



Case Study

AYURVEDIC APPROACH IN THE MANAGEMENT OF ADENOID HYPERTROPHY ASSOCIATED WITH EUSTACHIAN TUBE DYSFUNCTION

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ABSTRACT

Adenoid hypertrophy is a common paediatric condition characterized by enlargement of the nasopharyngeal lymphoid tissue, causing nasal obstruction, mouth breathing, snoring, recurrent upper respiratory tract infections, and Eustachian tube dysfunction. In Ayurveda, its clinical presentation can be correlated with *Kantha saluka*, a condition involving obstructive growth in the throat region. A 9-year-old female child presented with mouth breathing, snoring, recurrent cough, and rhinorrhea since the age of three years. Clinical examination revealed bilateral inferior turbinate hypertrophy, deviated nasal septum, and Grade I retraction of both tympanic membranes. X-ray nasopharynx (lateral view) showed adenoid hypertrophy, while tympanometry demonstrated bilateral Type C tympanograms suggestive of Eustachian tube dysfunction. The patient was treated with *Karpooradi taila* local abhyanga over the chest, followed by *Pratimarsha nasya* with *Suntyadi arka*, *Dhanyamla gandoosha*, and internal administration of *Vasarishtam*, *Kanakasavam*, *Suryaprabha gulika*, and *Dasamoola rasayana* for 21 days. Significant improvement was observed in mouth breathing, snoring, rhinorrhoea, and cough. Repeat tympanometry revealed conversion of bilateral Type C to Type A tympanograms, indicating normalization of middle ear pressure. The findings suggest that this Ayurvedic treatment protocol may be an effective conservative approach for adenoid hypertrophy associated with Eustachian tube dysfunction.

INTRODUCTION

Adenoid hypertrophy is a common pediatric disorder characterized by enlargement of the lymphoid tissue in the nasopharynx. The enlarged adenoid mass can obstruct the nasopharyngeal airway and mechanically interfere with the normal function of the Eustachian tube. As a result, children may present with nasal obstruction, mouth breathing, snoring, recurrent upper respiratory tract infections, sleep disturbances, and hearing-related complaints. Eustachian tube dysfunction is one of the most frequent complications associated with adenoid hypertrophy and may lead to negative middle ear

pressure, impaired ventilation of the middle ear, and hearing impairment. Tympanometric abnormalities are commonly observed in such patients and serve as an objective indicator of Eustachian tube dysfunction^[1].

Conventional management includes medical therapy and adenoidectomy in cases with persistent symptoms or significant obstruction. Although surgery remains the standard treatment for severe adenoid hypertrophy, concerns regarding anesthesia, postoperative complications, recurrence, and parental preference for conservative treatment have encouraged the exploration of non-surgical therapeutic options.

In Ayurveda, the clinical features of adenoid hypertrophy associated with ETD can be correlated with *Kantha saluka*^[2], a condition predominantly involving vitiated *Kapha dosha* causing obstruction in the nasopharyngeal region. *Kapha* accumulation leads to *Srotorodha*, resulting in impaired respiratory and auditory functions. Ayurvedic management aims at

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reducing *Kapha*, relieving obstruction, improving local function, and restoring physiological balance through internal medications and procedures such as *Nasya* and *Gandoosha*.

Nasya karma is regarded as the prime therapeutic procedure for diseases affecting the *Urdhwajatrugata* region and facilitates the elimination of vitiated *Doshas* from the head and neck. The present case report describes the successful Ayurvedic management of adenoid hypertrophy associated with Eustachian tube dysfunction in a pediatric patient, resulting in marked symptomatic relief and improvement in tympanometric findings, thereby avoiding surgical intervention.

Case report

A 9-year-old female child attended the Shalakyatantra OPD with complaints of:

- Mouth breathing and snoring during sleep since 3 years of age.
- Recurrent cough and rhinorrhea since 3 years of age.

The symptoms had persisted despite previous treatment. The child had consulted a homeopathic physician approximately two years prior for recurrent fever and mouth breathing. Clinical and radiological evaluation confirmed adenoid hypertrophy. She received homeopathic treatment for nearly two years; however, the symptoms persisted. Therefore, she was brought to our OPD for Ayurvedic management.

Clinical findings

General Examination

Parameter	Findings
Appetite	Poor
Bowel habits	Regular

Micturition	Normal
Sleep	Sound

Ent examination

Anterior rhinoscopy

- Bilateral inferior turbinate hypertrophy (More prominent on the right side).
- Deviated nasal septum towards the left side.

Throat examination

- Within normal limits.

Otoscopic examination

- Bilateral external auditory canals normal.
- Grade I retraction of both tympanic membranes.

Investigations

X-ray Nasopharynx -Lateral View (27/03/2026)

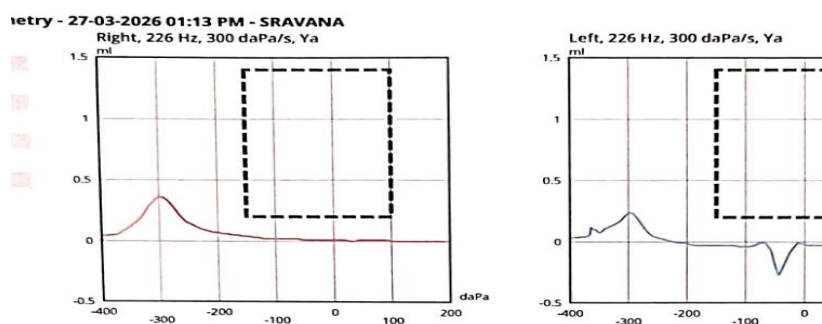
Pre-treatment X-ray nasopharynx (lateral view) revealed enlargement of adenoid tissue causing narrowing of the nasopharyngeal airway, suggestive of adenoid hypertrophy



Tympanometry before treatment (27/03/2026)

Table 1: Tympanometry before treatment

Parameter	Right ear	Left ear
Ear canal volume	0.59 ml	0.62 ml
Compliance	0.36 ml	0.24 ml
Pressure	-294 daPa	-295 daPa
Gradient	64 daPa	33 daPa
Tympanogram	Type C	Type C



Interpretation: Bilateral Type C tympanogram indicative of Eustachian tube dysfunction.

Ayurvedic diagnosis

Based on the clinical features, the condition was diagnosed as *Kantashaluka* with *Kapha-Vata* predominance.

Treatment intervention

Table 2: Treatment Protocol

S.No.	Intervention	Dose/Frequency	Duration
1	Local <i>Abhyanga</i> over chest with <i>Karpooradi Taila</i> , <i>Karpoora</i> , and <i>Saindhava Lavana</i> followed by <i>Pratimarsha nasya</i> and <i>Gandoosha</i>	Twice daily	21 days
2	<i>Pratimarsha Nasya</i> with <i>Suntyadi Arka</i>	2 drops in each nostril twice daily	21 days
3	<i>Dhanyamla Gandoosha</i>	Twice daily	21 days
4	<i>Vasarishtam</i> + <i>Kanakasavam</i>	15ml twice daily, after food	21 days
5	<i>Suryaprabha Gulika</i>	1 tablet twice daily, with <i>Arishta</i>	21 days
6	<i>Dasamoola Rasayana</i>	5 g at bedtime, after food	21 days

RESULTS

Following 21 days of treatment, considerable improvement was observed in all major symptoms. Although a pre-treatment lateral view X ray of the nasopharynx was obtained to confirm adenoid hypertrophy, post treatment radiographic evaluation was not performed. Since the patient was a child, repeat X-ray exposure was avoided to minimize unnecessary radiation exposure. Therefore, treatment outcomes were assessed primarily through clinical parameters and tympanometric changes rather than repeat radiological imaging.

Subjective symptom scoring criteria

Score	Severity
0	Absent
1	Mild
2	Moderate
3	Severe

Table 3: Subjective Symptom Assessment

Symptom	Before Treatment	After Treatment
Mouth breathing	3	1
Snoring	3	1
Rhinorrhea	2	0
Recurrent cough	2	0

Table 4: Percentage Improvement in Symptoms

Symptom	Improvement (%)
Mouth breathing	66.7%
Snoring	66.7%
Rhinorrhea	100%
Recurrent cough	100%

Following 21 days of treatment, marked improvement was observed in all major symptoms. Mouth breathing and snoring were substantially reduced, while rhinorrhea and recurrent cough completely subsided.

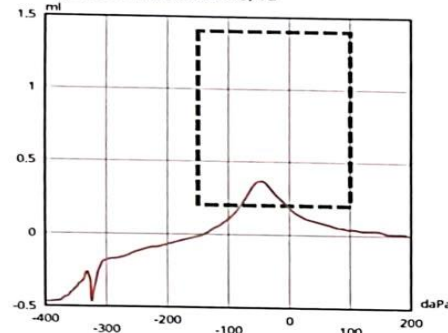
Tympanometry After Treatment (23/04/2026)

Table 5: Tympanometry after treatment

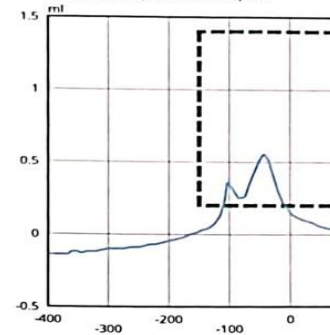
Parameter	Right ear	Left ear
Ear canal volume	0.71 ml	0.66 ml
Compliance	0.37 ml	0.56 ml
Pressure	-45 daPa	-43 daPa
Gradient	64 daPa	55 daPa
Tympanogram	Type A	Type A

γ - 23-04-2026 03:50 PM - SRAVANA

Right, 226 Hz, 300 daPa/s, Ya



Left, 226 Hz, 300 daPa/s, Ya

**Table 6: Comparison of Tympanometric Findings**

Parameter	Right Ear Before	Right Ear After	Left Ear Before	Left Ear After
ECV (ml)	0.59	0.71	0.62	0.66
Compliance (ml)	0.36	0.37	0.24	0.56
Pressure (daPa)	-294	-45	-295	-43
Tympanogram Type	Type C	Type A	Type C	Type A

DISCUSSION

Adenoid hypertrophy is a common paediatric condition that can cause upper airway obstruction and Eustachian tube dysfunction. Enlargement of adenoid tissue adjacent to the pharyngeal opening of the Eustachian tube interferes with normal middle ear ventilation, resulting in negative middle ear pressure and tympanometric abnormalities, commonly presenting as a Type C tympanogram¹. Persistent ETD may predispose affected children to hearing impairment, recurrent upper respiratory tract infections, and impaired quality of life. In the present case, the child exhibited chronic mouth breathing, snoring, recurrent cough, rhinorrhea, and bilateral

Type C tympanograms, indicating significant upper airway obstruction with associated Eustachian tube dysfunction^[1].

In Ayurveda, adenoid hypertrophy can be correlated with *Kantha saluka*, a disease of the throat region predominantly caused by vitiated *Kapha Dosha*. It describes *Kantha saluka* as a raised, matted swelling looking like plum seed, occurring in the throat that obstructs the passage and causes discomfort resembling pricking by a thorn. The lesion is described as resembling *Saluka*^[2,3] (tuber of water lily or nutmeg). These classical descriptions show remarkable similarity to the gross appearance of

hypertrophied adenoid tissue, which appears as a lobulated mass occupying the nasopharyngeal space and producing obstruction to normal airflow. The morphological resemblance between the adenoid specimen and *Saluki* further supports the Ayurvedic correlation of adenoid hypertrophy with *Kantha Saluka*.



The disease process is predominantly *Kapha*-dominant and associated with *Srotorodha*. Aggravated *Kapha* accumulates in the nasopharyngeal region and obstructs the normal movement of *Prana Vata* and *Udana Vata*, resulting in symptoms such as nasal obstruction, mouth breathing, snoring, and respiratory difficulty. In addition to *Kantha saluka*, the clinical presentation in the present case can also be understood through the principles of *Shwasa roga samprapti*. The predominance of respiratory symptoms, particularly recurrent cough, snoring, and mouth breathing, suggests significant involvement of *Pranavaha srotas*, with secondary involvement of *Udakavaha* and *Annavaha srotas*. Therefore, the treatment protocol was planned with the objectives of *Kapha Vilayana*, *Shothahara*, *Srotoshodhana*, restoration of normal *Pranavaha srotas* function, and prevention of disease recurrence.

Along with therapeutic interventions, appropriate *Pathya apathya* was emphasized. The patient was advised to avoid cold, refrigerated, and *Abhishyandi ahara*, which are known to aggravate *Kapha* and promote *Ama* formation. Maintenance of proper dietary habits and control of *Ama* were considered important in preventing further vitiation of *Udakavaha* and *Annavaha srotas* and supporting long-term improvement.

Karpooradi taila local *Abhyanga* was administered to facilitate local circulation, reduce *Kapha* accumulation, and prepare the region for subsequent therapeutic procedures. *Pratimarsha nasya* with *Suntyadi arka* constituted the principal therapeutic intervention. *Suntyadi Arka* is a formulation described in *Arka Prakasha* for the management of *Kshavathu* and contains ingredients similar to those of *Suntyadi Taila*. Although *Suntyadi Taila* is traditionally indicated, the *Arka* form was selected in this case considering the paediatric age group. Due to its lower viscosity and higher aqueous

content, *Suntyadi arka* is less likely to produce nasal blockage and is more suitable for facilitating drainage of accumulated mucus. Furthermore, the *Agneya* nature of *Arka* contributes to *Kapha Vilayana* and clearance of nasopharyngeal secretions. Its *Ushna*, *Tikshna*, *Kapha-Vatahara*, and *Shothahara* properties help reduce mucosal edema and congestion, improve airway patency, and restore physiological function in the nasopharyngeal region. By acting locally near the pharyngeal opening of the Eustachian tube, *Nasya* may facilitate restoration of middle ear ventilation and improve Eustachian tube function.

Dhanyamla Gandoosha served as an important supportive intervention through both mechanical and medicinal actions. The mechanical effect is achieved through retention of *Dhanyamla* in the oral cavity, which provides mild stimulation of the soft palate muscles, particularly the tensor veli palatini and levator veli palatini muscles that assist in opening the Eustachian tube. This may facilitate pressure equalization and improve middle ear ventilation. In addition, *Dhanyamla* possesses *Kapha chedaka*, *Kapha shodhana*, and *Langhana* properties. Its medicinal action helps reduce *Kapha*-induced obstruction, mucosal inflammation, and edema around the nasopharyngeal region, thereby supporting normal Eustachian tube function.

Vasarishtam and *Kanakasavam* were administered to address recurrent respiratory symptoms and reduce *Kapha* predominance within the respiratory tract. *Suryaprabha Gulika* acted as *Deepana-pachana* and *Kapha-vatahara*, facilitating correction of the underlying *Doshic* imbalance and reducing *Ama*. *Dasamoola Rasayana* provided *Shothahara* and *Rasayana* effects, contributing to reduction of inflammation and enhancement of resistance against recurrent respiratory infections.

An important classical consideration is that Sushruta has classified *Kantha saluka* as *Śastra nipata sadhya*^[3], indicating that complete cure is traditionally achieved through surgical intervention. This concept is comparable to the contemporary management of adenoid hypertrophy, where adenoidectomy remains the standard treatment for severe or persistent cases. However, despite this classical surgical indication, the present case demonstrated significant improvement through conservative Ayurvedic management. This observation suggests that, particularly in selected cases with mild to moderate disease, Ayurvedic interventions may help reduce symptom severity, improve physiological function, and potentially delay or reduce the need for surgical intervention.

The most significant finding in the present case was the conversion of bilateral Type C tympanograms

to bilateral Type A tympanograms following 21 days of treatment. The improvement in middle ear pressure from approximately -295 daPa to -45 daPa objectively indicates restoration of Eustachian tube function. Simultaneously, marked reduction in mouth breathing, snoring, recurrent cough, and rhinorrhea was observed. These findings suggest that the combined action of *Abhyanga*, *Pratimarsha nasya*, *Dhanyamla gandoosha*, internal medications, and adherence to appropriate *Pathya apanya* contributed to both symptomatic relief and objective improvement in middle ear ventilation. The present case highlights the potential role of Ayurvedic conservative management in adenoid hypertrophy associated with Eustachian tube dysfunction. Although conclusions cannot be generalized from a single case, the marked symptomatic relief and objective normalization of tympanometric findings observed in this patient suggest that Ayurvedic interventions may offer a promising non-surgical approach in selected cases of adenoid hypertrophy with associated Eustachian tube dysfunction. Further clinical studies with larger sample sizes are warranted to validate these findings.

CONCLUSION

The present case demonstrates that adenoid hypertrophy associated with Eustachian tube dysfunction can be effectively managed through an Ayurvedic treatment protocol comprising *Pratimarsha nasya* with *Suntyadi arka*, internal medications, and supportive therapies. Significant symptomatic

improvement was observed along with objective evidence of recovery, as demonstrated by the conversion of bilateral Type C tympanograms to bilateral Type A tympanograms after 21 days of treatment. The findings also emphasize the importance of following proper *Pathya apanya*, particularly avoidance of *Kapha-vardhaka* and *Abhishyandi ahara-vihara*, in preventing recurrence and maintaining therapeutic benefits. This case suggests that Ayurvedic management may provide a safe and effective conservative approach in selected pediatric cases and may help reduce the need for surgical intervention. Further clinical studies are required to substantiate these findings.

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