

## Abstract

**Introduction:** Balloon sinuplasty (BSP) is a common treatment modality used in the management of chronic rhinosinusitis (CRS) in the United States. Although it's a procedure that's gained increasing popularity since its inception, minimal self-reported data on its utilization and specifically complications have been presented in the literature. The main aim of this study was to describe current practices and complications experienced during frontal sinus BSP among an American otolaryngologic community.

**Methods:** An anonymous 20-question online survey was distributed to the members of the American Osteopathic Colleges of Ophthalmology and Otolaryngology-Head and Neck Surgery (AOCCO-HNS) about frontal sinus balloon sinuplasty utilization and its complications. Data were collected from August 1, 2022, to August 30, 2022. Questions were listed as multiple choices or a percentage sliding bar. The data was collected using a commercial online survey service site (Qualtrics). Results were reported as frequencies, means, and percentages.

**Results:** Forty-two respondents participated in the survey. The majority of respondents practiced in a community setting (80.95%), while 11.90% practiced within a hybrid model, and 7.14% in an academic setting. The southeast had the largest proportion of respondents who performed balloon sinuplasty (30.95%), compared with the midwest (28.57%), southwest (23.81%), northeast (11.90%), and northwest (4.76%). Respondents reported using BSP as a primary procedure an average of four cases per month, with a median of one case, and a range of 0-31 cases. They further estimated utilizing BSP primarily for frontal sinus disease with an average of 35.72 cases per year, a median of 12, and a range of 0-361 cases per year. Regarding using BSP in a hybrid setting (FESS primarily and BSP Secondarily), respondents reported an average of 5.03 cases per month, with a median of three, and a range of 0-20. They further reported an average of 48.62 cases per year, with a median of 31, and a range of 0-189 cases per year. On average, 50.52% of cases were performed in the hospital setting, followed by in-office (48.50%), and in a surgery center (42.40%). The percent usage of BSP as a supplement to functional endoscopic sinus surgery (FESS) for Chronic Rhinosinusitis without nasal polyposis (CRSsNP) was 55.27% vs. 52.29% for Chronic Rhinosinusitis without nasal polyposis (CRSwNP). Overall, perioperative nasal packing was used in 15.3% of cases for epistaxis control; intraoperative (11.72%) vs. postoperative (3.62%). They also reported postoperative headaches lasting longer than 24 hours in 9.86% of cases, acute bacterial sinusitis in 3.52% of cases, and tooth/facial numbness and 0.86% of cases. In regard to long-term complications, the group reported postoperative synechiae in 5.10% of patients, orbital complications in 0.14% of cases, and skull base complications in 0.10% of cases. One respondent reported a complication of sphenopalatine fossa dilation, which has not been reported in prior literature.

## Conclusions:

Through a survey of one of the largest otolaryngologic academies in the United States, utilization, location, and complications of BSP were reported. The most common adverse events in frontal BSP are epistaxis with intranasal packing, headache, synechiae, ABRS, tooth/facial numbness, orbital complications, and skull base complications. We also report the first incidence of an inadvertent sphenopalatine fossa dilation as an adverse event in BSP.