

# Preventing and Managing Complications in Frontal Sinus Surgery



Jean Anderson Eloy, MD<sup>a,b,c,d,\*</sup>, Peter F. Svider, MD<sup>e</sup>,  
Michael Setzen, MD<sup>f,g</sup>

## KEYWORDS

- Frontal sinusitis • Balloon catheter dilation • Frontal sinusotomy
- Endoscopic sinus surgery • Endoscopic frontal sinus surgery • Orbital injury
- Cerebrospinal fluid leak • Frontal sinus outflow tract

## KEY POINTS

- Preoperative management encompasses appropriate patient selection. With a few exceptions, patients undergoing surgical interventions for frontal sinusitis should have exhausted medical management options.
- The preoperative assessment also includes detailed evaluation of imaging for the integrity of the lamina papyracea, the presence of an extracranial anterior ethmoid artery, and anatomic variants impacting the frontal sinus outflow tract, such as accessory frontal sinus cells.
- A comprehensive informed consent includes frank discussion of the potential for significant adverse events, most notably anosmia, orbital complications, and cerebrospinal fluid rhinorrhea.

*Continued*

---

Financial Disclosures: None.

Conflicts of Interest: M. Setzen: Speaker's Bureau for Meda and Advisory Board for Merck and Lannett (not related to current subject).

<sup>a</sup> Department of Otolaryngology–Head and Neck Surgery, Rutgers New Jersey Medical School, 90 Bergen Street, Suite 8100, Newark, NJ 07103, USA; <sup>b</sup> Center for Skull Base and Pituitary Surgery, Neurological Institute of New Jersey, Rutgers New Jersey Medical School, Newark, NJ, USA; <sup>c</sup> Department of Neurological Surgery, Rutgers New Jersey Medical School, Newark, NJ, USA; <sup>d</sup> Department of Ophthalmology and Visual Science, Rutgers New Jersey Medical School, Newark, NJ, USA; <sup>e</sup> Department of Otolaryngology–Head and Neck Surgery, Wayne State University School of Medicine, Detroit, MI, USA; <sup>f</sup> Rhinology Section, North Shore University Hospital, Manhasset, NY, USA; <sup>g</sup> Department of Otolaryngology, New York University School of Medicine, New York, NY, USA

\* Corresponding author. Endoscopic Skull Base Surgery Program, Otolaryngology Research, Rhinology and Sinus Surgery, Department of Otolaryngology–Head and Neck Surgery, Neurological Institute of New Jersey, Rutgers New Jersey Medical School, 90 Bergen Street, Suite 8100, Newark, NJ 07103.

E-mail address: [jean.anderson.eloy@gmail.com](mailto:jean.anderson.eloy@gmail.com)

Otolaryngol Clin N Am 49 (2016) 951–964

<http://dx.doi.org/10.1016/j.otc.2016.03.019>

[oto.theclinics.com](http://oto.theclinics.com)

0030-6665/16/\$ – see front matter © 2016 Elsevier Inc. All rights reserved.

*Continued*

- Newer techniques, such as balloon catheter dilation of the frontal sinus, offer a promising and less invasive alternative to more extensive frontal sinusotomies; however, practitioners should recognize their limitations based on individual experience with frontal sinus surgeries, and should not simply perform technically “easier” approaches in situations with complicated anatomy.
- If practitioners have limited comfort with these techniques in cases in which they are indicated, these patients would benefit from referral to surgeons with adequate experience in advanced frontal sinusotomy.

**Abbreviations**

CSF	Cerebrospinal fluid
BCD	Balloon catheter dilation
ESS	Endoscopic sinus surgery
IGS	Image-guided surgery

**INTRODUCTION**

The increased utilization of endoscopic sinus surgery (ESS) over the past 30 years has triggered the development of novel approaches along with myriad accompanying technologies. Frontal sinus surgery in particular has undergone an evolution from being among the most extensive of paranasal sinus procedures to a predominantly outpatient, minimally invasive undertaking. Nonetheless, the intimate proximity of the frontal sinus to the skull base and orbit means frontal sinus surgery is still fraught with considerable potential morbidities, rendering a smaller margin for error relative to other sinonasal locations. Although recent advances in optical technologies and instrumentation have improved visualization and improved access, the frontal sinus outflow tract can still be easily disrupted. The rapid proliferation of new technologies over the past 10 years, including drug delivery and balloon catheter dilation (BCD) systems, further reinforces the importance of familiarity with anatomic considerations unique to the frontal sinuses. This review focuses on complications in frontal sinus surgery, both those specific to the frontal sinuses and those similar to the other sinuses, as well as strategies for avoiding deleterious sequelae. Rather than providing an exhaustive review of every possible complication, we focus on the most frequent and impactful complications in the context of common surgical techniques. Our hope is that this review serves as a useful resource for sinus surgeons at all levels, including the resident in training, rhinology fellow, general otolaryngologist, and experienced rhinologist.

**PREOPERATIVE EVALUATION*****Patient Selection and Counseling***

As in all surgical procedures, appropriate patient selection is key for avoidance of harmful sequelae. Practitioners should ensure that patients undergoing any frontal sinus procedure have exhausted adequate medical management options. With few exceptions, surgical intervention should be considered only after unsuccessful or partially effective medical treatment has been undertaken.<sup>1</sup> Exceptions include but are not limited to obvious anatomic and structural features interfering with frontal sinus outflow tract, suspicion for neoplasm, frontal sinusitis with impending complications and consideration of other lesions, such as mucoceles, that may have local effects on surrounding critical structures.

Download English Version:

<https://daneshyari.com/en/article/4123369>

Download Persian Version:

<https://daneshyari.com/article/4123369>

[Daneshyari.com](https://daneshyari.com)