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Case Report

Ayurvedic Management of *Vata-Kaphaja Unmada* (Autism Spectrum Disorder): A Pediatric Case Study

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Abstract

Background and Aim: Autism Spectrum Disorder(ASD) is a complex neurodevelopmental disorder marked by deficits in social interaction, restricted interests, and repetitive behaviors. Conventional therapies often provide limited long-term benefit in moderate to severe cases. This case study aimed to evaluate the role of Ayurvedic intervention in managing symptoms of moderate ASD in a pediatric patient. Methods: A 12-year-old female presented with delayed speech, echolalia, poor eye contact, repetitive behaviors, irritability, and academic difficulties. Clinical assessment suggested features resembling *Unmada* with *Vata-Kapha* dominance and *Manovaha Srotas* involvement. An individualized treatment protocol was administered over a period of 4 months (February – June 2025), including *Medhya Rasayana* for cognitive enhancement and Panchakarma therapies such as *Abhyanga*, *Nadi Sweda, Shirodhara*, *Shirotalam* for three sittings and *Basti* (administered in two sittings). The therapeutic goal was to pacify *Vata-Kapha Dosha*, nourish *Majja Dhatu*, and support *Buddhi*, *Smriti*, and *Samjna Jnana*. Observations and Results: Over the treatment course, gradual improvements were noted in social interaction, communication, attention span, and emotional regulation. Parents reported reduced irritability, better adaptability to routine, and improved peer engagement. Clinical observations confirmed stabilization of behavioral symptoms without any serious adverse effects. Conclusion: This case highlights the potential of Ayurveda in the holistic management of ASD through individualized protocols targeting doshic imbalance and neurocognitive function. While outcomes were encouraging, larger controlled studies and long-term follow-up are required to validate the effectiveness and establish standardized guidelines for Ayurvedic management of neurodevelopmental disorders.

Keywords: Autism Spectrum Disorder, Ayurveda, *Unmada*, *Medhya Rasayana, Vata Dosha*, Neurodevelopmental Disorder.

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Introduction

Autism Spectrum Disorders (ASD) refers to a set of neurodevelopmental conditions, distinguished by persistent issues with communication and social relationships. Individuals with ASD may also exhibit unique patterns of behavior and activities, for example, difficulty in shifting from one task to another, an intense focus on specific details, and atypical responses to sensory input.(1) These signs usually emerge within the first five years of life. Although they begin in early childhood, ASD typically continues into adolescence and adulthood. The incidence of ASD in India ranges from 0.15% to 1.01%. (2) Globally, 1 in 160 children has an autism spectrum disorder, and they are more commonly diagnosed in boys than girls. (3) People with ASD often have co-occurring conditions, including epilepsy, depression, anxiety, and attention deficit hyperactivity disorder (ADHD), as well as challenging behaviors such as difficulty in sleeping and self-injury. The intellectual abilities of individuals with autism can differ greatly, ranging from severe impairment to exceptionally high functioning. (3)

In Ayurveda, there is no direct correlation of Autism Spectrum Disorder (ASD), but it can be interpreted in Ayurvedic terms under the category of *Unmada* (4) with a closer resemblance to *Vata- Kaphaja Unmada,* characterised by *lakshanas* such as *Aspasta vak* (unclear speech), *Buddhi vibhrama* (impaired intellect), *Smrti vibhrama* (memory disturbances), *Ati pravrtta chesta* (abnormal or excessive movements), *Ekanta sevana* (isolation), *Swapna nasa* (disturbed sleep). These features reflect the predominance of *Vata and Kapha doshas*, affecting

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the *Manovaha Srotas* and resulting in disturbances in cognition, behavior, and communication. This correlation is based on the observation that many characteristic features of ASD, such as a tendency to remain in one place, preference for solitude, avoidance of social interactions, limited speech or communication, repetitive motor behaviors, frequent self-stimulatory actions, and repetitive speech patterns like echolalia, closely resemble the manifestations described in *Vata–Kaphaja Unmada*. (5) Currently, there is no standard treatment protocol or effective care for the prevention of ASD in conventional clinical practices, and management is largely supportive. Therefore, exploring the potential role of Ayurvedic interventions becomes relevant. The present case study will discuss a 12-year-old female patient with ASD and its management through Ayurvedic therapeutic interventions.

Case Report

A case of Autism Spectrum Disorder (ASD) was treated in a 12-year-old girl based on her initial clinical symptoms and their diagnostic evaluation through the *Unmada chikitsa* framework found in Ayurvedic literature. This case underscores that Ayurvedic treatment, when aligned with appropriate classical correlations and a systematic understanding of *Unmada* characteristics, can provide substantial advantages in managing conditions like ASD, where conventional treatments are primarily supportive.

Patient information

De-indentified patient data

A female aged 12 years, living in Vadodara, Gujarat, was brought to the Kaumarabhritya outpatient department of the Khemdas hospital in February 2025.

Patient concerns and symptoms

The patient presents with persistent behavioral concerns primarily involving difficulty in social interaction and poor concentration. She frequently exhibits repetitive speech patterns and engages in self-talking behavior. Caregivers report episodes of increased irritability and frequent anger outbursts. These symptoms have been ongoing and significantly interfere with her social and academic performance. The behavioral disturbances are noticeable in both home and social environments.

Clinical history and symptomology

A 12-year-old female who reported to the outpatient department of *Kaumarbhritya* in Khemdas hospital with a chief complaint of experiencing persistent difficulties in social communication and interaction since early childhood. Parents noticed limited eye contact, reduced response to social cues, and minimal interest in peer relationships from around the age of 2 years. Speech and language development were delayed; meaningful words began only after the age of 3 years. The patient frequently repeats words or phrases (echolalia) and often engages in self-talking. She shows restricted and repetitive behaviors, including hand-flapping, lining up objects, and insistence on routine. Any change in the daily schedule leads to significant distress and emotional outbursts. She has difficulty understanding emotions, abstract concepts, or non-verbal communication. The patient often isolates herself, avoids social gatherings, and becomes irritable when forced to engage. Academic performance is below average due to poor concentration and limited comprehension. Teachers report inattentiveness in class and difficulty following instructions. She also exhibits episodes of anger, especially when overstimulated or frustrated. There are occasional sensory sensitivities, especially to loud sounds and bright lights. With this background, the patient was brought to Khemdas Hospital for an Ayurvedic consultation and treatment.

Previous medical illness

The child was diagnosed with tuberculosis and pneumothorax at 6 months of age.

Family history

An aunt on the paternal side had similar complaints during childhood and adolescence, suggesting a possible genetic or familial component.

Birth history

The child was born full-term via Lower Segment Caesarean Section (LSCS) with a birth weight of 2.8 kg. The cry was immediate after birth, and there was no history of seizures, pathological jaundice, hypoglycaemia, meningitis, etc.

Developmental history

The child exhibited delayed developmental milestones across multiple domains. Neck holding was achieved at around 5 months of age, and sitting without support was attained by 10 months. Standing with support occurred at approximately 14 months, while independent walking began at around 20 months. Fine motor skills like pincer grasp developed late, by 15 months. Speech development was significantly delayed; the child started speaking meaningful words around the age of 3 years. Social and adaptive behaviors, such as responding to name, maintaining eye contact, and engaging in appropriate play, were noticeably deficient and continue to show impairment. Overall development has remained below average for age, with prominent delays in speech and social interaction.

Immunization history

The child has been fully immunized according to the national immunization schedule.

Personal history

- Diet: Vegetarian
- Sleep: Disturbed
- Appetite: Reduced
- Bowel movements: 1–2 times/day, satisfactory
- Micturition: 4–5 times/day and 1–2 times/night

Clinical findings

On general examination, the patient appeared visibly irritable, displaying repetitive behaviors and marked hyperactivity. She showed poor social communication, avoided direct eye contact, and was unable to fix her gaze on any specific object or person. The patient was conscious but disoriented to time, place, and person. She exhibited poor attention span and lack of concentration, although her memory functions appeared intact. Social interaction, communication skills, and speech-language development were delayed. Speech was unclear and lacked proper articulation on evaluation. Physical growth was appropriate for age. However, the patient had reduced appetite and disturbed sleep. Vital signs were within normal limits: pulse 84/min, RR 24/min, BP 114/72 mmHg, SpO_2 98%, and temperature 98.2°F. Anthropometric measurements included: height 150 cm, weight 39.4 kg, BMI 17.5 kg/m², head circumference 52 cm, chest circumference 68 cm, and mid-upper arm circumference 18 cm.

Ashtasthana pariksha

- *Naadi* (pulse): *Vata Pitta*
- *Mootra* (micturition): *prakruta*
- *Mala* (Defecation): *prakruta*
- *Jihwa* (tongue): *lipta*
- *Shabda* (Voice): *vikruta*
- *Sparsha* (touch): *ushna*
- *Drik* (vision): *prakruta*
- *Aakriti* (Body structure): *Madhyama*

Dashavidha Pariksha

- *Prakirti* (constitution): *pittapradhana vatanubandhi*
- *Vikriti* (Pathology): *vata and kapha*
- *Sara (*quality of tissue): *madhyama*
- *Samhanana* (structural integrity): *madhyama*
- *Pramana* (measurement): Height: 150 cm, Weight: 39.4 kg, BMI: 17.5 kg /m2
- *Satmya* (adaptability): *Sarvarasa satmya*
- *Satva* (mental status): *avara*
- *Aahara Sakthi* (digestive capacity): *madhyama*
- *Vyayama Sakthi* (exercise tolerance capacity): *madhyama*
- *Vaya* (stage of life): *baala*

Systemic Examiation

Respiratory system

- Inspection: Bilaterally symmetrical chest shape, no scar mark, or bulge.
- Palpation: Trachea centrally placed, no tenderness, chest expansion was symmetrical, normal on both sides and Vocal fremitus was diminished
- Percussion: Resonance present
- Auscultation: AEBE (Air entry bilaterally equal), no significant obstruction or abnormalities.

Cardiovascular system

- Inspection: No distended blood vessels, scars or deformities
- Palpation: apex beat felt
- Auscultation: S1, S2 heard no added murmurs

Gastrointestinal system

- Inspection: No distended blood vessels, scars, or deformities
- Palpation: no tenderness
- Percussion: dull
- Auscultation: bowel sound heard

Central Nervous System

Higher Mental Functions

- Consciousness: Patient is conscious but disoriented to time, place, and person.
- Orientation: Impaired.
- Attention & Concentration: Poor, easily distractible, unable to sustain focus.
- Memory: Appears intact for immediate and recent recall.
- Intelligence: Below average.
- Speech & Language: Delayed development, unclear articulation, echolalia present, repetitive self-talking.
- Social Interaction: Poor eye contact, limited response to social cues, minimal peer interaction.

Cranial Nerve examination

- No gross cranial nerve deficit detected. Visual tracking and hearing appear intact.

Motor System

- Normal bulk, tone, and power.
- No focal neurological deficit, no abnormal movements apart from stereotypies (hand-flapping, lining up objects).

Sensory System

- Intact to superficial and deep sensations; hypersensitivity to loud sounds and bright lights noted (sensory modulation issues).
- Reflexes: Superficial and deep tendon reflexes are Normal

Timelines

Table 1: Timeline of Symptoms, Intervention and Clinical Progress

Treatment Phase	Events	Key Findings / Interventions
Early childhood (2 years of age)	Onset of symptoms	Poor response to name, limited eye contact, and reduced social interaction.
Baseline	First hospital visit and admission	Baseline assessment performed using the Indian Scale for Assessment of Autism (ISAA) and Autism Parenting Stress Index (APSI).
1st Sitting (15 days)	Inpatient treatment	*Panchakarma* procedures along with oral *Medhya Rasayana* initiated.
Discharge after 1st Sitting	Clinical reassessment	ISAA and APSI reassessment performed; oral medications and lifestyle advice given.
2nd Sitting (21 days)	Readmission and treatment	Clinical reassessment performed using ISAA and APSI. *Panchakarma* procedures continued along with oral medications; caregivers reported reduced irritability and anger outbursts.
Discharge after 2nd Sitting	Clinical reassessment	ISAA and APSI reassessment performed; *Brahmi Vati* and *Kalyanaka Ghrita* added.
3rd Sitting (14 days)	Readmission and treatment	Clinical reassessment performed using ISAA and APSI. *Panchakarma* procedures continued with oral medications; improvement noted in speech and social responsiveness. *Saraswatarishta* added.
Discharge after 3rd Sitting	Final evaluation	Final assessment performed using ISAA and APSI; patient advised to continue oral medications and lifestyle measures.

Diagnostic assessment

Diagnostic Methods

Diagnosis was confirmed using the Indian Scale for Assessment of Autism (ISAA) (6), which serves as an objective assessment tool for individuals with autism. It employs observation, clinical behavior evaluation, testing through interaction with the subject, and information provided by parents or caregivers to diagnose autism. The ISAA comprises 40 items categorized into six domains, each rated on a 5-point scale from 1 to 5. An additional evaluation of the Autism Parenting Stress Index (APSI) was used to assess the stress level of the parent. (7)

In Ayurveda, diagnosis is established based on *nidana panchaka*. It provided a systematic approach to analyze *Nidana, purvaroopa, roopa, upashaya, anupshaya* and *samprapti*. By correlating the child's clinical presentation with *Ayurvedic* principles and diagnosis was established. (8)

Diagnostic challanges

Diagnosing Autism Spectrum Disorder (ASD) can be quite challenging due to the wide variability of its signs among children. Early indicators such as delayed speech, lack of eye contact, repetitive play, or hyperactivity might be confused with normal developmental variations, simple delays, or even ADHD. As there is no definitive blood test or imaging to confirm autism, the diagnosis depends on thorough history-taking, observation, and standardized assessment tools like the Indian Scale for Assessment of Autism (ISAA). Parents often find it difficult to articulate behaviors in detail, and societal stigma surrounding mental health can further postpone evaluations. This results in a process that is both time-consuming and emotionally taxing for families.

From an Ayurvedic point of view, the challenges are quite similar. The condition exhibits characteristics that overlap with *Unmada* and occasionally other *manas rogas*, complicating precise classification. Symptoms such as *aspashta vak* (unclear speech), *ekanta sevana* (isolation), *ati pravritta chesta* (repetitive movements), and *swapna nasa* (sleep disturbances) are observed in both *kaphaja* and *vata prakopa* conditions. (8) Differentiating these in a developing child, where natural growth is still in progress, necessitates repeated evaluations using *nidana panchaka* and *samprapti ghataka*. Therefore, in both contemporary and Ayurvedic practices, diagnosis requires patience, ongoing observation, and sensitive communication with parents.

Diagnosis

According to the clinical history, the patient exhibits ongoing challenges in social communication and interaction, along with delayed speech and language development, echolalia, restricted and repetitive behaviors, a strong preference for routine, and sensory sensitivities. These characteristics align with a diagnosis of Autism Spectrum Disorder (ASD) at a moderate severity level, impacting both social and academic performance.

As per Ayurveda, ASD is considered an *anuktavyadhi* (a condition not directly described in the Ayurvedic texts). However, the clinical presentation of the patient closely resembles features of *Vatakaphaja Unmada*, as described by *Acharya Charaka* and *Sushruta*. Out of the classical *rupas* of *unmada*, the patient presented with several overlapping features, such as *Ekantsevi* (preference for isolation), *Ashpashta vak* (unclear speech), *vikrut chesta* (echolalia), *krodha* (anger issues), *swapnanasha* (disturbed sleep), and *smrti vibhrama* (memory disturbances). She also exhibited *purvarupa* like *Avakpravrutti* (Delayed speech), *Vikrit chesta* (echolalia), and *Anavasthita mana* (poor concentration). (8) The following table presents a comparative view of features of *Unmada* (with *vata–kapha* predominance), correlating diagnostic aspects of ASD, and the patient's clinical manifestations (Table 2).

Table 2: Comparison of features of *Unmada*, Autism Spectrum Disorder, and Patient's Complaints

Sr. No.	Features of *Unmada* (*Vatakaphaja*)	Diagnostic Features of ASD	Complaints of the Patient
1	*Aspasta vak* (unclear speech)	Delayed speech, echolalia	Delayed speech, repeats words (echolalia)
2	*Buddhi vibhrama* (impaired intellect)	Poor comprehension, difficulty following instructions	Below average academics, poor concentration
3	*Smri vibhrama* (memory disturbances)	Difficulty recalling/using learned skills	Forgetfulness, poor memory power
4	*Ati pravrtta chesta* (abnormal or excessive movements)	Repetitive behaviors (hand flapping, lining objects)	Frequent hand flapping, repetitive play
5	*Ekanta sevana* (isolation)	Poor social interaction	Limited eye contact, less communication
6	*Swapna nasa* (disturbed sleep)	Sleep problems	Difficulty sleeping and restlessness
7	Improper *ahara-vihara*	Aggravates the ASD symptoms, improper regimens worsen with stress and diet triggers	Symptoms aggravated by overstimulation (loud sounds, lights)
8	*Manasa dosa prakopa*	Neurodevelopmental imbalance	Emotional outbursts, irritability

Analysis of symptoms (*Samprapti-lakshana sambandha*)(8)

The child presented with delayed and unclear speech (*avak pravrtti*, *aspasta vak*), which can be understood as the effect of aggravated *vata dosa* obstructing *praṇavaha srotas* and impairing speech initiation. This corresponds with the Ayurvedic view that *vata* governs communication and articulation, and its vitiation leads to incoherent or absent speech. Poor social interaction and a preference for *ekantasevana* (isolation) reflect *kapha dosha prakopa*, leading to *manda gati* (slowness) and *asakti* (lack of social attachment). The obstruction in *manovaha srotas* hampers *dhi, dhrti*, and *smriti*, resulting in reduced reciprocity and inability to engage with peers.

Repetitive behaviors (*vikrta ceshṭa*) and echolalia are outcomes of *vata prakopa* producing excessive, purposeless activity (*ati pravrtta chesta*). These are signs of disturbed neural coordination and are explained in Ayurveda as *manovaha srotodushti* with

sanga and *vimargagamana*. The child also displayed anger outbursts (*krodha*), which are manifestations of aggravated *vata* affecting manas and impairing *dhriti*. Classical texts describe irritability and emotional instability as features of *unmada*.

Sleep disturbance (*swapna nasha*) was another major complaint. In Ayurveda, *vata* vitiation and obstruction in *manovaha srotas* disturb normal *nidra*, resulting in insomnia or irregular sleep. constipation (*vibandha*) was observed, which Ayurveda links with *vata prakopa* and *agnimandya*. This shows the connection between gut health and mental health, as amadosha aggravates behavioral and cognitive symptoms.

Thus, the symptoms can be directly linked to *vata–kapha dosha prakopa* obstructing the *manovaha srotas*. This leads to impairment of *dhi, dhrti*, and *smrti*, manifesting as features of *kaphavataja unmada*, which resembles Autism Spectrum Disorder.

Prognosis

The condition can be considered *Vatakaphaja unmada*, which is usually *Yapya* (unable to treat but manageable with continuous therapy). (8) Due to chronicity and involvement of *manovaha srotas*, complete recovery is less expected. With proper *medhya rasayana*, *sattvavajaya chikitsa*, and supportive therapies, the prognosis can be improved towards better functional adaptation.

Therapeutic intervention

Typ of therapeutic intervention

A comprehensive *Shamana* and *Shodhana* plan of care was designed with emphasis on balancing aggravated *vata* and *kapha dosa*, nourishing the *manas* and restoring *dhi, dhriti* and *smriti*. External therapies were selected for their *snigdha, balya* and *prasadana* properties to promote relaxation, improve sleep, and reduce hyperactivity, while supportive procedures addressed *srotoshodhana* and *manovaha srotas* stabilization. Internal medications with *rasayana* and *medhya* attributes were incorporated to enhance cognitive functions, regulate emotional responses, and sustain long-term behavioral improvement.

Comprehensive therapeutic approach

External Therapies

During the three treatment sittings, the patient underwent the following Panchakarma procedures:

- *Sarvanga Abhyanga* with *Ksheerabala Taila* was administered daily for 15 days during the first and third sittings and for 21 days during the second sitting.
- *Nadi Sweda* using *Dashamoola Kashaya* was performed following Abhyanga for the same duration.
- *Shirodhara* with *Dashamoola Kashaya* was administered for 15 days during the first and third sittings and for 21 days during the second sitting.
- *Shirotalam* was applied using a combination of *Amalaki, Brahmi, Shankhapushpi,* and *Yashtimadhu Churna* mixed with *Ksheerabala Taila* for the same duration.
- *Matrabasti* was administered using *Kalyanaka Ghrita* (20 ml) for 15 days during the first sitting and 21 days during the second sitting. During the third sitting, *Ksheerabala Taila* (20 ml) was used for *Matrabasti* for 15 days.
- *Asyapratisarana* with *Vacha Churna* mixed with honey was performed for 15 days during the first and third sittings and for 21 days during the second sitting.

Internal Medications

The following oral medications were prescribed during the treatment period:

- *Samsamani Vati – 1 tablet twice daily with warm water after food for 3 months.*
- *Shankhapushpi Churna – 2 pinches twice daily with honey after food for 3 months.*
- *Brahmi Vati – 1 tablet twice daily with warm water after food for 2 months.*
- *Kalyanaka Ghrita – 1 teaspoon once daily with warm water before food in the morning for 1 month.*
- *Saraswatarishta – 10 ml twice daily with an equal quantity of water after food for 1 month.*

Changes in therapeutic intervention

Initially, the external treatment regimen comprised *Sarvanga Abhyanga* using *Kshirabala taila*, followed by *Nadi Sweda*, and *Shirodhara* with *Dashamula kashaya*. Additionally, *Shirotalam* was administered with a blend of *Amalaki, Brahmi, Shankhapuspi, Yastimadhu churṇa*, and *Kshirabala taila*. *Matrabasti* with *Kalyanaka ghrita* (20 ml), and *Asyapratisaraṇa* included *Vacha churṇa* mixed with honey. The internal medication consisted of *Samsamani vaṭi* and *Shankhpushpi churṇa*. During subsequent follow-ups on the 21st day of the 2nd sitting, *Brahmi vaṭi* was incorporated for its nootropic effects and stabilizing properties for *manovaha srotas,* while *Kalyanaka ghrita* was also introduced orally (1 tsp with warm water in the morning) to improve cognitive functions and mitigate *vatika* imbalance. Eventually, from the 1st day of the 3rd sitting, *Matrabasti* was adjusted to utilize *Kshirabala taila* instead of *Kalyanaka ghrita* for enhanced tolerability and localized effects on *vata sthana*. Ultimately, *Sarswatarishta* was included to improve speech, memory, and behavior, complementing the *medhya rasayana* formulations. These modifications were implemented sequentially, guided by the patient's responses, evolving needs, and the principle of *yukti-vyapashraya chikitsa*, ensuring a balance of *doshas*, nourishment of *dhatus*, and support for cognitive and behavioral functions.

Follow up and outcome

The results of intervention were recorded using the Indian Scale for Assessment of Autism (ISAA) and Autism Parenting Stress Index (APSI) as mentioned in Tables 3 & 4.

Table 3: Indian Scale for Assessment of Autism (ISAA)

Domain	Max Score	Baseline	1st Sitting (Day 15)	2nd Sitting (Day 1)	2nd Sitting (Day 21)	3rd Sitting (Day 1)	3rd Sitting (Day 14)
I. Social Relationship & Reciprocity (1-9)	45	34	32	31	29	27	27

II. Emotional responsiveness (10-14)	25	15	14	14	13	12	12
III. Speech-Language & Communication (15-23)	45	32	30	29	27	25	24
IV. Behavior Patterns (24-30)	35	25	23	23	21	20	19
V. Sensory Aspects (31-36)	30	19	18	18	16	15	15
VI. Cognitive Component (37-40)	20	15	14	14	13	13	13
TOTAL SCORE	200	140	131	129	119	112	110

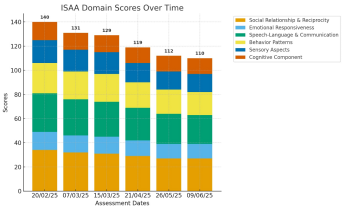
Table 4: Autism Parenting Stress Index (APSI)

Sr No	Checklist	Baseline	1st Sitting (Day 15)	2nd Sitting (Day 1)	2nd Sitting (Day 21)	3rd Sitting (Day 1)	3rd Sitting (Day 14)
1	Your child's social development	2	2	2	1	1	1
2	Your child's ability to communicate	3	3	3	2	2	2
3	Tantrums/meltdowns	3	3	2	2	2	2
4	Aggressive behavior (siblings and peers)	3	3	2	3	2	2
5	Self-injurious behavior	1	1	1	0	0	0
6	Difficulty making transitions from one	2	2	2	1	1	1
7	Sleep problems	3	3	3	2	2	2
8	Your child's diet	0	0	0	0	0	0
9	Bowel problems (diarrhoea and	0	0	0	0	0	0
10	Potty training	0	0	0	0	0	0
11	Not feeling close to your child	0	0	0	0	0	0
12	Concern for the future of your child being accepted by others	3	3	3	2	2	1
13	Concern for the future of your child living	3	3	3	3	2	2
	TOTAL SCORE	23	23	21	16	14	13

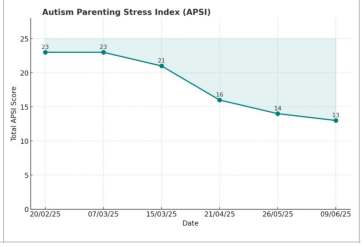
Follow up results

The patient was monitored over a treatment period, with regular assessments conducted using the Indian Scale for Assessment of Autism (ISAA) and the Autism Parenting Stress Index (APSI). By the end of the first phase of therapy, notable improvements were observed in reduced irritability and fewer episodes of anger outbursts, and social reciprocity. The ISAA total score reduced from 140 at baseline to 110 after treatment, reflecting an overall improvement of approximately 21% in autism severity, as shown in graph 1, with notable gains in social reciprocity, behavior patterns, and sensory aspects. Parallelly, the APSI score declined from 23 to 13, indicating a 43% reduction in parental stress, as shown in graph 2. These improvements, as reflected in the graphical trends, highlight the effectiveness of the Ayurvedic interventions in enhancing both child functioning and caregiver well-being.

Graph 1: Trends of symptomatic improvement based on ISAA scores over the intervention period



Graph 2: Trends of parental stress reduction over the intervention period assessed by APSI



Intervention adherence and tolerability

The prescription plan was thoroughly reviewed with the patient's caregivers, and their views on feasibility, convenience, and anticipated adherence were given careful consideration. The recommended interventions were maintained with consistent follow-ups, which ensured compliance with the treatment plan and facilitated monitoring of tolerance.

Adverse and unanticipated events

On 26-03-2025, the patient reported mild abdominal discomfort and occasional constipation. In addition to the ongoing medications, *Avipatikara Churna* (1 g with warm water at bedtime, as required) was prescribed for *vibandha* relief. *Avipatikara Churna* is classically indicated in *Koshta vikara*, particularly in cases of constipation due to *vata* imbalance, and is widely used to promote mild laxation safely. On 07-04-2025, mild cough and throat irritation were noted, likely related to seasonal changes. *Sitopaladi Churna* (1 g with honey, BD) was added to manage cold and throat irritation. No serious adverse effects were observed, and all events were mild and manageable, allowing continuation of the treatment plan.

Discussion

Strengths and Limitations

This case report highlights a comprehensive Ayurvedic approach to managing ASD, combining classical diagnostic correlations with structured interventions and regular monitoring. It demonstrates measurable improvements in both the child's behavioral symptoms and parental stress, supported by objective scales like ISAA and APSI. A strength lies in the detailed

documentation of therapy adherence, tolerability, and mild adverse events. However, as a single-case observation, the findings cannot be generalized to a larger population. Additionally, the long-term sustainability of the observed benefits requires further follow-up to confirm lasting effects.

Discussion on relevant medical literature

The treatment protocol was designed to perform *Samprapti Vighatana*, aiming to pacify *Vata Dosha*, strengthen *Majja* and *Manovaha Srotas*, and restore *Buddhi, Smriti*, and *Samjna Jnana*.

The combined use of *Shodhana* and *Shamana* therapies, along with *Medhya Rasayana* drugs, was intended to address both the neurological and behavioral manifestations observed in ASD.

External therapies, including *Sarvanga Abhyanga, Nadi Sweda,* and *Shirodhara* (Figure 1) were selected due to their *Vata-pacifying* and calming effects on the nervous system. *Ksheerabala Taila*, known for its *Snigdha*, *Sheeta*, and *Vataghna* properties, is widely indicated in neurological disorders and helps nourish *Majja Dhatu*, stabilize neuronal functions, and reduce hyperactivity, which is often impaired in individuals with autism. (9,10) Similarly, *Dashamoola Kashaya* possesses *Vatahara* and *Srotoshodhana* properties that help regulate abnormal neurological activity and improve sleep patterns. Clinical studies have reported reductions in stress markers and improvements in sleep following Shirodhara therapy, suggesting its potential role in regulating neuroendocrine responses. (18,19)

Shirotalam, using a combination of *Amalaki, Brahmi, Shankhapushpi,* and *Yashtimadhu Churna* mixed with *Ksheerabala Taila*, was administered to enhance cognitive stability and behavioral calmness (Figures 2 & 3). *Brahmi* and *Shankhapushpi* are well-recognized *Medhya Rasayana* drugs known to enhance neurotransmission, improve attention, and support memory functions. (20) Experimental and clinical studies have demonstrated their antioxidant, anxiolytic, and neuroprotective effects, which may contribute to improved cognitive and behavioral outcomes in neurodevelopmental disorders. (21)

Basti therapy was incorporated considering its classical indication in *Unmada* and other *Vata-dominant disorders*. According to *Charaka Samhita*, *Snehabasti* is regarded as one of the most effective therapies for disorders involving aggravated *Vata Dosha*. (12) In this case, *Kalyanaka Ghrita* was initially used for *Matrabasti* due to its *Medhya* and *Rasayana* properties. It helps pacify *Vata* and *Kapha Doshas*, nourish *Sattva Guna*, and support cognitive functions. Basti therapy also influences gut-brain interactions by modulating intestinal physiology and neuroimmune responses. Recent studies suggest that such interventions may influence gut microbiota and neuroendocrine pathways, which are increasingly implicated in ASD pathophysiology. (22) Subsequently, *Ksheerabala Taila* was used for *Matrabasti* due to its *Vatashamaka*, *Balya*, and *Brihana* properties. (18) This modification followed the principle of *Shamana* followed by *Brihana*, where initial correction of *Dosha imbalance* is followed by strengthening and nourishment of the nervous system. The use of *Vacha Churna* with honey for *Asyapratisarana* was selected due to its *Medhya*, *Lekhana*, and *Vata-Kapha Shamaka* properties described in classical texts such as *Arogyaraksha Kalpadruma*. (13) Vacha is traditionally indicated in speech disorders and cognitive impairment, and modern studies also highlight its neuromodulatory effects. (23)

Internal medications primarily consisted of *Medhya Rasayana* drugs, which play a crucial role in enhancing cognitive functions. *Samsamani Vati* (Guduchi-based formulation) was administered for its *Rasayana*, immunomodulatory, and neuroprotective properties. Experimental studies suggest that *Tinospora cordifolia* improves cognitive performance and reduces stress-related behavioral changes in animal models. (14,24) *Shankhapushpi Churna* was administered to enhance *Dhi, Dhriti,* and *Smriti*. Contemporary research demonstrates that *Shankhapushpi* possesses antioxidant and anxiolytic properties that may improve attention, memory, and emotional regulation. (15,25) Later, *Brahmi Vati* and *Kalyanaka Ghrita* were introduced orally to further enhance cognitive stability and learning ability. (15) *Brahmi* has been widely studied for its memory-enhancing properties, and randomized controlled trials have reported improvements in attention and cognitive processing. (26) *Kalyanaka Ghrita*, indicated in *Unmada* and other *Manasika Rogas*, acts as an effective *Yogavahi*, facilitating the delivery of *Medhya drugs* to the central nervous system. (11) Clinical studies have demonstrated improvements in memory and mental functions following its use in children with cognitive impairment. (27) Finally, *Saraswatarishta* was added as a classical *Medhya formulation* indicated in conditions involving *Vak Vikriti* and *Unmada*. (17) It possesses *Vak-Medha-Smriti Prasadana* properties and helps stabilize cognitive and behavioral functions by pacifying *Vata* and *Kapha Doshas*. Experimental studies have also demonstrated its neuroprotective potential in animal models, supporting its use in neurocognitive disorders. (28)

Overall, the sequential combination of Panchakarma therapies and Medhya Rasayana formulations aimed to restore *doshic* balance, strengthen *Manovaha Srotas*, and support cognitive and behavioral improvement. The progressive reduction in ISAA scores and APSI scores observed in this case suggests the potential role of Ayurvedic interventions in improving behavioral symptoms and reducing caregiver stress in ASD.

Figure 1: **Shirodhara**	**Figure 2**: **Shirotalam**	**Figure 3 : Shirotalam**
		

Conclusion

The present case highlights the effectiveness of Ayurvedic intervention in managing the symptoms of moderate autism in a 12-year-old female patient. Through a holistic assessment based on Ayurvedic principles, primarily identifying *Vata* dominance and *Manovaha Srotas* involvement, a personalized treatment protocol was adopted. The administration of *Medhya Rasayana,* along with *Panchakarma* procedures and supportive therapies, resulted in significant improvements in behavioral issues, emotional balance, attention span, and social engagement, without any serious adverse effects. This case supports the potential of Ayurvedic approaches in improving the quality of life for individuals with autism spectrum disorder and emphasizes the relevance of individualized treatment planning rooted in classical

principles. This individual case shows promising results with Ayurvedic treatment, but more extensive clinical trials utilizing standardized diagnostic methods and objective outcome assessments are necessary to confirm these results. Comparative research between Ayurvedic protocols and conventional therapies, as well as integrative approaches, may help establish evidence-based guidelines. Additionally, Long-term follow-up studies are also essential to assess the sustainability of therapeutic benefits and to explore the broader role of Ayurveda in neurodevelopmental disorders.

Patient perspective

The parents revealed that before treatment, their child exhibited poor eye contact, frequent hyperactive behavior, disrupted sleep, and limited communication, which led to significant stress and worries about her future. Following the commencement of *Ayurvedic panchakarma* therapy and internal medications, they noticed gradual improvements. The child began to demonstrate better eye contact, decreased hyperactivity, and enhanced sleep patterns. They also mentioned feeling less burdened and more hopeful as the stress related to caregiving decreased. The parents conveyed their satisfaction with the treatment method, highlighting its safety, holistic nature, and child-friendly approach. They noted that *Ayurveda* management not only alleviated the symptoms but also enhanced the overall quality of life for both the child and the family.

Informed consent

Informed consent was obtained from the parents for documentation and publication of the case. The patient's identity has been kept confidential, and the family was assured that all information would be used solely for educational and research purposes.

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