

INTEGRATED AYURVEDA MANAGEMENT OF POST-COVID OLFACTORY DYSFUNCTION (GHRANASHA): A SINGLE CASE REPORT

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ABSTRACT

Background: Olfactory dysfunction is one of the most consistent and often persistent sequelae of coronavirus disease 2019 (COVID-19), with sustentacular cell injury and secondary neuroinflammation of the olfactory epithelium as the principal biomedical mechanism. A subset of patients remain anosmic beyond three to six months despite corticosteroids and olfactory training. In Ayurveda, such loss of smell is described as Ghranasha, a Kapha Vata Pradhana disorder of the Ghranavaha Srotas amenable to Nasya Karma and allied Panchakarma procedures.

Case Presentation: A 34-year-old female schoolteacher presented with complete anosmia, hypogeusia, and intermittent parosmia persisting for five months after a mild, RT-PCR confirmed episode of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Diagnostic nasal endoscopy and contrast magnetic resonance imaging (MRI) of the olfactory cleft were structurally unremarkable, and an eight-week course of oral corticosteroids with essential oil based olfactory training had produced no appreciable benefit.

Diagnostic Assessment: Baseline evaluation using the Sniffin' Sticks threshold, discrimination, and identification (TDI) test battery revealed a score of 9 out of 48, consistent with functional anosmia. Visual analogue scores for smell and taste were low, and high sensitivity C-reactive protein (hs-CRP), ferritin, D-dimer, and MRI olfactory bulb volume indicated persistent low grade post-viral inflammation with bulb volume reduction.

Therapeutic Intervention: The patient received Snehapana with Go Ghrta followed by Sarvanga Abhyanga and Swedana, Marsha Nasya with Shadbindu Taila followed by Pratimarsha Nasya with Anu Taila, Dhoomapana, and Shamana Chikitsa with Vyaghryadi Kashaya, Saindhavadi Churna, Chyawanprash, and Trikatu Talisadi Churna over ten weeks, supported by Pathya Apathya and Pranayama.

Outcome: At the end of ten weeks, the TDI score improved to 33 out of 48, crossing the normosmia threshold, with parallel improvement in taste perception, a fall in hs-CRP, ferritin, and D-dimer toward reference limits, and an increase in olfactory bulb volume on MRI. No adverse events were recorded.

Conclusion: This case suggests that a structured, Snehapana based Shodhana protocol combined with sustained Nasya Karma and Rasayana oriented Shamana Chikitsa was followed by clinically meaningful and objectively verifiable recovery in corticosteroid refractory post-COVID Ghranasha. Unlike previously published Ayurvedic case reports of post-COVID Ghranasha, which have relied on subjective smell identification scores, this case corroborates recovery using the validated Sniffin' Sticks test alongside inflammatory and radiological biomarkers, and supports the case for controlled clinical trials in this condition.

KEYWORDS: Ghranasha; Post-COVID olfactory dysfunction; Nasya Karma; Snehapana; Rasayana; Anosmia; Case report

1. INTRODUCTION

Loss of the sense of smell emerged early in the coronavirus disease 2019 (COVID-19) pandemic as one of its most characteristic symptoms, and has since been recognised as a common cause of long-term morbidity after SARS-CoV-2 infection. Olfactory and gustatory disturbance affects a substantial proportion of patients during the acute illness, and objective psychophysical testing performed eight months after infection has continued to demonstrate hyposmia in about one in five patients and hypogeusia in almost a third, confirming that recovery is frequently incomplete even when patients no longer report symptoms subjectively.[1]

The cellular basis of this dysfunction has become progressively clearer. Sustentacular cells of the olfactory neuroepithelium, rather than the olfactory sensory neurons themselves, express the highest density of angiotensin converting enzyme 2 and transmembrane protease serine 2 and constitute the principal site of SARS-CoV-2 entry and injury.[2] Immunoinformatics research on SARS-CoV-2 has further highlighted the relevance of both cellular

and humoral immune responses in antiviral immunity.[28] Infection and subsequent loss of these supporting cells disrupts the local ionic and metabolic microenvironment required for normal olfactory signal transduction, triggers infiltration of myeloid cells, and sustains a low grade inflammatory state within the epithelium that can outlast the viral illness by many months.[3,4] Structural correlates of this process have been documented on magnetic resonance imaging, where a reduction in olfactory bulb volume has been reported in patients with persistent post-COVID anosmia in comparison with pre-infection or normative imaging.[5]

Despite this improved mechanistic understanding, effective treatment options for persistent post-COVID olfactory dysfunction remain limited. Corticosteroids and structured olfactory training are the most widely used interventions, yet a meaningful proportion of patients, particularly those with chronicity beyond three months, show only partial or no improvement, and a recent systematic review of randomised and non-randomised studies found that neither olfactory training nor corticosteroids produced a notable objective benefit, while the certainty of evidence for most other pharmacological interventions remained low.[6] This unmet need has generated growing interest in integrative and traditional approaches, including intranasal therapies, acupuncture, and Ayurvedic Nasya Karma, with individual case reports describing recovery in patients refractory to conventional care, although this supporting evidence itself remains at the single-case level and awaits confirmation in larger series.[7,8,9]

In Ayurveda, loss of the sense of smell is described under the broad heading of Ghranasha, or Nashta Gandha Jnana, a disorder of the Ghranendriya classically discussed among the Nasagata Roga in the Uttarantra of the Sushruta Samhita.[10] The nose is regarded as the direct anatomical and functional gateway to the Shira, and drugs administered through it are held to act upon the Shringataka Marma, a Sira Marma formed by the confluence of vessels nourishing the nose, eyes, ears, and tongue, making Nasya Karma the therapy of choice for disorders localised above the clavicle, the Urdhvajatrugata Roga.[11,12] Contemporary pharmacological and neuroimaging studies of intranasal drug delivery lend biological plausibility to this classical description, since the nasal mucosa and olfactory pathway offer a route by which therapeutic agents can reach the central nervous system while bypassing hepatic first pass metabolism.[13]

Published Ayurvedic case reports of post-COVID and idiopathic Ghranasha have shown encouraging results with Nasya Karma based protocols, whether used alone or combined with acupuncture, but most available reports rely on subjective smell identification scores rather than internationally validated psychophysical testing, and few incorporate parallel biochemical or radiological correlates of recovery.[7,8,9] A structured search of PubMed, Scopus, the AYUSH Research Portal, and DHARA using the terms "post-COVID anosmia," "post-COVID olfactory dysfunction," "Ghranasha," "Nasya Karma," and "Sniffin's Sticks" identified no prior Ayurvedic case report combining validated psychophysical testing with parallel inflammatory and MRI olfactory bulb correlates in this condition. This case is reported to document, using the validated Sniffin' Sticks threshold, discrimination, and identification test together with inflammatory and imaging biomarkers, the clinical course of a patient with chronic, corticosteroid and olfactory training refractory post-COVID Ghranasha managed with a structured Snehapana based Shodhana protocol, sustained Nasya Karma, and Rasayana oriented Shamana Chikitsa. The report follows the CARE (Case Report) guidelines for the reporting of clinical case studies.

2. Case Presentation

2.1 Patient Information

A 34 year old married Hindu female, employed as a schoolteacher and resident of an urban locality of Bhopal, Madhya Pradesh, presented to the outpatient department with complete loss of the sense of smell of five months duration. Her registration and clinical details are summarized in Table 1.

Table 1. Patient demographic proforma

Parameter	Detail
Case number and UHID	OPD/2025/0114
Name (initials)	S. R.
Age and sex	34 years, female
Occupation	School teacher
Religion and marital status	Hindu, married
Address	Urban residence, Bhopal, Madhya Pradesh, India
Duration of study	10 weeks with follow up

2.2 History of Present Illness

The patient had been in normal health until she tested positive for SARS-CoV-2 infection on reverse transcriptase polymerase chain reaction (RT-PCR) testing, five months prior to presentation. The acute illness was mild and

managed with home isolation, without requirement for hospitalisation or supplemental oxygen. Fever and myalgia resolved within six days of onset, but a complete loss of smell that had begun on the third day of illness persisted well beyond resolution of the systemic symptoms. She was evaluated by an otorhinolaryngologist six weeks after the acute infection. Diagnostic nasal endoscopy and contrast enhanced MRI of the olfactory cleft were structurally unremarkable, without evidence of mucosal obstruction, and she was diagnosed with post-viral, post-COVID olfactory dysfunction. A tapering course of oral corticosteroids (oral prednisolone, initiated at 40 mg per day and tapered by 10 mg every three days over a total of three weeks, per the prescribing otorhinolaryngologist's standard regimen for post-viral olfactory dysfunction) together with eight weeks of olfactory training using rose, eucalyptus, clove, and lemon essential oils produced no appreciable improvement, following which she sought consultation for Ayurveda management.

At presentation she additionally reported marked reduction in taste perception associated with the smell loss, mild nasal dryness with intermittent heaviness of the head (Shiro Gaurava), and occasional parosmia with distorted perception of coffee and cooking gas odours over the preceding six weeks.

2.3 Past, Personal, and Family History

There was no history of hypertension, diabetes mellitus, thyroid disorder, head trauma, or prior sinonasal surgery. She was a non-smoker and non-alcoholic. Her sleep (Nidra) was disturbed by anxiety related to the loss of smell, and she reported occasional suppression of natural urges (Vega Dharana), largely related to her work schedule. There was no family history of similar complaints, although her mother was a known case of allergic rhinitis. Her menstrual history was unremarkable, with regular cycles.

2.4 Clinical Findings: Prakriti and Ashtavidha Pariksha

On Ayurvedic clinical examination the patient was assessed as Pitta Kapha Pradhana Prakriti. The findings of Dashavidha and Ashtavidha Pariksha are summarised in Table 2.

Table 2. Prakriti assessment and Ashtavidha Pariksha (eight-fold examination)

Parameter	Finding
Prakriti (constitution)	Pitta Kapha Pradhana
Sara, Samhanana, Satmya, Satva	Madhyama in all four
Agni	Vishama Agni
Koshtha	Madhyama
Nadi (pulse)	78 per minute, regular, Pitta Kapha Nadi
Mala (stool)	Once daily, formed, occasional constipation
Mutra (urine)	4 to 5 times a day, clear, no burning micturition
Jihva (tongue)	Sama (mild coating), pale pink
Shabda (voice and speech)	Clear, normal
Sparsha (touch)	Anushna Sheeta (mildly cool), skin normal
Drik (eyes)	Normal, no pallor or icterus
Akriti (built)	Madhyama (moderate build), body mass index 23.1 kg/m ²

2.5 Local (ENT) and Systemic Examination

Anterior rhinoscopy showed a bilaterally healthy nasal mucosa without polyp or deviated nasal septum. Diagnostic nasal endoscopy confirmed a patent olfactory cleft on both sides without mucosal oedema or crusting. Examination of the cardiovascular, respiratory, and central nervous systems was within normal limits. Vital parameters recorded were blood pressure 116/76 mmHg, pulse rate 78 per minute, respiratory rate 16 per minute, temperature 98.2 degrees Fahrenheit, and oxygen saturation 99 percent on room air.

2.6 Timeline

Table 3. Clinical timeline from acute infection to Ayurveda consultation and follow up

Time point	Event
Day 0 (acute illness)	RT-PCR confirmed SARS-CoV-2 infection; fever and myalgia; anosmia onset on day 3 of illness

Time point	Event
Day 6	Resolution of fever and myalgia; anosmia persists
Week 6 post-infection	Otorhinolaryngology evaluation; nasal endoscopy and contrast MRI of olfactory cleft structurally unremarkable; diagnosis of post-viral olfactory dysfunction; corticosteroid taper initiated
Weeks 6 to 14	Eight weeks of essential oil based olfactory training; no appreciable improvement
Month 5 (Day 0 of case)	Ayurveda consultation; baseline Ashtavidha Pariksha, Sniffin' Sticks TDI testing, and biochemical and MRI assessment; Shodhana initiated
Day 1 to Day 5	Graded Snehapana with Go Ghrita
Day 6	Sarvanga Abhyanga and Swedana
Day 7 to Day 13	Marsha Nasya with Shadbindu Taila
Day 14 onward, upto 8 weeks	Pratimarsha Nasya with Anu Taila twice daily
Week 2, 4, 6, 8, 10	Follow up visits with serial TDI testing (Table 7)
Week 10	End of protocol assessment; investigations repeated

2.7 Diagnostic Assessment: Baseline Olfactory and Biochemical Evaluation

Baseline (Day 0) objective assessment used the Sniffin' Sticks threshold, discrimination, and identification (TDI) test battery, a visual analogue scale (VAS) for subjective smell and taste perception, and biochemical and radiological markers of COVID-19 recovery and inflammation of clinical relevance. The TDI test is a validated, internationally standardised psychophysical tool for quantitative assessment of olfactory function, with a combined score above 30.5 out of 48 conventionally taken to indicate normosmia,[14,15] and abbreviated screening versions of the same battery have shown good diagnostic accuracy specifically in COVID-19 related olfactory disorders.[16] The adult reference range for MRI olfactory bulb volume quoted in Table 4 is drawn from normative volumetric MRI studies in healthy adults rather than from the case-report literature on post-COVID bulb atrophy; values vary appreciably across normative studies depending on MRI protocol and population, and the threshold applied here should be interpreted as indicative rather than as a single universally agreed cut-off.[27] The baseline findings are presented in Table 4.

Table 4. Baseline (Day 0) objective olfactory, biochemical, and radiological assessment

Parameter	Unit	Baseline value	Reference range
Sniffin' Sticks TDI score	score/48	9	greater than 30.5 = normosmia
Butanol threshold subtest	score/9	1.2	5 or above = normal
Odour identification subtest	score/16	3	12 or above = normal
VAS, smell perception	0 to 10	1	above 7 = good
VAS, taste perception	0 to 10	2	above 7 = good
Serum hs-CRP	mg/L	6.4	less than 3.0
Serum ferritin	ng/mL	168	13 to 150
D-dimer	microgram/mL FEU	0.72	less than 0.5
Absolute eosinophil count	cells/microL	620	40 to 400
ESR	mm in 1st hour	28	0 to 20
MRI olfactory bulb volume (mean, both sides)	cubic mm	42	greater than 50 (adult norm)
Vitamin D3 (25-OH)	ng/mL	18.2	30 to 100

2.9 Therapeutic Intervention

A structured protocol combining Shodhana (purification), Shamana (palliative internal medicine), and adjuvant procedures was planned over ten weeks, guided by the principle of Samprapti Vighatana, that is, interruption of the disease process, and by the classical sequencing and dosing principles governing Snehapana and Samyak Snigdha Lakshana.[17] The complete protocol is summarised in Table 5.

Table 5. Integrated treatment protocol

Procedure or drug	Dose and route	Duration	Rationale (Karma)
Snehapana with Go Ghrita	Graded dose, 30 to 90 mL per day, oral, empty stomach	Day 1 to Day 5, until Samyak Snigdha Lakshana appeared	Vata Anulomana and Srotoshodhana, softens Avarana prior to Nasya
Sarvanga Abhyanga and Swedana	Whole body oleation and sudation	Day 6	Snehana and Swedana prior to purification, mobilises vitiated Dosha
Marsha Nasya with Shadbindu Taila	8 drops each nostril, empty stomach	Day 7 to Day 13 (7 days)	Kapha Vata Hara, direct action at Shringataka Marma, clears Ghranavaha Srotas
Pratimarsha Nasya with Anu Taila	2 drops each nostril, twice daily	8 weeks	Sustained Srotoshodhana and nourishment of Ghranendriya
Dhoomapana	Vacha and Pippali Varti, once daily	14 days	Kapha Nissarana from Urdhvajatra, clears nasal passage
Vyaghryadi Kashaya	15 mL twice daily, before food, with warm water	8 weeks	Kapha Vata Hara, Shwasa Kasa Hara, supports Srotoshodhana
Saindhavadi Churna	3 g twice daily, with honey, after food	8 weeks	Deepana Pachana, Kapha Vata Hara
Chyawanprash	10 g once daily, morning, as Rasayana	10 weeks	Rasayana and Vyadhikshamatva (immunomodulation), Dhatu Poshana
Trikatu Talisadi Churna	1 g at bedtime, with warm water	4 weeks	Kapha and Prana Vata Anulomana
Shiro Abhyanga with Ksheerabala Taila	Alternate days, 3 times a week	4 weeks	Vata Shamana, nourishes Indriya
Steam inhalation with Nirgundi Patra Swedana	Once daily	2 weeks	Local Swedana, clears Kapha Avarana
Arogyavardhni Vati	2 tab twice daily	2 weeks	Deepana–Pachana and Amapachana, helps correct Agni and Srotodushti

Shadbindu Taila and Anu Taila are compound, oil based Nasya formulations described for Urdhvajatrugata Roga in classical and contemporary Ayurvedic pharmacopoeia.[18,19] Vacha (*Acorus calamus* Linn.) and Pippali

(Piper longum Linn.) were used for Dhoomapana. Nirgundi (Vitex negundo Linn.) leaves were used for the local steam inhalation. Trikatu, a component of Trikatu Talisadi Churna, comprises Sunthi (Zingiber officinale Roscoe), Maricha (Piper nigrum Linn.), and Pippali (Piper longum Linn.) in equal proportion.

2.10 Pathya and Apathya (Diet and Lifestyle Regulation)

The patient was advised warm, freshly cooked, and mildly spiced food, adequate hydration, taking Nasya strictly on an empty stomach, and nasal breathing exercises including Anulom Vilom and Bhramari Pranayama as part of Pathya. Apathya included avoidance of cold or refrigerated food and beverages, curd at night, daytime sleep (Diwaswapna), exposure to dust and smoke, and suppression of natural urges (Vega Dharana).[20]

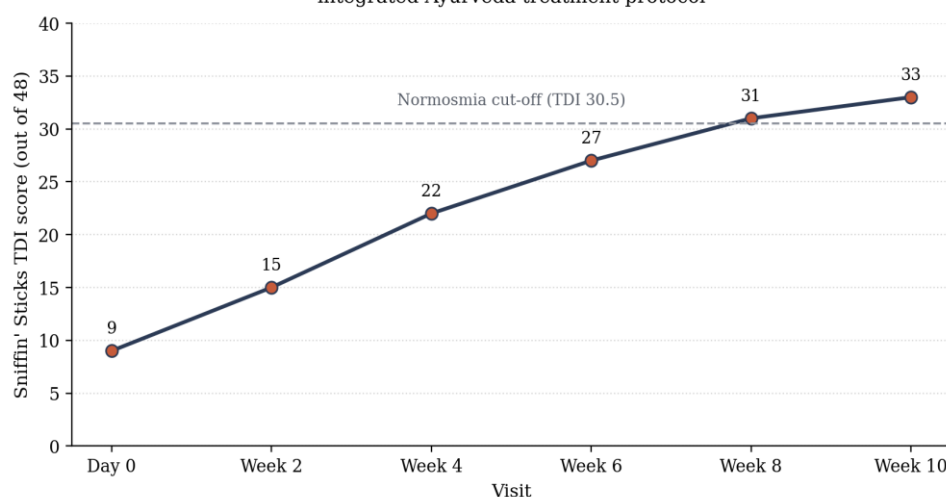
2.11 Follow-up and Outcome

The patient was reviewed at two-weekly intervals for ten weeks, with serial assessment of the Sniffin' Sticks TDI score and subjective symptoms. The visit-wise course is summarised in Table 6 and illustrated in Figure 2.

Table 6. Visit-wise follow up

Visit	Finding
Visit 1, Day 0	Baseline assessment recorded; Shodhana initiated
Visit 2, Week 2	Nasya continued; TDI score 15 of 48; mild subjective improvement
Visit 3, Week 4	TDI score 22 of 48; parosmia episodes reduced
Visit 4, Week 6	TDI score 27 of 48; taste perception clearly improved
Visit 5, Week 8	TDI score 31 of 48; near normal smell for strong odours
Visit 6, Week 10, final	TDI score 33 of 48 (normosmia range); investigations repeated

Figure 2. Serial Sniffin' Sticks TDI score during the ten week integrated Ayurveda treatment protocol



Serial improvement in Sniffin' Sticks TDI score across the treatment period, crossing the normosmia threshold of 30.5 by week 8

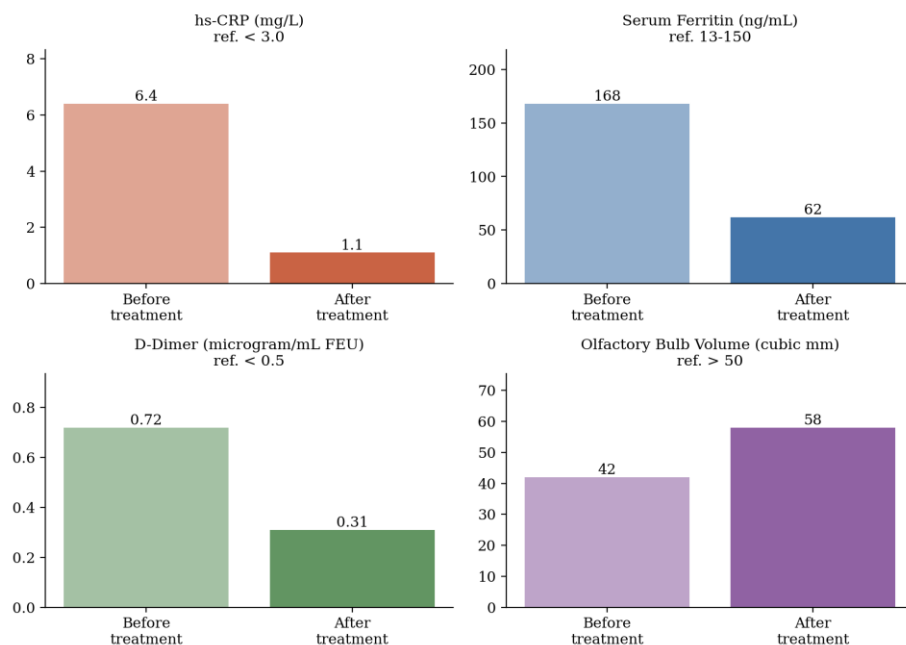
At the end of the ten weeks protocol, all objective and subjective parameters had improved, with the TDI score rising from 9 to 33 out of 48, entering the normosmia range, and parallel normalisation of inflammatory markers and improvement in MRI olfactory bulb volume. The before-after comparison is presented in Table 7 and Figure 3. No adverse events, nasal irritation, or treatment related complications were reported during the protocol.

Table 7. Result: before and after comparison of key outcome measures

Parameter	Unit	Before treatment	After treatment	Change
Sniffin' Sticks TDI score	score/48	9	33	+24, normosmia achieved

Parameter	Unit	Before treatment	After treatment	Change
Butanol threshold subtest	score/9	1.2	6.8	5 or above = normal
Odour identification subtest	score/16	3	13	12 or above = normal
VAS, smell perception	0 to 10	1	8	+7
VAS, taste perception	0 to 10	2	8	+6
Serum hs-CRP	mg/L	6.4	1.1	Normalised
Serum ferritin	ng/mL	168	62	Toward reference range
D-dimer	microgram/mL FEU	0.72	0.31	Normalised
Absolute eosinophil count	cells/microL	620	310	Toward reference range
ESR	mm in 1st hour	28	12	Toward reference range
MRI olfactory bulb volume	cubic mm	42	58	+16 cubic mm
Vitamin D3 (25-OH)	ng/mL	18.2	22.4	Toward reference range

Figure 3. Inflammatory and imaging biomarkers before and after the ten week integrated Ayurveda protocol



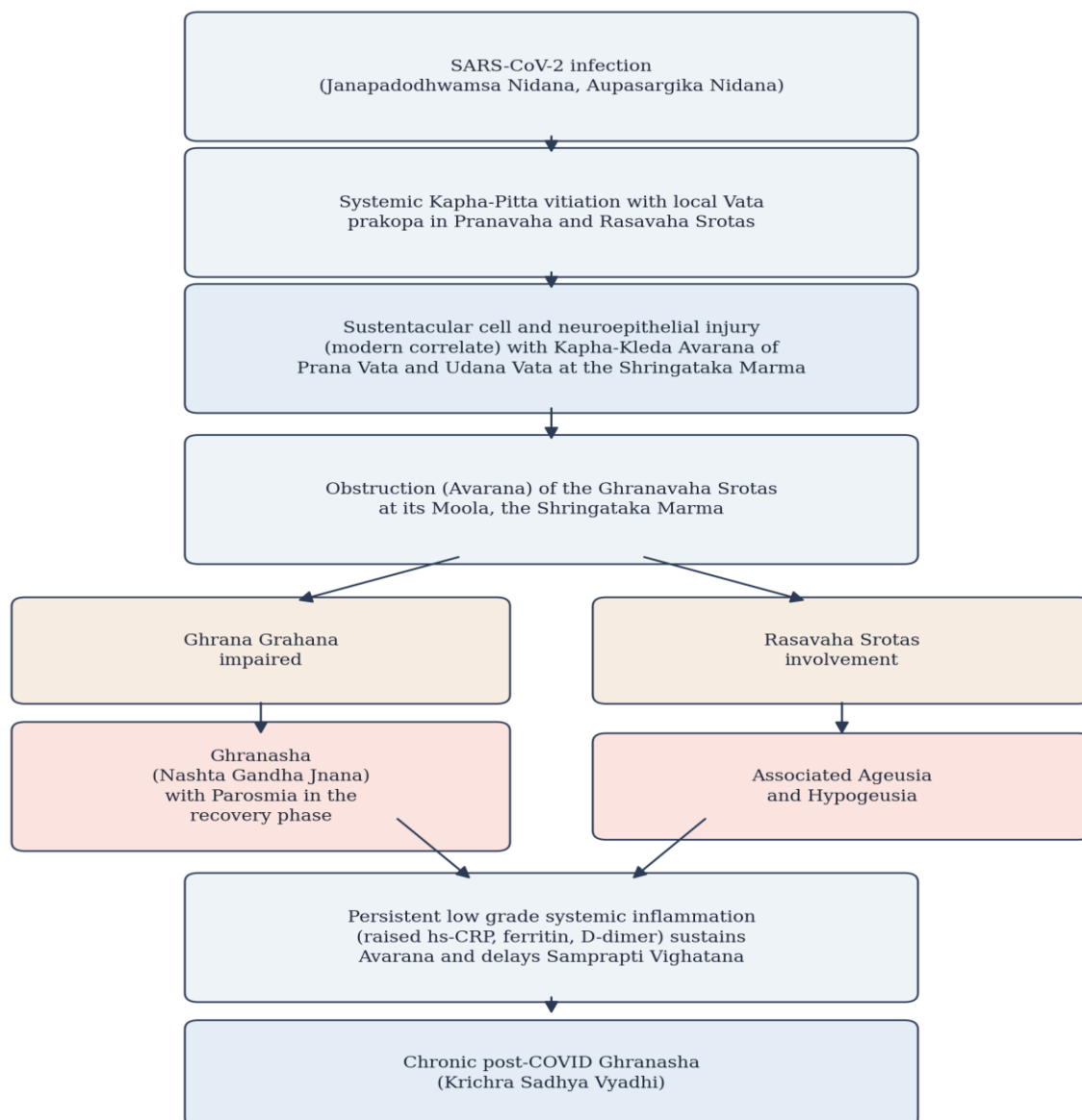
Inflammatory and radiological biomarkers before and after the ten week protocol, showing consistent movement toward reference ranges

The values in Table 7 represent single pre- and post-treatment measurements in one patient, without repeated baseline sampling, variance estimates, or a natural-history control arm; no inferential statistical comparison is applicable to this n = 1 design, and the reported deltas should be interpreted as a qualitative description of the direction and approximate magnitude of change rather than as trial-level effect estimates.

3. DISCUSSION

This case illustrates Ghranasha arising as an Uttarakalika, or sequela, of a Janapadodhwamsa Vyadhi such as COVID-19,[21] correlating clinically with post-viral anosmia mediated by injury to the sustentacular cells and olfactory neuroepithelium and by persistent low grade neuroinflammation.[2,3,4] A proposed Samprapti integrating the Ayurvedic and contemporary biomedical perspectives on this case is presented in Figure 1.

Figure 1. Proposed Samprapti (pathogenesis) of post-COVID Ghranasha, integrating Ayurvedic and contemporary biomedical correlates



Proposed pathogenesis linking Kapha mediated Avarana of Prana Vata at the Shringataka Marma with sustentacular cell injury and persistent post-viral inflammation

Nasya Karma delivers medication directly to the Shringataka Marma, described in the Sushruta Samhita as a Sira Marma formed by the confluence of the vessels supplying the nose, eyes, ears, and tongue, and considered the anatomical seat governing Ghranendriya function.[11,22] This may support direct pharmacological and neuroregenerative action upon the olfactory epithelium and bulb, a proposition under active investigation in an ongoing exploratory randomised controlled trial protocol examining functional MRI correlates of neurophysiological effects following intranasal administration of Ayurveda medicines, whose completed results are awaited.[13] The nasal mucosa and olfactory pathway are increasingly recognised in contemporary

pharmacology as a route capable of bypassing hepatic first pass metabolism, lending biological plausibility to the classical description of the nose as the gateway to the Shira.[12,19]

Shodhana through graded Snehapana and subsequent Nasya likely reduced Kapha Avarana obstructing Vata function at the level of the Shringataka Marma, consistent with the classical description of Avarana as a state in which Kapha envelops and impairs the normal movement of Vata, producing localised loss of function without gross structural change, as was seen on this patient's endoscopy and baseline MRI.[23] Rasayana in the form of Chyawanprash is likely to have supported tissue regeneration (Dhatu Poshana) and general immunity; clinical evidence for the adaptogenic and immunomodulatory action of Chyawanprash, including in the specific context of COVID-19, has been summarised in recent systematic reviews and randomised trials.[24]

The serial rise in TDI score from 9 to 33 out of 48 in this case, crossing the internationally accepted normosmia cut-off of 30.5, is consistent with the magnitude of recovery reported with validated psychophysical testing in other integrative and Ayurvedic case reports of post-COVID olfactory dysfunction, and compares favourably with the more modest gains typically reported for olfactory training or corticosteroids alone in patients with chronicity beyond three months.[6,7,8,9] The parallel fall in hs-CRP and the normalising trend in ferritin and D-dimer track the resolution of systemic post-viral inflammation, a pattern that has itself been associated with disease recovery and reduced symptom burden in COVID-19 cohorts,[25] and this biochemical trend accompanied the marked improvement in TDI score, consistent with an anti-inflammatory and neuro-restorative effect of the overall protocol acting at the level of the injured sustentacular cell population.[3,4] The presence of Sunthi (*Zingiber officinale*) in Trikatu Talisadi Churna provides a plausible pharmacological basis for an anti-inflammatory contribution, as ginger-derived constituents including gingerols and shogaols have demonstrated modulation of inflammatory pathways and mediators in experimental and clinical literature.[29]

The increase in MRI olfactory bulb volume from 42 to 58 cubic mm over the treatment period is a notable observation, since olfactory bulb atrophy has been repeatedly documented as a structural correlate of persistent post-COVID anosmia and, in some reports, has been shown to accompany impaired recovery,[5] against the normative adult volumetric range discussed above.[27] While a single case cannot establish causality, and spontaneous partial recovery of bulb volume with resolution of local oedema cannot be entirely excluded, the temporal association between the imaging change and the marked psychophysical improvement is biologically coherent with a neuro-restorative process at the level of the olfactory epithelium and bulb. The concurrent correction of vitamin D insufficiency is also of interest, given that low vitamin D status has been associated with impaired olfactory pathway integrity on imaging in other conditions, and may represent either a marker of general recovery or a contributory factor in this patient's initial presentation.[26]

This case adds to a small but growing body of Ayurvedic case literature on post-COVID Ghranasha and allied Nasya Karma protocols.[7,8,9] Its principal points of difference from previously published reports are, first, the use of a preparatory Snehapana based Shodhana phase prior to Nasya, in keeping with the classical sequence of Purvakarma, and second, the incorporation of a validated multi-domain psychophysical test together with parallel inflammatory and radiological biomarkers, which together provide a more objective basis for assessing outcome than smell identification scores alone.

STRENGTHS AND LIMITATIONS

The principal strength of this report is its use of the validated Sniffin' Sticks TDI battery alongside biochemical and MRI correlates, providing objective, multi-domain evidence of recovery in a patient who had already failed an adequate trial of conventional therapy. The report is nonetheless subject to the inherent limitations of a single, uncontrolled case. Improvement cannot be definitively attributed to the Ayurveda protocol alone, since some degree of natural recovery from post-viral olfactory dysfunction continues to occur even beyond five months in a proportion of patients, although the prior eight weeks trial of corticosteroids and olfactory training without benefit makes pure spontaneous recovery a less likely sole explanation. Quantitatively, objective psychophysical testing performed eight months after infection has been reported to show persisting hyposmia in about one in five patients and hypogeusia in almost a third, indicating that a meaningful minority remain recoverable at this stage of chronicity and that this natural-history rate must be weighed against the magnitude of recovery seen here.[1] Similarly, hs-CRP, ferritin, D-dimer, eosinophil count, and ESR are all recognised markers of post-COVID recovery that tend to normalise with the simple passage of time in the majority of patients regardless of any specific intervention, so the parallel biochemical improvement observed in this case cannot be taken as independent confirmation of a specific Ayurveda treatment effect and should be interpreted alongside the psychophysical and imaging findings rather than as a stand-alone corroborating measure, in the same way that concurrent weight loss is discussed as a confound in comparable Ayurveda case reports of chronic disease. Vitamin D3 repletion was not a specified component of the Ayurveda protocol summarised in Table 6, and the improvement in vitamin D3 status from 18.2 to 22.4 ng/mL over the treatment period was therefore incidental rather than protocol-directed; given the documented association between low vitamin D status and impaired olfactory pathway integrity on imaging, this represents an unaddressed potential confound that cannot be excluded as a contributor to the observed olfactory and inflammatory improvement.[26] The absence of a pre-illness MRI for direct comparison of olfactory bulb volume, the reliance on self-reported visual analogue scores for taste, and the absence of longer term follow up beyond ten weeks to confirm durability of the response are additional limitations. Controlled clinical trials with adequate sample size, standardised outcome measures, and extended follow up are required to confirm the efficacy signal suggested by this case.

4. Patient's Perspective

The patient reported that the gradual return of smell and taste sensation over the ten weeks period was accompanied by a corresponding reduction in the anxiety and sleep disturbance that had developed around her sensory loss, and that this improvement meaningfully supported her return to comfortable functioning in her occupational and domestic routine. She expressed satisfaction with the tolerability of the protocol, noting no discomfort attributable to the Nasya or associated procedures, and indicated willingness to continue periodic Pratimarsha Nasya as a maintenance measure.

5. CONCLUSION

Integrated Ayurveda management combining Snehapana based Shodhana, sustained Nasya Karma, and Rasayana oriented Shamana Chikitsa was temporally associated with significant and objectively verifiable improvement in a case of chronic post-COVID olfactory dysfunction that had not responded to conventional olfactory training or corticosteroids. The parallel resolution of psychophysical, biochemical, and radiological parameters is consistent with, but does not prove, a genuine treatment effect, since spontaneous partial recovery is recognised even at this stage of chronicity in a minority of patients,[1] and a genuine treatment effect cannot be firmly separated from natural history in a single, uncontrolled case. This finding indicates a case for structured, controlled clinical trials evaluating Nasya Karma based protocols in post-viral Ghranasha, and for wider incorporation of validated olfactory testing into Ayurvedic outcome reporting.

DECLARATIONS

Patient Consent

Written informed consent was obtained from the patient for the publication of this case report and any accompanying clinical data and images, in accordance with the journal's patient consent policy. A signed, CARE-compliant consent form is on file with the corresponding author and is available on reasonable request.

Conflict of Interest

The authors declare that they have no conflict of interest.

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This case report received no specific grant or financial support from any funding agency in the public, commercial, or not-for-profit sectors.

Data Availability

This report is based on the verbatim clinical record of a single, real patient; no composite or illustrative case construction was used at any stage. The de-identified Sniffin' Sticks threshold, discrimination, and identification test scoring sheets, nasal endoscopy and olfactory cleft MRI reports, and laboratory reports underlying the reported outcomes are available from the corresponding author on reasonable request, subject to institutional data-sharing policy and continued protection of patient confidentiality.

Author Contributions

Dr. Hemanta Gautam and Dr. Vikash Kumar managed the case and drafted the manuscript. Dr. Mohamada Rafi, Dr. P. Penchala Rao and Dr. Sudesh Lamoria contributed to Panchakarma procedure planning and manuscript revision. Dr. Vikash Kumar, Dr. P. Penchala Rao and Dr. Sudesh Lamoria supervised the case management, verified the clinical and classical references, and critically revised the manuscript. All authors read and approved the final manuscript.

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