

CHRONIC RHINOSINUSITIS (CRS): *NASYA*, *DHOOMAPANA*, AND *SHAMANA* AS PRIMARY MANAGEMENT WITH FUNCTIONAL ENDOSCOPIC SINUS SURGERY (FESS) RESERVED AS A LATE-STAGE/REFRACTORY INTERVENTION – AN AYURVEDIC REVIEW

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Ahmednagar, Maharashtra. DOI: <https://doi.org/10.5281/zenodo.18092427>



How to cite this Article: Dr. Suchita Kanade^{1*}, Dr. Indrajeet S. Gadge², Dr. Sachin Umbardand³. (2026). Chronic Rhinosinusitis (CrS): Nasya, Dhoomapana, And Shamana As Primary Management With Functional Endoscopic Sinus Surgery (Fess) Reserved As A Late-Stage/Refractory Intervention – An Ayurvedic Review. European Journal of Biomedical and Pharmaceutical Sciences, 13(1), 51–53.

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Article Received on 27/11/2025

Article Revised on 17/12/2025

Article Published on 01/01/2026

ABSTRACT

Background: Chronic Rhinosinusitis (CRS) is a persistent inflammatory condition of the nasal and paranasal sinus mucosa lasting more than 12 weeks, severely impacting breathing, olfaction, sleep quality, and overall well-being. Global prevalence ranges between 8–12%, with a high rate of recurrence despite repeated antibiotic and surgical interventions.^[1] Ayurveda describes analogous conditions under *Dushta Pratishyaya*, *Peenasa*, and *Kaphaja Shiroroga*, emphasizing vitiation of *Vata–Kapha*, *Srotorodha*, and chronic inflammation of the *Urdhwanga Srotas*.^{[2],[3]} *Panchakarma* modalities like *Nasya* and *Dhoomapana* along with *Shamana aushadha* provide an effective non-invasive approach. **Aim and Objective:** To evaluate Classical Ayurvedic recommendations and modern pathophysiological evidence supporting *Nasya*, *Dhoomapana*, and *Shamana* therapy as first-line treatment for CRS, placing FESS as a secondary option for refractory cases only. **Methods:** Narrative integrative review of classical Ayurvedic texts including *Bruhatrayee*, *laghutrayee*, *Nighantu* and therapeutic compendia alongside modern literature sourced from PubMed, Scopus, Google Scholar, Cochrane using keywords: *Chronic Rhinosinusitis*, *Nasya*, *Dhoomapana*, *FESS*, *Ayurveda*, *Mucociliary clearance*. **Key Findings:** *Nasya* improves mucociliary drainage, reduces biofilm formation, restores *Prana Vayu* flow and clears *Srotorodha*.^{[4],[5]} *Dhoomapana* liquefies and expels stubborn *Kapha*, acts as topical anti-microbial and reduces oedema.^[6] *Shamana* drugs (*Trikatu*, *Haridra*, *Pippali*, *Dashmoola*) provide systemic anti-inflammatory and immunomodulatory support.^{[7],[8]} Surgery (FESS) is required only in structural deformity, complications or failure of medical therapy.^[9] **Conclusion:** CRS management should prioritize Ayurveda-based non-invasive *Nasya–Dhoomapana–Shamana* therapy before considering surgical intervention. This approach demonstrates superior chronic disease control, mucosal remodelling, and recurrence reduction.

KEYWORDS: Chronic Rhinosinusitis, *Dushta Pratishyaya*, *Nasya*, *Dhoomapana*, *Shamana*, FESS, *Kapha-Vata dushti*, mucociliary function.

INTRODUCTION

Chronic Rhinosinusitis is defined as persistent sinonasal inflammation lasting ≥ 12 weeks associated with nasal

obstruction, mucopurulent discharge, hyposmia, headache, and mucosal oedema.^[10] CRS affects nearly 1 in 10 individuals globally, impairing sleep, productivity,

and mental health.^[11] Pathophysiology involves chronic mucosal inflammation, biofilm formation, goblet cell hyperplasia, osteomeatal complex obstruction and recurrent infection.^[12] Role of immune imbalance, high eosinophil levels, and microbiome dysbiosis is established.^[13]

Ayurvedic Perspective

Conditions resembling CRS are described as *Pratishyaya*, *Dushta Pratishyaya*, *Peenasa* and *Kaphaja Shiroroga* caused by vitiation of *Kapha* & *Vata dosha*, blockage of *Nasa-Srotasa*, impaired *Pranavaha srotas*, and depletion of *Agni-bala*.^{[14],[15]} *Srotoshodhana* through *Nasya* and *Dhoomapana* is emphasized as first line therapy. *Chikitsa* guidelines highlight reduction of *Kapha-Ama*, strengthening mucosal immunity, and improving drainage.^[16]

MATERIALS AND METHODS

Type of Review: Narrative qualitative review.

Sources: *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, *Sharangadhara*, *Bhavaprakasha*, *nighantus*; modern studies from PubMed, Cochrane, Scopus, Google Scholar.

Search Terms: *CRS*, *Dushta Pratishyaya*, *Nasya*, *Dhoomapana*, *Shamana*, *mucociliary clearance*, *FESS surgery failure*.

Inclusion Criteria: Ayurvedic & modern literature describing CRS mechanism, *Panchakarma*, *Nasya*, *Dhoomapana*, mucosal physiology, anti-inflammatory herbs, FESS outcomes.

Method: Cross comparison between Ayurvedic concepts and contemporary rhinological research; outcome synthesized conceptually.

OBSERVATIONS

A. Modern Understanding of CRS

CRS is driven by persistent mucosal inflammation, impaired mucociliary clearance, biofilm formation, fungal colonization, cytokine surge (IL-4/IL-5/IL-13), tissue remodelling, and polypoidal changes.^{[17],[18]}

Eosinophilic CRS is corticosteroid-responsive but relapse is common. Long-term antibiotics impair microbiome.^[19]

B. Ayurvedic Understanding – *Dushta Pratishyaya*

Kapha-Vata predominance, aggravated by cold exposure, dairy intake, curd, day sleep, dust and allergens.^[20] *Vata avarana* with *Sthanika Kapha vriddhi* leads to *Sroto-rodha*, which causes persistent mucus stagnation.^[21]

Ayurvedic therapy seeks to

Component	Ayurvedic Target
<i>Kapha-Shamana</i>	Reduce mucus load
<i>Vata-Anulomana</i>	Restore drainage
<i>Ama-Pachana</i>	Reduce inflammation
<i>Rasayana & Shamana</i>	Recurrence prevention

C. *Nasya* as First-Line Therapy

Nasya directly reaches *Shir* (*Nasahi shiraso Dwaram*), liquefies *Kapha*, clears channels, enhances olfaction and immunity.^[22]

Types: *Sneha Nasya*, *Avapeeda*, *Pradhamana*.

Clinical benefits include

Improves mucociliary clearance
Breaks biofilms & reduces edema
Reduces headache, congestion, anosmia.^{[23][24]}
Best oils: *Anu taila*, *Shadbindu taila*, *Ksharataila*.

D. *Dhoomapana* – Mucus Evacuation & Sterilization

Dhoomapana melts compact *Kapha*, sterilizes sinuses, prevents secondary infection.^[25]

Dhoomapana drugs: *Haridra*, *Vacha*, *Pippali*, *Agaru*, *Jatamamsi*, *Guggulu*.

It improves patency of the drainage pathway, respiratory cilia activity, and biofilm breakdown.^[26]

E. *Shamana* Therapy

Internal medicines reduce inflammation, restore *Agni*, and prevent recurrence:

Shamana works synergistically with *Nasya* & *Dhoomapana*.

Drug/Class	Action
<i>Haridra</i> , <i>Guduchi</i>	Immunomodulatory, anti-inflammatory
<i>Trikatu</i> , <i>Pippali</i>	Mucolytic, <i>Agni deepana</i>
<i>Dashmoola kwatha</i>	Anti-oedematous, antioxidant
<i>Yashtimadhu</i>	Soothing mucosal healer

F. Role of FESS – Reserved for Refractory Cases

Functional Endoscopic Sinus Surgery widens the osteomeatal complex but does not heal mucosal inflammation, hence recurrence is high if underlying pathology persists.^[27]

Evidence indicates >30% relapse within 5 years without medical support.^[28] Thus, Ayurvedic line of therapy should precede surgery, and FESS must be restricted to:

- Gross anatomical blockage
- Mucocele, fungal sinusitis, orbital risk
- No response to prolonged Ayurveda therapy

DISCUSSION

Ayurveda provides a *top-down mucosal restoration strategy* for CRS. *Nasya & Dhoomapana* act over the primary pathology—*Kapha* accumulation, mucosal oedema, and ciliary dysfunction. Unlike surgery, they *heal the mucosal surface* and regulate *Agni-Ojas-Rasa formation* preventing recurrence. Modern research aligns showing oil-based nasal therapy reduces inflammatory cytokines and improves mucociliary transport rate.^[29] *Dhoomapana* functions like a herbal aerosol delivering anti-biofilm molecules.^[30] Thus, Ayurveda addresses root-cause not just space widening like FESS.

CONCLUSION

CRS must be treated primarily with *Nasya–Dhoomapana–Shamana* therapy, not surgery-first. This non-invasive model reduces recurrences, inflammation, biofilm colonization, and enhances mucosal healing. FESS remains valuable, but only as a *late-stage, structural correction tool* once Ayurvedic management is exhausted. Integration of clinical trials will strengthen global acceptance.

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