

## Upper Eyelid Approach to Anterior Wall Frontal Sinus Fractures

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### Abstract

**Background:** Treatment of frontal sinus fractures is tailored to the degree of involvement of the anterior and posterior walls and the nasofrontal ducts. Frontal sinus fractures are generally treated through a coronal incision although attempts have been made to treat some anterior wall fractures endoscopically to avoid the morbidity of the coronal approach. We have utilized the upper blepharoplasty incision to treat frontal sinus fractures not requiring posterior wall or nasofrontal duct treatment.

**Methods:** An upper lid incision at the apex of upper lid sulcus is performed and a preseptal plane is established. A combined supratrochlear and supraorbital neurovascular pedicle is dissected and maintained. Superiosteal dissection is carried out to address anterior sinus wall and orbital roof fractures as necessary. Three consecutive patients were treated with this technique. Pre and post-operative CT scans were obtained.



Figure 1. Intraoperative view of reconstruction of anterior wall frontal sinus fracture with an upper eyelid incision. Patient has a left sided isolated anterior wall fracture. Palpable defect is marked on the forehead.

**Results:** Excellent forehead contour was obtained in all cases. All patients felt the scar was not noticeable. No enophthalmos or exophthalmos was present in the patient with concomitant orbital roof fracture.

**Conclusions:** The upper lid approach offers excellent exposure for the orbital roof and anterior sinus wall for the repair of many fractures. Patients in this series reported no aesthetic complaints regarding forehead contour or eyelid scar. Excellent exposure to the superior orbital rim and orbital roof is an advantage over endoscopic methods, as is the opportunity for direct access for fixation. This approach can be considered for use by facial trauma surgeons to avoid coronal incisions based on pre-operative CT findings.

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