic approach to isolated anterior table injuries is endoscopic assisted repair which eliminates the need for a long incision and wide elevation.

## Pre-Operative Imaging



Preoperative CT scan axial views. A comminuted depression of the anterior table of the left frontal sinus near the floor of the sinus is seen. There was no involvement of the nasofrontal outflow tract.



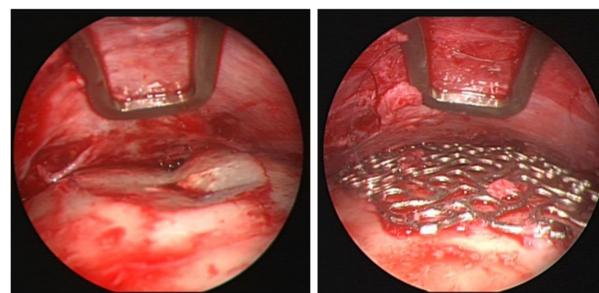
A 2 x 2 cm depression is present over the left medial orbit with palpable bony step off and tenderness.

## Case Report

We present the case of a 31 year old gentleman who sustained a depression deformity over the left forehead after accidentally colliding heads with his dog. His injury was limited to an isolated left lateral anterior table frontal sinus fracture, without involvement of the nasofrontal outflow tract or posterior table. Despite edema from the injury, an obvious depression was present over the fractured area.

A left paramedian scalp incision (4 cm in length) was performed. A subperiosteal dissection was performed using endoscopic assistance to visualize the fracture pattern, including dissection of the left lateral superior orbital rim. A titanium mesh implant was contoured and used for reconstruction. Several small stab incisions were made to permit percutaneous screw placement to secure the mesh. While reduction of the depressed fracture was not performed, the implant allowed for recontouring of the anterior table deformity with a pleasing cosmetic outcome and very limited perioperative morbidity. The patient was discharged on the same day of surgery. Four months after the surgery, the patient was pleased with the cosmetic outcome.

## Intra-Operative and Post-Operative Imaging



Endoscopic view of anterior table frontal sinus fracture. Recontouring of the deformity seen with titanium mesh implant.



4 month follow up visit. A cosmetically pleasing contour was re-established in the previously depressed frontal region. Stab incisions and scalp incision are well healed.

## Conclusion

This case illustrates an aesthetic approach to repair of isolated anterior table frontal sinus deformities. A favorable cosmetic outcome was achieved while avoiding morbidity associated with a traditional coronal repair.

## References

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