



Research Article

## Management of Chronic Sinusitis through Ayurveda: A Shalaky Tantra Approach

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### Abstract

**Background:** Chronic sinusitis is an inflammatory condition of the paranasal sinuses persisting for more than twelve weeks, marked by nasal congestion, mucopurulent discharge, facial pain, and anosmia. Its global prevalence and the growing limitations of conventional pharmacotherapy—particularly antibiotic resistance and steroid-related adverse effects—have renewed scholarly interest in traditional systems of medicine. Shalaky Tantra, the Ayurvedic speciality dedicated to diseases of the head and sense organs (Urdhvanga), offers a comprehensive and time-tested framework for understanding and treating this condition.

**Objective:** To critically review the classical Ayurvedic conceptualisation of chronic sinusitis, its correlation with Dushta Pratishyaya and Kaphaja Shiroroga, and to systematically evaluate the therapeutic measures described under Shalaky Tantra for its effective management.

**Methods:** A comprehensive review of classical Ayurvedic texts including Charaka Samhita, Sushruta Samhita, Ashtanga Hridayam, Ashtanga Sangraha, Madhava Nidana, and Sharangadhara Samhita was undertaken. Published clinical studies, single-arm trials, and case reports from peer-reviewed Ayurvedic journals between 2000 and 2024 were also analysed to correlate classical perspectives with contemporary clinical evidence.

**Results:** Classical texts systematically describe the pathology of chronic sinusitis under Pratishyaya (rhinitis/sinusitis) and its chronic, complicated form as Dushta Pratishyaya, with Kaphaja predominance being most analogous to chronic sinusitis. The Shalaky Tantra approach employs a multi-modal treatment strategy comprising Nasya karma (nasal drug instillation), Dhumapana (medicated fumigation), Kavala-Gandusha (oil gargling), Shirobasti, Shiroabhyanga, and a range of internal medicines. Among these, Pratimarsha Nasya with Anu Taila and Shadbindu Taila has demonstrated consistent clinical efficacy in reducing mucosal

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oedema, improving mucociliary clearance, and relieving pain.

**Conclusion:** Ayurvedic management through the Shalaky Tantra paradigm offers a holistic, dosha-specific, and patient-centred approach to chronic sinusitis. Integration of classical Panchakarma procedures, herbal pharmacotherapy, and dietetic regulation demonstrates therapeutic potential that merits well-designed randomised controlled trials for further validation.

**KEYWORDS:** Chronic Sinusitis, Shalaky Tantra, Dushta Pratishyaya, Nasya Karma, Anu Taila, Panchakarma, Kaphaja Dosha, Urdhvanga Roga

## 1. INTRODUCTION

Chronic rhinosinusitis (CRS) ranks among the most prevalent inflammatory disorders affecting the upper aerodigestive tract globally, with epidemiological estimates suggesting that approximately 10–16% of the adult population in developed countries and a comparably significant proportion in South Asian nations suffer from some form of chronic sinonasal inflammation. Characterised by persistent mucosal inflammation involving the nasal passages and one or more of the paranasal sinuses—maxillary, ethmoid, frontal, or sphenoid—for a duration exceeding twelve weeks despite adequate therapeutic attempts, CRS imposes a substantial burden on individual quality of life and public health infrastructure alike.

Contemporary allopathic management of chronic sinusitis largely relies upon prolonged antibiotic courses, intranasal corticosteroids, saline irrigations, antral washouts, and, in refractory cases, functional endoscopic sinus surgery (FESS). While these interventions yield symptomatic relief in a proportion of patients, the recurrence rate remains disconcertingly high, often exceeding 50% within two years post-surgery. Furthermore, the indiscriminate use of broad-spectrum antibiotics has contributed to the alarming emergence of resistant microbial strains, while chronic corticosteroid use carries well-documented risks of mucosal atrophy, adrenal suppression, and immune compromise. This therapeutic gap has prompted both clinicians and researchers to revisit traditional medicinal systems—particularly Ayurveda—for complementary and integrative solutions.

Ayurveda, India's ancient science of life and longevity, addresses diseases of the head and its sense organs through a distinct speciality known as Shalaky Tantra—one of the eight canonical branches (Ashtanga Ayurveda) described in foundational texts. The term 'Shalaky' derives from 'Shalaka,' meaning a probe or rod, implying both surgical precision and specialist skill in the management of diseases above the Clavicle (Urdhvanga). Chronic sinusitis, in Ayurvedic nosology, finds its closest and most clinically satisfactory correlate in the condition designated Pratishyaya—specifically its chronic, complicated, and predominantly Kaphaja manifestation known as Dushta Pratishyaya or Pakva Pratishyaya.

The present paper undertakes a scholarly review of the classical Ayurvedic understanding of chronic sinusitis from a Shalaky Tantra perspective. It examines the disease's aetiopathogenesis (Nidana-Samprapti), clinical presentation (Rupa-Lakshana), differential categorisation (Bhedas), and the comprehensive therapeutic armamentarium available within the Shalaky speciality. The paper further discusses the pharmacodynamic basis of key Ayurvedic interventions in the light of available phytochemical and clinical research, thereby bridging classical scholarship with evidence-based practice.

## 2. AIMS AND OBJECTIVES

The primary aims of this review are as follows:

- To establish a systematic conceptual and terminological correlation between the modern diagnostic entity of chronic sinusitis and its classical Ayurvedic equivalents, particularly Dushta Pratishyaya and Kaphaja Shiroroga.
- To critically examine the aetiological factors (Nidanas), pathophysiological mechanisms (Samprapti), and clinical symptomatology (Lakshanas) described in authoritative Ayurvedic texts.
- To present a structured overview of the Shalaky Tantra treatment protocol for chronic sinusitis, encompassing both Shodhana (purificatory) and Shamana (palliative) approaches.
- To evaluate the pharmacological and clinical rationale underlying the use of key Ayurvedic drugs and procedures, with special emphasis on Nasya karma and Panchakarma modalities.
- To identify areas requiring further clinical research and propose directions for future integrative therapeutic trials.

## 3. MATERIALS AND METHODS

### 3.1 Review Design

The present work constitutes a classical and contemporary literature review. Primary sources include Brihatrayee (Charaka Samhita, Sushruta Samhita, Ashtanga Hridayam) and Laghutrayee (Madhava Nidana, Sharangadhara Samhita, Bhavaprakasha). Secondary sources encompass peer-reviewed publications from journals including the Ancient Science of Life, Journal of Ayurveda and Integrative Medicine (JAIM), AYU Journal, and the International Journal of Ayurveda Research, covering the period from 2000 to 2024.

### 3.2 Inclusion and Exclusion Criteria

Classical chapters dealing with Shiroroga, Pratishyaya, Nasaroga, Kaphaja disorders, and Nasya vidhi were included in toto. Clinical studies, case series, and randomised controlled trials addressing Ayurvedic management of sinusitis or its classical correlates were included. Articles not available in English or Sanskrit, non-peer-reviewed grey literature, and studies with inadequate methodological description were excluded.

### 3.3 Data Extraction and Synthesis

Relevant shlokas (classical verses) were retrieved, transliterated, and translated independently. Pharmacological data on individual drugs were sourced from the Dravyaguna Vijnana literature and contemporary phytochemical databases. Clinical data were synthesised narratively, given the heterogeneity of available studies.

## 4. AYURVEDIC CONCEPTUALISATION OF CHRONIC SINUSITIS

### 4.1 Shalakya Tantra: The Speciality Context

Shalakya Tantra is explicitly defined in Ashtanga Hridayam (Sutra Sthana 1/6) as the branch dealing with diseases arising above the clavicle—encompassing the eyes, ears, nose, oral cavity, and skull. The nose, or Nasa, occupies a position of exceptional physiological and spiritual importance in classical Ayurvedic anatomy. It is designated as the Shirasya Dwaara—the gateway to the head—and the primary site of Prana Vayu entry. The paranasal sinuses, though not individually named in classical texts, are anatomically implicit within the broader concept of the sinus cavities described as Shirastha Srotamsi (channels within the head).

### 4.2 Disease Correlation: Pratishyaya and Dushta Pratishyaya

Pratishyaya, described in Charaka Samhita (Sutra Sthana 17), Sushruta Samhita (Uttara Tantra 24), and Ashtanga Hridayam (Uttara Sthana 19), is the most directly comparable condition to sinusitis in Ayurvedic nosology. The term is derived from the root 'Prati' (opposite or against) and 'Syaya' (accumulation/flow), signifying the pathological accumulation and abnormal flow of vitiated doshas in the nasal and paranasal structures.

When Pratishyaya remains untreated, the vitiated doshas undergo further degradation (Pachana), acquiring the character of Dushta (putrid or corrupted), giving rise to Dushta Pratishyaya—characterised by thick, discoloured, foul-smelling discharge; persistent blockage; deepening headache; anosmia; and systemic symptoms. This progression closely mirrors the natural history of acute rhinosinusitis transitioning into chronic sinusitis. Additionally, Kaphaja Shiroroga and Suryavarta (a condition with chronobiological headache) are relevant co-occurring pathologies that enrich the clinical picture.

### 4.3 Sinus Anatomy in Classical Ayurvedic Texts

While the precise anatomical description of individual paranasal sinuses (maxillary, frontal, ethmoid, sphenoid) as separate entities is absent in classical texts—consistent with the pre-dissection era of much classical composition—several anatomical constructs approximate sinus physiology. The Kapala (calvarium), Shringataka Marma (a vital point at the junction of the four great sinus vessels described by Sushruta), and the Srotamsi of Shiras (head channels) collectively represent the cranio-facial air spaces now identified as paranasal sinuses. The mucous membrane lining these spaces is governed by Bodhaka Kapha and Shleshaka Kapha, while their patency depends on the uninhibited flow of Prana Vayu.

## 5. NIDANA (AETIOLOGY)

### 5.1 Ahara Nidanas (Dietary Causes)

Classical texts enumerate the following dietary factors as causative in the development of Pratishyaya and its chronic complications:

- Excessive consumption of Sheeta (cold), Guru (heavy), and Snigdha (unctuous) food items, which provoke Kapha vitiation in the upper respiratory tract.
- Intake of Viruddha Ahara (incompatible food combinations), particularly the combination of milk with sour or salty substances.
- Habitual consumption of Abhishyandi (channel-blocking) substances such as curd, banana, sugarcane products, black gram, and new grains that promote mucous hypersecretion.
- Consumption of excessively cold water and chilled beverages, which impair mucociliary clearance and promote Kapha stagnation.
- Irregular meal timings and suppression of natural urges (Vegavarodha), particularly the urge to sneeze (Kshavata), which allows secretion accumulation.

### 5.2 Vihara Nidanas (Lifestyle Causes)

- Exposure to cold winds, dust, smoke, pollen, and damp environments (Dhumasheva) leading to nasal mucosal irritation.
- Divasvapna (daytime sleeping), which aggravates Kapha and creates Srotorodha (channel obstruction) in the head.
- Vegavarodha of Chhardi (emesis), Kshavata (sneeze), and Ashru (tears), disrupting the natural Kapha-Vata balance in Urdhvanga.
- Exposure to Rajasa (dusty), Dhooma (smoky), and polluted environments, correlating with modern data on air pollution as a major chronic sinusitis trigger.
- Occupational exposure to allergens—flour dust, chemical fumes, and cold storage environments—implicitly covered under Dushta Vayu exposure.

### 5.3 Manasika Nidanas (Psychological Causes)

Though less emphasised in the specific context of Pratishyaya, classical texts acknowledge that Krodha (anger), Shoka (grief), and Chinta (chronic anxiety) vitiate Pitta and Vata doshas, predisposing the individual to Urdhvanga pathologies. Modern psychoneuroimmunological research validates this connection, demonstrating that chronic psychological stress compromises

sinonasal mucosal immunity through cortisol-mediated immunosuppression.

#### 5.4 Agantuja Nidanas (External Causes)

Sushruta Samhita additionally recognises trauma to the nose, skull, or face (Abhighata) and entry of foreign bodies (Kritrim Nidana) as precipitating factors. In contemporary practice, deviated nasal septum, nasal polyps, and turbinate hypertrophy—all sequelae of earlier trauma or infection—serve as the structural correlates of these Agantuja causes by perpetuating Srotorodha.

### 6. SAMPRAPTI (PATHOGENESIS)

#### 6.1 Dosha Involvement

The primary Dosha responsible for the initiation of Pratishyaya is Vata-Kapha, with Pitta assuming significance in the subacute and infected stage. The following Samprapti Ghataka (pathogenic components) are identifiable:

Samprapti Ghataka	Specific Component
Dosha	Kapha (Avalambaka, Bodhaka, Shleshaka Kapha) + Vata (Prana Vata)
Dushya	Rasa Dhatu, Rakta Dhatu (particularly Plasma and Blood components in nasal mucosa)
Srotasa	Pranavaha Srotasa, Rasavaha Srotasa
Srotodushiti	Sanga (obstruction) and Vimargagamana (abnormal secretion direction)
Adhithana	Nasa (nose), Shiras (head), Mukha (oropharynx)
Agni	Jatharagni Mandya and Dhatvagni Mandya (compromised metabolic enzymes)
Udbhava Sthana	Amashaya (stomach / intestinal origin of Kapha)
Vyakta Sthana	Nasa, Shiras, Netra (nose, head, eyes)
Rogamarga	Madhyama Rogamarga (involving both external channels and vital organs)

#### 6.2 Sequential Pathogenic Steps

The pathogenesis unfolds in six stages consistent with the Shat Kriyakala (six stages of disease progression) described in Charaka Samhita:

- Sanchaya (Accumulation):** Kapha begins to accumulate in the stomach and upper respiratory channels due to Ahara and Vihara Nidanas listed above. This stage is subclinical, characterised only by mild nasal heaviness.
- Prakopa (Aggravation):** Provoked Kapha, combined with Vata, becomes qualitatively vitiated. The patient notices increased nasal secretion, post-nasal drip, and morning nasal congestion.
- Prasara (Spread):** The vitiated Doshas leave their primary seats (Amashaya for Kapha) and circulate through Rasa and Rakta Dhatus toward the Urdhvanga.
- Sthana Samshraya (Localisation):** Migrating Doshas settle in the Nasa-Shiras Pradesh (nasal and paranasal region), the Khavaigunya (structural or functional weakness) of which has been pre-established by prior exposure to Nidanas.
- Vyakti (Manifestation):** Frank symptoms of Pratishyaya appear: nasal discharge, obstruction, sneezing, facial heaviness, and headache.

- Bheda (Chronification/Complication):** Untreated Pratishyaya progresses to Dushta Pratishyaya. The Kapha, having remained for a prolonged period without adequate treatment, undergoes further Pachana and Dushana, acquiring foul smell (Puti Ganda), colour change, and viscosity. This stage corresponds precisely to chronic sinusitis with bacterial superinfection.

#### 6.3 Samanya Samprapti in Chronic Sinusitis

A critical pathophysiological feature distinguishing chronic sinusitis from its acute counterpart is the persistence of mucosal inflammation beyond the resolution of the initial infectious trigger. In Ayurvedic terms, this corresponds to the perpetuation of Ama (incompletely metabolised toxins) within the Shiras Srotamsi. Ama, being Guru, Sheeta, Picchila, and Avipaka in nature, mirrors the characteristics of the thickened, tenacious mucus observed in the inflamed sinuses of CRS patients. The concurrent presence of Vata Vikruti explains the associated pain, dryness in some cases (Vataja subtype), and neurological sensitisation (Allodynia/hyperalgesia) frequently observed in CRS patients.

### 7. CLASSIFICATION OF PRATISHYAYA AND CLINICAL CORRELATION

Classical texts describe five or six varieties of Pratishyaya based on dosha predominance. Each variety carries distinct clinical features with direct modern correlates:

Type	Key Lakshanas	Modern Correlation	Treatment Emphasis
Vataja	Clear watery discharge, nasal dryness, pain, sneezing attacks, mild fever	Allergic rhinitis, vasomotor rhinitis	Snehana, Vata-pacifying Nasya
Pittaja	Yellow-green thick discharge, burning sensation, fever, epistaxis, foul smell	Acute bacterial sinusitis; infected subtype of CRS	Virechana, Pitta-pacifying Nasya, Tikhna Nasya
Kaphaja	White, thick, viscid mucus; post-nasal drip; anosmia; facial heaviness	Chronic sinusitis (primary correlate)	Shodhana Nasya, Dhumapana, Vamana
Sannipataja	Mixed signs of all three doshas; severe chronicity	Refractory/complicated CRS	Sequential Shodhana followed by Shamana
Dushta Pratishyaya	Purulent greenish-black discharge; severe pain; systemic features	Chronic sinusitis with bacterial superinfection	Intensive Shodhana; antibacterial Nasya formulations
Raktaja	Blood-tinged discharge; burning; inflammatory pain	Fungal sinusitis; angioinvasive disease; trauma-related	Raktamokshana, Pitta-Rakta management

### 8. RUPA (CLINICAL FEATURES) OF DUSHTA PRATISHYAYA

The clinical features of Dushta Pratishyaya—the chronic sinusitis correlate—are described most comprehensively in Sushruta Samhita (Uttara Tantra, Chapter 24) and Ashtanga

Hridayam (Uttara Sthana, Chapter 19). The cardinal manifestations are:

### 8.1 Nasal Symptoms (Nasaja Lakshanas)

- Puti Nasya (foul-smelling nasal discharge) — Corresponds to chronic purulent discharge with bacterial colonisation
- Ghana Nasya Srava (thick, viscid nasal secretion) — Reflects mucous hypersecretion and impaired mucociliary transport
- Nasa Avarana (nasal obstruction) — Correlated with mucosal oedema and polyp formation
- Ghrana Nashta (anosmia) — Loss of smell due to olfactory mucosal involvement
- Kshavatu Adhikya (frequent sneezing) — Associated with nasal hyperreactivity

### 8.2 Shiras (Head-Related Symptoms)

- Shirahshoola (headache) — Particularly frontal, retro-orbital, or vertex headache, worsening in morning hours
- Shiro Gaurava (head heaviness) — Pressure sensation over frontal and maxillary regions
- Shiro Bhrama (dizziness) — Seen in advanced cases with Eustachian tube involvement

### 8.3 Systemic Symptoms (Sarvariga Lakshanas)

- Jwara (low-grade fever) — Reflecting chronic infective or inflammatory state
- Kasa (cough) — Post-nasal drip-induced pharyngeal irritation
- Aruchi (anorexia) and Tandra (drowsiness) — Reflecting Kapha dominance and systemic Ama
- Kantha Kandu (pharyngeal pruritus) — Consequent to chronic post-nasal drip
- Netra Srava (epiphora/lacrimation) — Reflecting involvement of the nasolacrimal duct

## 9. MANAGEMENT PROTOCOL: SHALAKYA TANTRA APPROACH

The management of Dushta Pratishyaya in Shalakyta Tantra is structured along the classical principle of Chikitsa Chatushpada (the four limbs of treatment): Vaidya (physician), Dravya (drugs), Upastha (attendant), and Rogi (patient). The treatment is broadly divided into Shodhana (purification/elimination), Shamana (palliation/pacification), and Rasayana (rejuvenation/preventive care).

### 9.1 Purvakarma (Preliminary Procedures)

Prior to the initiation of any major therapeutic procedure, Purvakarma is mandatory to prepare the body tissues, mobilise the accumulated Doshas from their peripheral locations toward the central channels, and prevent procedural complications. The relevant Purvakarma procedures include:

- Snehana (Internal and External Oleation): Administration of medicated ghrita (clarified butter) such as Panchatikta Ghrita or Mahatikta Ghrita internally for three to seven days prepares the tissues by loosening Ama and softening the Kapha that has become Kharva (dried/desiccated) in the chronic stage. External Snehana through Shiro

Abhyanga (head massage) with Bala Taila or Ksheerabala Taila is performed to relax the perinasal musculature and improve local circulation.

- Svedana (Sudation): Application of medicated steam to the face and cranium using decoctions of Vata-Kapha-pacifying herbs such as Nirgundi (*Vitex negundo*), Dashmool, and Eucalyptus facilitates drainage of viscid sinusoidal secretions and reduces mucosal congestion. Bashpa Sveda (steam inhalation) is the most practical form for this anatomical region.

## 9.2 Shodhana Procedures (Purificatory Treatment)

### 9.2.1 Vamana Karma (Therapeutic Emesis)

Vamana—one of the five principal Panchakarma procedures—is specifically indicated in Kaphaja disorders, including Kaphaja Pratishyaya. The classical texts advocate Vamana as the definitive Shodhana for diseases with Kapha predominance in the Urdhva Shakha (upper extremities and head-neck region). The procedure involves the oral administration of Kapha-mobilising drugs (typically Madanaphala or Ikshvaaku) after adequate Snehana and Svedana, inducing controlled emesis that expels accumulated Kapha Dosha from the stomach—the primary seat of Kapha—and reflexively from the head.

Modern understanding of Vamana in the context of sinusitis suggests that it may reduce systemic Kapha and IgE-mediated hypersensitivity by modulating the gut-lung immune axis, a connection supported by emerging microbiome research demonstrating bidirectional communication between intestinal and sinonasal mucosal immunity.

### 9.2.2 Nasya Karma (Nasal Drug Administration)

Nasya Karma stands as the cornerstone and most specific treatment in Shalakyta Tantra for all Urdhvanga diseases, including chronic sinusitis. The nasal route of drug administration—administering medicated oils, ghee, juices, or powders through the nostrils—is justified by the classical axiom: Nasahi Shiraso Dwaram (the nose is the gateway to the head). This route provides direct access to the paranasal sinuses, olfactory mucosa, and by extension, the cerebrospinal fluid pathway. The following varieties of Nasya are clinically relevant in chronic sinusitis management:

Nasya Type	Formulation	Indication	Dose/Frequency
Shodhana Nasya	Shadbindu Taila, Shigru Beeja Churna	Kaphaja and Dushta Pratishyaya; polyps	6–8 drops/nostril; morning; 7 days
Brinhana Nasya	Anu Taila, Ksheerabala Taila	Chronic/Vataja sinusitis with dryness	4–6 drops/nostril; daily; 21–30 days
Shamana Nasya	Panchendriyavardhana Taila, Sarshapa Taila	Mild Kaphaja type with congestion	4 drops/nostril; twice daily
Pratimarsha Nasya	Anu Taila, Sesame oil	Daily preventive use and mild symptoms	2 drops/nostril; morning and evening
Tikshna Nasya (Avapidana)	Fresh Shigru juice, Pippali Churna with honey	Severe obstruction, polyps	Practitioner-supervised; 2–3 drops only

Among Nasya formulations, Anu Taila (a compound oil described in Ashtanga Hridayam, Sutra Sthana 20/31) and Shadbindu Taila have received the most clinical attention. Anu Taila contains twenty-six ingredients including Bala (*Sida cordifolia*), Bilva (*Aegle marmelos*), Shalaparni (*Desmodium gangeticum*), Brihati (*Solanum indicum*), and Devadaru (*Cedrus deodara*), processed in sesame oil and goat milk. Its multi-ingredient synergy is thought to exert mucolytic, anti-inflammatory, and neuroprotective effects simultaneously on the nasal mucosa, olfactory epithelium, and paranasal sinus lining.

### 9.2.3 Dhumapana (Medicated Smoke Inhalation)

Dhumapana involves inhalation of medicated smoke from herbal preparations through a specially designed pipe (Dhumaetra). It is classified into three types—Prayogika (therapeutic), Vairechanika (expectorant), and Snaihika (lubricating)—of which Vairechanika Dhumapana using Kapha-pacifying herbs is most relevant for chronic sinusitis. Classical formulations include a combination of Haridra (*Curcuma longa*), Guggulu (*Commiphora mukul*), Vacha (*Acorus calamus*), and Nimba (*Azadirachta indica*).

The pharmacological basis of Dhumapana's efficacy involves the inhalation of volatile phytochemicals directly into the sinusoidal spaces. Curcumin from Haridra, guggulsterones from Guggulu, and beta-asarone from Vacha exhibit documented anti-inflammatory, antimicrobial, and mucolytic properties. Dhumapana is ideally performed after Nasya Karma and is contraindicated in acute febrile states, Pittaja conditions, and paediatric patients under the age of eight.

## 9.3 Shamana Chikitsa (Palliative Treatment)

### 9.3.1 Shiroabhyanga (Cranial Massage)

Regular massage of the head, forehead, temples, and perinasal region with medicated oils such as Bala Taila, Brahmi Taila, or Mahanarayana Taila is advised as both treatment and preventive measure. Shiroabhyanga improves local blood circulation, reduces Vata-mediated neurological sensitisation in the trigeminal distribution (the anatomical basis of sinusitis-related facial pain), and promotes lymphatic drainage from the perinasal soft tissues.

### 9.3.2 Shirobasti (Retention of Oil on the Head)

Shirobasti—a procedure in which a cylindrical leather cap is fitted around the cranium and filled with warm medicated oil retained for a prescribed duration—is indicated in chronic sinusitis with predominant Vata features, including severe headache, insomnia, and neurological sensitivity. Oils used include Ksheerabala (101 Avartana), Mahamasha Taila, and Bala Ashwagandhadi Taila.

### 9.3.3 Kavala-Gandusha (Oil Gargling / Oral Oil Holding)

Kavala (oil swishing) and Gandusha (oil retention in the oral cavity) using warm sesame oil, Arimedadi Taila, or Triphala decoction are prescribed daily for their impact on the oropharynx and associated sinonasal drainage. Classical texts attribute the efficacy of these practices to their ability to

'strengthen the jaws, voice, and face, and draw out diseases of the oral cavity and upper throat.' Modern research suggests that oil pulling may reduce pathogenic bacterial load in the oropharynx, potentially decreasing retrograde bacterial ascent into the paranasal sinuses through the Eustachian tube and posterior nasal space.

### 9.3.4 Lepa (Topical Application)

Application of medicated pastes over the frontal region, maxillary area, and bridge of the nose provides local anti-inflammatory relief. Commonly used paste formulations include a mixture of Saindhava Lavana (rock salt) and Haridra (turmeric) in sesame oil base, Kalyanaka Churna paste, and preparations containing Maricha (*Piper nigrum*) and Shunthi (*Zingiber officinale*) for their Ushna (hot potency) and Kaphahara (Kapha-reducing) properties.

## 10. INTERNAL MEDICINES (AUSHADHA YOGA)

### 10.1 Classical Formulations of Established Efficacy

Formulation	Key Ingredients	Pharmacological Action	Dose/Vehicle
Triphala Churna	Haritaki, Vibhitaki, Amalaki	Antioxidant, immunomodulatory, Rasayana; improves mucosal immunity	3–6 g; warm water; at bedtime
Trikatu Churna	Shunthi, Maricha, Pippali	Mucolytic, Deepana-Pachana; reduces Ama; improves Agni	1–2 g; honey; before meals
Sitopaladi Churna	Mishri, Pippali, Ela, Twak, Vamshalochana	Expectorant, anti-inflammatory; indicated in Kaphaja Kasa & Pratishyaya	2–4 g; honey/ghee
Haridrakhandam	Haridra, Sugar, Ghee, Trikatu, Draksha	Anti-allergic, mast cell stabilising; indicated in allergic sinusitis	6–12 g; warm milk; twice daily
Septillin Tablets (Himalaya)	Guduchi, Shallaki, Guggulu, Shunthi	Immunostimulant, anti-infective; reduces recurrence	2 tabs; twice daily
Vyoshadi Vatakam	Trikatu, Haritaki, Karkatashringi	Kaphahara; relieves congestion and Srotorodha	500 mg–1 g; honey
Agastya Haritaki Rasayana	Haritaki, Shatamuli, Pippali, Honey	Rasayana for respiratory tract; reduces chronicity	6 g; warm water

### 10.2 Pharmacodynamic Basis of Key Drugs

#### Haridra (*Curcuma longa*)

Turmeric's active constituent curcumin has been extensively studied for its inhibition of NF- $\kappa$ B-mediated inflammatory signalling, reduction of pro-inflammatory cytokines (TNF- $\alpha$ , IL-1 $\beta$ , IL-6), and inhibition of COX-2 enzymes. These mechanisms directly address the chronic low-grade mucosal inflammation characteristic of CRS. Curcumin additionally demonstrates antimicrobial activity against *Staphylococcus aureus* and *Pseudomonas aeruginosa*—the two organisms most frequently implicated in CRS-associated bacterial biofilm formation.

**Pippali (Piper longum)**

Piperine, the principal bioactive alkaloid of Pippali, exhibits mucolytic, bronchorelaxant, and bioenhancer properties. Its Teekshna (sharp/penetrating) and Ushna (hot) Gunas in Ayurvedic pharmacology directly counteract the Sheeta (cold) and Picchila (slimy) properties of vitiated Kapha, and its ability to enhance the bioavailability of co-administered drugs makes it a physiologically sound adjuvant in compound formulations.

**Tulasi (Ocimum tenuiflorum)**

Though not always explicitly listed in sinusitis formulations, Tulasi's essential oil components—eugenol, linalool, caryophyllene, and ursolic acid—exhibit potent antimicrobial, antihistaminic, and mast cell-stabilising properties. Clinical evidence supports its role in reducing allergic rhinitis symptoms, its most proximal modern equivalent being a nasal antihistamine. Its administration as Swarasa (fresh juice) in Pratishtaya is described in several Nighantus.

**11. PATHYA-APATHYA (THERAPEUTIC DIETETICS AND LIFESTYLE)****11.1 Pathya Ahara (Beneficial Foods and Practices)**

- Warm, light, freshly cooked meals; preference for old rice (Purana Shali), barley (Yava), red lentils (Masura), and green gram (Mudga)
- Regular intake of Haridra Dugdha (golden milk: turmeric in warm cow milk) and Trikatu-infused warm water
- Seasonal fruits with Ushna and Katu Rasa: Amla (*Phyllanthus emblica*), black pepper, ginger
- Warm water as the only beverage throughout the day; avoidance of cold or refrigerated drinks
- Inhalation of steam with Ajwain (*Trachyspermum ammi*) or Eucalyptus twice daily during acute exacerbations
- Regular Yoga practice: Pranayama (Kapalbhati, Bhastrika, Anuloma-Viloma) and Jala Neti (saline nasal irrigation)
- Sufficient sleep (Ratrijagarana avoided), maintaining consistent sleep-wake cycles

**11.2 Apathya Ahara (Contraindicated Foods and Practices)**

- Curd (Dadhi), especially at night; buttermilk with inadequate Kapha-pacifying spices
- Banana (Kadali), watermelon, and other excessively Sheeta and Abhishyandi fruits
- Cold beverages, ice cream, refrigerated foods, and carbonated drinks
- Deep-fried foods, excess sweets, and pastries containing refined flour (Maida)
- Exposure to cold draughts, dust storms, smoke-filled environments, and air conditioning without adequate humidification
- Suppression of sneezing (Kshavatu), nasal blowing, or spontaneous mucosal clearing urges
- Excessive sexual activity (Ativyavaya) and excessive physical exertion leading to Dhatu Kshaya

**DISCUSSION**

The foregoing review reveals the remarkable depth and clinical sophistication of the Ayurvedic Shalaky Tantra approach to

chronic sinusitis. Several dimensions of this framework merit critical academic discussion.

**12.1 Conceptual Congruence with Modern Pathophysiology**

The Ayurvedic characterisation of Dushta Pratishtaya—a condition of chronified mucosal inflammation driven by Kapha Dushti, Ama formation, and Srotovarodha—is strikingly congruent with contemporary understanding of CRS. Modern CRS pathophysiology centres on three interacting factors: impaired mucociliary clearance, ostial obstruction, and sustained mucosal inflammation driven by type 2 helper T-cell (Th2) cytokines (IL-4, IL-5, IL-13) in eosinophilic CRS or by neutrophil-dominated inflammation in non-eosinophilic CRS. The Ayurvedic concept of Kapha Abhishyanda (mucous hypersecretion with channel obstruction) precisely mirrors the state of impaired mucociliary clearance and ostial blockade, while Ama—with its classical properties of Guru, Picchila, and Ashuddha—corresponds to the thickened, bacteria-laden, biofilm-forming mucus that is the hallmark of chronic sinus disease.

Furthermore, the identification of Prana Vata dysregulation as a co-pathogen is clinically perceptive. Prana Vayu governs the neurosensory functions of the head and nose. Its compromise in chronic sinusitis manifests as anosmia and hyperalgesia—phenomena that are now understood to involve olfactory receptor neuron damage, central sensitisation of the trigeminal pain pathways, and neuroinflammation—all of which belong to the domain of Prana Vata in classical pharmacology.

**12.2 Evidence Base for Nasya Karma**

Among all Shalaky Tantra procedures, Nasya Karma has attracted the greatest volume of clinical investigation in recent decades. A double-blind randomised controlled trial by Patil et al. (2018) demonstrated that Shadbindu Taila Nasya significantly reduced nasal polyp size, improved endoscopic and symptom scores, and reduced serum eosinophil counts compared to saline Nasya over a 30-day trial period. Similarly, Kumar et al. (2020) demonstrated that Anu Taila Nasya administered for 21 days produced statistically significant improvement in the Sino-Nasal Outcome Test-22 (SNOT-22) scores in patients with CRS.

The pharmacokinetic basis of Nasya's systemic efficacy—long considered speculative—has been partially elucidated by the discovery of the glymphatic system and nasal-brain drug delivery pathways. Molecules instilled into the nasal cavity can traverse the olfactory epithelium and reach cerebrospinal fluid directly via perineural spaces around olfactory nerves, bypassing the blood-brain barrier. This finding lends scientific credibility to classical texts' claims that Nasya can benefit not just nasal diseases but also conditions of the brain, eye, and ear.

**12.3 Limitations of the Present Review and Research Gaps**

Despite the conceptual richness of the Shalaky Tantra framework, several significant limitations constrain the current evidence base. Most published clinical studies on Ayurvedic management of sinusitis suffer from small sample sizes

(typically 30–60 patients), lack of standardised diagnostic criteria aligned with modern otorhinolaryngological guidelines (such as EPOS 2020), absence of validated imaging endpoints (CT scans, nasal endoscopy), and short follow-up periods. The vast majority of studies are conducted at single Ayurvedic institutions without blinding or independent outcome assessment.

Furthermore, the standardisation of Nasya formulations remains a critical challenge. The quality, potency, and chemical composition of Anu Taila and Shadbindu Taila can vary substantially between manufacturers, and no pharmacopoeial standards with biomarker-based quality control have been universally adopted. This variability compromises the reproducibility of clinical results and poses barriers to international regulatory approval.

#### 12.4 Integrative and Future Directions

From the perspective of integrative medicine, the Shalaky Tantra approach offers a compelling complement to conventional CRS management, particularly in cases characterised by recurrence after FESS, steroid-resistant CRS with nasal polyposis (CRSwNP), and allergic fungal sinusitis where conventional options remain limited. The combination of Vamana Karma for Kapha Shodhana with subsequent Nasya maintenance therapy could be evaluated as an integrative protocol alongside standard intranasal corticosteroids.

Future research priorities should include: (a) multicentre RCTs with adequate power and endoscopic/radiological endpoints; (b) biomarker studies examining the effect of Nasya on sinonasal cytokine profiles; (c) microbiome research assessing how Ayurvedic interventions alter the sinonasal and gut microbiome in CRS patients; and (d) safety profiling of long-term Nasya administration with particular attention to olfactory function, sinonasal mucosal histology, and systemic absorption of oil components.

#### 13. CONCLUSION

Chronic sinusitis, conceptualised in Ayurveda as Dushta Pratishtyaya within the speciality of Shalaky Tantra, represents one of the most substantively documented clinical entities in Ayurvedic classical literature. The disease's aetiology, pathogenesis, classification, and management are delineated with a level of clinical precision that has retained relevance across millennia. The Shalaky Tantra approach—anchored in Nasya Karma as its central therapeutic modality and supported by Panchakarma purification, internal pharmacotherapy, and lifestyle regulation—offers a comprehensive, individualised, and holistic framework for managing this chronic and often refractory condition.

The growing convergence between Ayurvedic pathophysiological concepts and modern molecular science—particularly in areas of mucociliary biology, neuroimmunology, and the gut-lung axis—provides a robust scientific platform on which evidence-based integrative management protocols can be constructed. It is the professional responsibility of the Shalaky

Tantra clinician to bridge this gap: rigorously applying classical wisdom through validated clinical protocols while contributing to the growing corpus of evidence-based Ayurvedic research. The patient suffering from chronic sinusitis deserves both the time-honoured insight of Acharya Sushruta and the methodological rigour of the twenty-first century physician.

#### Ethical Statement

This article is a literature review and does not involve human or animal subjects. No ethical approval was required. No conflict of interest is declared by the author. No external funding was received for this work.

#### REFERENCES

1. Charaka. *Charaka Samhita* with Ayurveda-Dipika commentary of Chakrapanidatta. Acharya YT, editor. Reprint ed. Varanasi: Chaukhamba Prakashan; 2011. Sutra Sthana 17:105-109.
2. Sushruta. *Sushruta Samhita* with Nibandha Sangraha commentary of Dalhana. Acharya YT, editor. Varanasi: Chaukhamba Orientalia; 2010. Uttara Tantra, Adhyaya 24:648-654.
3. Vagbhata. *Ashtanga Hridayam* with Sarvanga Sundari commentary of Arunadatta and Ayurvedarasayana of Hemadri. Paradkar HSS, editor. Varanasi: Chaukhamba Sanskrit Sansthan; 2012. Uttara Sthana, Adhyaya 19:845-850.
4. Vagbhata. *Ashtanga Hridayam*. Sutra Sthana, Adhyaya 20 (Nasya Vidhi). Varanasi: Chaukhamba Sanskrit Sansthan; 2012. p. 295-304.
5. Madhavakara. *Madhava Nidana* with Madhukosha commentary. Acharya YT, editor. Varanasi: Chaukhamba Sanskrit Sansthan; 2009. Adhyaya 58:452-458.
6. Bhavamishra. *Bhavaprakasha Nighantu*. Nautiyal KM, editor. Varanasi: Chaukhamba Bharati Academy; 2015. Purva Khanda, Pratishtyaya Prakarana:512-520.
7. Fokkens WJ, Lund VJ, Hopkins C, et al. European Position Paper on Rhinosinusitis and Nasal Polyps (EPOS) 2020. *Rhinology*. 2020;58(Suppl S29):1-464.
8. Rosenfeld RM, Piccirillo JF, Chandrasekhar SS, et al. Clinical practice guideline: Adult sinusitis. *Otolaryngol Head Neck Surg*. 2015;152(2 Suppl):S1-S39.
9. Patil VD, Thakar AB, Baghel MS. Efficacy of Shadbindu Taila Nasya in the management of nasal polyposis: A randomized double-blind controlled clinical trial. *AYU*. 2018;39(1):22-28.
10. Kumar A, Sharma K, Vyas S, et al. Clinical evaluation of Anu Taila Nasya in chronic sinusitis with SNOT-22 scoring. *J Ayurveda Integr Med*. 2020;11(3):275-281.
11. Hegde R, Shetty SR, Sathyanarayana MT. A clinical study on the efficacy of Nasya with Anu Taila in Dushta Pratishtyaya (chronic sinusitis). *Anc Sci Life*. 2012;32(1):22-27.
12. Aggarwal BB, Harikumar KB. Potential therapeutic effects of curcumin, the anti-inflammatory agent, against neurodegenerative, cardiovascular, pulmonary, metabolic, autoimmune and neoplastic diseases. *Int J Biochem Cell Biol*. 2009;41(1):40-59.

13. Louveau A, Smirnov I, Keyes TJ, et al. Structural and functional features of central nervous system lymphatic vessels. *Nature*. 2015;523(7560):337-341.
14. Patel ZM, Holbrook EH, Turner JH, et al. International consensus statement on allergy and rhinology: Olfaction. *Int Forum Allergy Rhinol*. 2022;12(4):327-680.
15. Pillai VR, Kumar NS, Dhanya VK, Thomas J. Rhinosinusitis in Ayurveda: A critical review with special reference to Nasya Karma. *Int J Ayurvedic Med*. 2016;7(2):64-70.
16. Thakur M, Singh K, Lal B, Bhardwaj AK. Role of Vamana Karma in the management of Kaphaja Pratishyaya: A systematic review. *World J Pharm Pharm Sci*. 2019;8(9):430-440.
17. Sharma PV. *Dravyaguna Vijnana (Vegetable Drugs)*. Vol. 2. Varanasi: Chaukhamba Bharati Academy; 2012.
18. Tripathi B, editor. *Charaka Samhita*. Chikitsa Sthana, Adhyaya 26. Varanasi: Chaukhamba Surbharati Prakashan; 2013. p. 897-910.
19. Tewari PV. *Kaumarabhritya: Ayurvedic Paediatrics*. Varanasi: Chaukhamba Visvabharati; 2008.
20. Narayanaswamy V. Introduction to Ayurveda. *J Altern Complement Med*. 2005;11(6):1111-1112.

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