



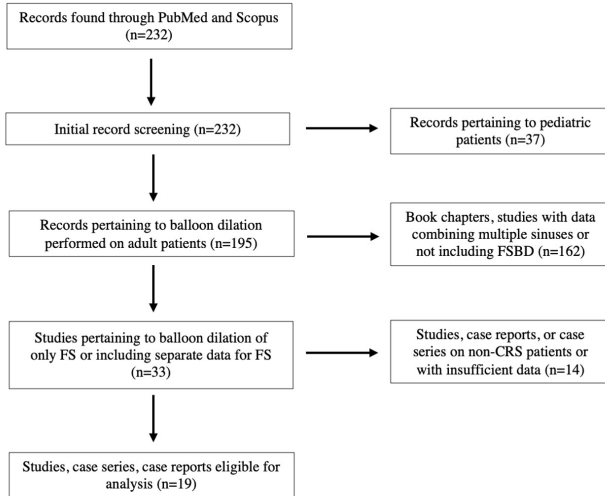
Systematic Review of Frontal Sinus Balloon Dilatation

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Background

Frontal sinuses are challenging areas to access during endoscopic sinus surgery due to the complex anatomy. This systematic review analyzes studies on frontal sinus balloon dilatation to determine if this treatment method is effective for chronic rhinosinusitis patients.

Methods



Results

- 19 studies, case series, case reports eligible for review
- 637/702 (90.7%) of frontal sinuses successfully dilated with balloon
- 23 patients required repeat dilatation or endoscopic sinus surgery

Results

- Lund-McKay scores: 1.58 ± 0.17 pre-dilatation and 0.82 ± 0.17 post-dilatation ($p=0.15$) ($n=3$)
- Significant difference in pre- and post-dilatation Zinreich modified Lund-MacKay scores
- SNOT scores: 49.9 ± 8.0 pre-dilatation and 14.8 ± 3.8 post-dilatation ($p<0.05$)
- Epistaxis was the most common adverse event. No skull base dehiscence, orbital dehiscence, or mucoceles

Conclusion

Frontal sinus balloon dilatation is an effective treatment for patients suffering from chronic rhinosinusitis, however, additional studies are required, specifically those comparing to endoscopic surgery.

References

1. Marzetti A, Tedaldi M, Passali FM. The role of balloon sinuplasty in the treatment of sinus headache. *Otolaryngol Pol.* 2014;68(1):15-19.
2. Minni A, Dragonetti A, Sciuto A, et al. Use of balloon catheter dilatation vs. traditional endoscopic sinus surgery in management of light and severe chronic rhinosinusitis of the frontal sinus: a multicenter prospective randomized study. *Eur Rev Med Pharmacol Sci.* 2018;22(2):285-293.

Author	Type of Study	Number of Patients	Number of Frontal Sinuses	Age (yrs)	Diagnosis	Exclusion	Intervention
Bolger (2007)	Prospective	---	124	---	CRSsNP, CRSwNP	Severe polyposis, extensive previous surgery, CF, ciliary dysfunction, sinonasal tumors, pregnancy	Balloon dilatation (Acclarent)
Wexler (2008)	Case Report	1	2	32	CRS	---	Balloon dilatation (Acclarent)
Luong (2008)	Retrospective	6	7	36-68	CRSsNP	---	Balloon dilatation (LacriCATH; 5 or 7mm)
Catalano (2009)	Prospective	20	29	52.9	CHS (Samter's triad), CRSsNP, or CRSwNP	Non-opacified sinuses	Balloon dilatation (Acclarent)
Hopkins (2010)	Retrospective	10	20	37-76	CRS	---	Balloon dilatation (Acclarent)
Wycherly (2010)	Retrospective	13	24	52	CRSsNP w/previously failed surgery	CRSsNP	Balloon dilatation (Acclarent)
Eloy (2011)	Retrospective	3	3	48-80	CFS	---	Balloon dilatation (Entellus)
Heimgartner (2011)	Retrospective	---	104	45	CRS	---	Balloon catheter
Plaza (2011)	Prospective, double-blinded, randomized	34	50 (26 study, 24 control)	41.25	CRSsNP	Previous sinus surgery, severe CRS, Samter's triad	Endoscopic sinus surgery w/balloon dilatation (Acclarent) vs Draf I/IIa
Yanagisawa (2011)	Case Report	1	1	29	CRS	---	Balloon dilatation (Acclarent)
Karanfilov (2012)	Prospective	---	268	---	CRS	Severe polyposis, CF, sinonasal tumors, pregnancy	Balloon dilatation (Acclarent)
Marzetti (2013)	Prospective, randomized	75 (40 ESS, 35 BSS or hybrid)	---	22-72	Suspected rhinosinusitis w/sinus headaches	Nasal polyps, previous sinus surgery, rhinitis medicamentosa	Balloon dilatation vs Draf I or IIa
Askar (2014)	Prospective	40	62	22-50	CRS	Previous sinus surgery, fungal sinusitis	Balloon dilatation (10Fr Foley catheter)
Fleischman (2014)	Retrospective	4	5	13-68	CRS	---	Balloon dilatation (Acclarent)
Hathorn (2014)	Prospective, single-blinded, randomized	30	60 (30 study, 30 control)	49.8	CRSsNP, CRSwNP	Previous sinus surgery	Endoscopic sinus surgery w/balloon sinuplasty (Ventera SDS) vs Draf IIa
Bowles (2016)	Prospective	60	120	19-79	CRSsNP, ARS	CRSsNP, previous sinus surgery	Balloon dilatation (Acclarent)
Szczygielski (2017)	Retrospective	12	23	18-72	CRSsNP	CRSsNP	Balloon dilatation (Acclarent)
Minni (2018)	Prospective, randomized	102	148 (69 study, 79 control)	42	CRSsNP	CRSsNP, previous sinus surgery	Balloon dilatation vs Draf I
Minni (2018)	Retrospective	54	76 (35 study, 41 control)	46	CRSsNP	CRSsNP, previous sinus surgery	Balloon dilatation vs balloon dilatation w/steroid-eluting stent