



CASE REPORT

Ayurvedic Management of Autism Spectrum Disorder in a Child: A Clinical Case Report

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ARTICLE HISTORY

Received: 22 May 2025

Accepted: 16 July 2025

Available online

Version 1.0 : 30 September 2025

Keywords

Autism spectrum disorders, *Unmada*, Ayurvedic management, *Panchakarma* treatment, *Karma vasti*

Additional information

Peer review: Publisher thanks Sectional Editor and the other anonymous reviewers for their contribution to the peer review of this work.

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CITE THIS ARTICLE

Sheeja S, Arathi G, Sadath DR, Shaju MK, Seena S. Ayurvedic Management of Autism Spectrum Disorder in a Child: A Clinical Case Report. Kerala Journal of Ayurveda. 2025;4(3):01-06. <https://doi.org/10.55718/kja.417>



Abstract

Autism Spectrum Disorder (ASD) is a multifaceted neurodevelopmental disease that affects social communication, behaviour, and cognitive development in children. ASD frequently endures throughout one's lifetime, and impacts individual from all racial, ethnic, and social demographics. Recent studies indicate an increasing prevalence, with approximately 1 in 68 children in India being diagnosed. Boys are more commonly affected than girls, with a male-to-female ratio of 3:1.

ASD impedes an individual's capacity for communication and interaction, resulting in difficulties in schooling, social development, and autonomous living. This creates difficulties not only for individuals with ASD but also for their families, healthcare providers, and educators.

Ayurveda correlates autism and related developmental disorders under *Unmāda*, a condition characterized by impairment of one or more mental faculties. In Ayurveda, *Unmāda* is primarily linked to imbalances in the nervous system, which corresponds closely with disturbances in the *Vata dosha*. *Vata* governs the nervous system and controls movement and communication in the body and mind. When *Vata* becomes aggravated, it can lead to mental disturbances such as *Unmāda*.¹ *Panchakarma* therapies, especially *Vasti karma*, play a significant role in managing these imbalances. *Vasti* helps balance *Vata* and enhances neurological function. When used alongside other Ayurvedic interventions, *Vasti* therapy has shown potential in reducing symptoms such as hyperactivity, attention deficits, speech delays, and irritability in children with autism.

This is a case report of a 4-year-old child with ASD who was treated using various Panchakarma procedures and supportive therapies. The child was assessed before and after the treatment using the Childhood Autism Rating Scale (CARS), and significant improvements were observed across all domains.

This case highlights the potential of Ayurvedic *Panchakarma* therapies in managing ASD symptoms and improving overall functioning in affected children.

Introduction

Pervasive developmental disorders (PDD) represent a heterogeneous category of neurodevelopmental disorders characterized by deficits in reciprocal social interaction, communication, and behavior, alongside a restricted range of stereotyped interests and activities.

Leo Kanner originally identified "childhood autism" as the prototype condition for PDD in 1943. The skills, Intelligence Quotient, and behaviors of children with PDD vary greatly. Some people's language development is comparatively normal. In general, repetitive play patterns and poor social abilities are seen. Unusual reactions to stimuli like lights and loud noises are also frequent.²

Although symptoms usually appear between the ages of 1.6 and 3, parents may notice them as early as infancy. Problems with language use and comprehension, trouble adjusting to unfamiliar or normal situations, poor eye contact, aloofness, a lack of social awareness, and repetitive physical actions or behavioral patterns are some of the symptoms. The signs usually develop gradually, but some autistic children first develop normally and then regress. Monozygotic twins have 90% concordance rates and dizygotic twins 30%.³ The diagnostic triad is 1) impaired socialization, 2) impaired communication and 3) stereotypic behaviour.

Identifiable causes for autism are very few; however, it is worth looking for them. Phenyl ketonuria, hypothyroidism, tuberous sclerosis, fragile X syndrome, chromosomal anomalies, etc, are some of the identifiable causes. Intrauterine infections and antenatal drugs like anticonvulsants may play a role. In contrast to usual belief, perinatal complications are not an important cause of autism.⁴

Autism is not a progressive neurological disorder, and with appropriate interventions, improvements can be seen across various areas over time. Children who begin with relatively good speech, language, and cognitive skills tend to show better outcomes. Many individuals with autism go on to lead independent lives and find meaningful employment. However, about 25% of cases are of the regressive type, where children lose previously acquired skills.

In Ayurveda, the psychosocial abnormalities observed in Autism Spectrum Disorder (ASD) show a strong resemblance to the condition known as *Unmāda*. The cardinal clinical features of *Unmāda* include *Dhī-vibhrama*,

Sattva-pariplava, *Paryākula dṛiṣṭi*, *Adhīratā*, *Abaddha-vākyatā* and *Hṛidaya-śūnyatā*. These symptoms show significant similarities with those observed in autism spectrum disorder.⁵

Defective or unusual speech indicates the affliction of *Udāna Vāyu*, and most behavioral characteristics of children with autism reflect a vitiation of *Vāta dosha*. Ayurveda views *Agni* not merely as the fire responsible for digestion, but also as a subtle energy that processes sensory inputs, emotions, and experiences, helping to integrate them into clear perception and balanced emotional responses.⁶

Treatment modalities can be applied based on the observed behavior of the child—whether hyperactive or depressive in nature. In hyperactive presentations, - *Vāta anubandha Pitta cikitsā* should be adopted, whereas in depressive types, *Vāta-anubandha Kapha cikitsā* is more appropriate. Simultaneously, therapies aimed at enhancing *Medha* should be administered⁷.

Patient Information

A moderately built 4-year-old male child was brought to the OPD with presenting complaints of inability to effectively communicate his needs, reduced social interaction, fearful reaction to toys with light and sound, lack of sustained eye contact, did not respond to verbal instructions, poor listening skills, lack of engagement with verbal communication and sleeplessness. The child exhibited reduced adaptability to unfamiliar places and people.

According to information provided by the mother, the patient is the first child of a non-consanguineous marriage, delivered via normal vaginal delivery. Although the mother had a membrane rupture, labor and delivery took place the next day. The baby cried immediately after birth and exhibited normal developmental milestones up to 1.5 years of age. The mother reported that all developmental milestones, other than speech, were attained appropriately until 18 months. However, the mother began noticing challenges in social interaction and weak communication skills. Speech therapy was started at the age of 2 and continued, but no improvement was observed.

The child was reluctant to interact with others and became distressed when exposed to unfamiliar environments or people, often crying loudly in such situations. It was challenging for the family to take him to social functions or host guests at home due to his heightened sensitivity and distress. He did not respond when his name was called and avoided eye contact. He does not verbally ask for the things he wants; instead, he points to them with his fingers. Additionally, he was unable to sit still in one place and

exhibited constant movement, frequently running or roaming around. The child exhibited stereotyped, repetitive hand movements. However, these behaviors were subtle and not prominently noticed by others. At 3.5 years, they consulted pediatrician, who attributed the condition to excessive mobile phone use. Subsequently, they visited our OPD, where he was admitted for comprehensive management.

Examination of the patient

No significant abnormalities were detected on systemic examination.

No abnormalities were detected in Electroencephalogram (EEG)

Dasavidha Pareeksha

Dooshya:Vata-Pitta

Desam: Anupa

Balam:Rogi-Pravara,Roga-Madhyama

Kalam: Greeshma

Anala:Madhyama

Prakrthi: Vata- Pitta

Vaya:Baala

Satwa: Madhyama

Aahara: Jarana sakthi-Madhyama, Abhyavaharana sakthi-Madhyama

Avastha: Navam

Differential Diagnosis-

1. Speech and Language Disorders

In expressive or receptive language disorders, delays are primarily observed in language development, either in expression, comprehension, or both. However, social interaction is typically preserved, apart from challenges related to communication. In the present case, social interaction is significantly affected, which is not characteristic of isolated language disorders. Therefore, expressive/receptive language delay is ruled out as the primary diagnosis.

2.Global Developmental Delay (GDD)

In Global Developmental Delay (GDD), delays are observed across multiple developmental domains, including speech, motor, cognitive, and social functioning. However, unlike Autism Spectrum Disorder (ASD), children with GDD are often socially responsive, showing interest in people and engaging in social interactions, even if delayed. In the present case, the child demonstrates significant deficits in social reciprocity and communication, which are more characteristic of ASD. Therefore, GDD is less likely as the primary diagnosis.

Diagnostic Assessment-

The child demonstrated the core diagnostic features of Autism Spectrum Disorder. The diagnostic triad of ASD- impairments in social interaction, communication, and restricted, repetitive behaviors-was clearly present.

The clinical presentation aligned with characteristics of both *Vata* and *Pitta Unmada*, leading to a diagnosis of *Vata-Pitta Unmada* as per Ayurvedic principles.

The patient was assessed using the Childhood Autism Rating Scale (CARS) prior to treatment initiation, yielding a score of 36, indicative of moderate autism.

Therapeutic Intervention

The line of treatment included *Vata-Pitta hara Chikitsa* along with *Deepana-Pachana*, *Snehana-Swedana*, *Srotoshodhana*, *Brimhana*, *Medhya*, and *Rasayana* therapies

Total duration of the treatment was 2 months.

Internal medicines

Medicines	Dosage
1.Drakshadi kashaya-	40ml bd before food
2. Agni kumara rasa	1-0-0 after food
3.Avipathi churnam	1/2tsp +1/4 teaspoon bd
4. Brahma Rasayana	1teaspoon at bed time,1 hour after food
5. Thikthaka ghrita	1/2 teaspoon with honey bd before food
6. Hinguvachadi churnam	1/2 teaspoonp with hot water at 11am

Procedure done

Sl.No	Procedure	Medicine	Duration
1	<i>Snehapanam-Sodhanartha</i>	<i>Thikthaka ghrita</i> (30 ml,50 ml,70 ml, 90ml,100ml,100ml, 100ml)	7 days
2	<i>Siropichu</i>	<i>Thungadrumadi taila</i> starting with 10mts - 1 hr	10 days
3	<i>Abhyanga and Ushmasweda</i>	<i>Satahwadi taila</i>	3 days
4	<i>Mridu sodhana</i>	<i>Avipathi churnam</i> 7 gm with honey	1 day
5	<i>Takradhara-whole body</i>	<i>Takra</i> prepared by <i>Kalyanaka Kashaya</i> medicines	7days
6	External application on nose	<i>Sarshapa taila</i>	30 days
7	<i>Matravasti</i>	<i>Thikthaka ghrita</i> and <i>Madhuyashtyadi taila</i> 15 ml each <i>Bala padoladi Niruhavasti</i> ⁸	3 days
8	<i>Karma vasti</i>	<i>Thikthaka ghrita</i> and <i>Madhuyashtyadi taila</i> 15 ml each as <i>Sneha vasti</i>	30 days

Balapadoladi Niruha Vasti Medicines-

Medicines	Quantity
1.Balapadoladi Kwatha	90 ml
2.Madhuyashtyadi taila	60 ml
3.Honey	30 ml
4.Goat Meat soup	15 ml
5.Kalka	7 gm
6.Rock salt	3 gm

Medicines for Balapadoladi kwatha-

Medicines	Scientific Name
Bala	Sida cordifolia
Padola	Tricosanthus dioica
Saliparni	Desmodium gangeticum
Prisni parni	Uraria picta
Brihati	Solanum indicum
Kantakari	Solanum surrantace
Gokshura	Tribulus terrestris
Trayanti	Gentiana kurroo
Eranda	Ricinus communis
Yava	Hordeum vulgare

Preperation of *Kashaya*-For one day's *Kashaya* preparation, add 3 grams of each ingredient to 500 ml of water, boil it, and reduce the volume to 250 ml.

Medicine for Kalka-

Medicine	Scientific Name
Priyangu	Callicarpa macrophylla
Pippali	Piper longum
Musthaka	Cyperus rotendus

Childhood Autism Rating Scale (CARS) score -Before and after treatment

SI No	CARS Domain	Before Treatment	After Treatment
1	Relating to people	3	3
2	Imitative behaviour	4	4
3	Emotional response	2	1
4	Body use	2	1
5	Object use	2	1
6	Adaptation to change	3	1
7	Visual response	2	1
8	Listening response	3	2
9	Taste, smell, and touch response and use	1	1
10	Fear or nervousness	2	1
11	Verbal communication	4	3
12	Nonverbal communication	2	1
13	Activity level	2	1
14	Level and consistency of intellectual response	2	1
15	General impressions	2	1
	Total CARS score	36	23

Severity of ASD

Non- ASD-Below 30

Mild-Moderate-30-36.5

Severe-37-60

Observed Differences in CARS Score Domains Before and After Treatment

After completing the treatment, notable improvements were observed in all most all domains assessed using the Childhood Autism Rating Scale (CARS). In the emotional response domain, the child initially displayed exaggerated reactions and inappropriate emotional expressions, particularly showing fear toward stimuli such as lightning and sound-producing toys, which he often threw away. Following treatment, he began to interact calmly with these same toys, indicating improved emotional regulation. Similarly, in the adaptation to change domain, the child had previously shown significant distress in unfamiliar environments and around new people. Post-treatment, he demonstrated increased adaptability by approaching other patients' beds and behaved more comfortably with unfamiliar individuals, suggesting reduced fear and improved coping. In terms of listening response, the child began responding to his name, reflecting better auditory attention and early signs of social engagement. Verbal communication showed limited progress-he began using short sentences, though expressive language remained underdeveloped. In the activity level domain, the child had exhibited constant movement and hyperactivity before treatment. After intervention, a clear reduction in restlessness was observed, pointing to better regulation of motor behavior. Under the domain of intellectual response, he initially struggled with simple instructions, such as identifying and selecting a glass among other utensils. After treatment, he successfully followed such tasks, indicating improved comprehension and cognitive consistency. The general impression score, derived from direct observation and clinical judgment, reflected overall progress in behavioral functioning.

However, certain domains showed no significant improvement. These included the ability to form interpersonal relationships, imitate others' actions, speech, or expressions, and manage sensory sensitivities. These areas remain key targets for continued therapeutic intervention and support.

Follow-up and outcomes-

Significant improvement was observed following the completion of *Karma Vasti*. The child's fear of toys with light and sound reduced noticeably, and he began engaging in play with them. An improvement in eye contact was also evident. After the administration of *Shiro Pichu*, his sleep duration

increased significantly. He started listening to and responding to verbal instructions, and showed better adaptability to unfamiliar places and people. Overall, these changes were reflected in the Childhood Autism Rating Scale (CARS) score, which improved from 36 to 23-falling within the normal range.

In the monthly follow up visits, it was observed that the improvements he had gained were continuing.

Discussion

Samana Treatment:

The treatment was initially started with *Drakshadi Kashaya*, *Agni Kumara Rasa*, and *Avipathi Churna* for a period of three weeks. Following a marked improvement in *Agni*, the second phase included the administration of *Ghrita* and *Rasayana* formulations, along with *Hinguvachadi Churna*.

Agnikumara rasa, given with ginger juice, was administered to correct *agnivaishamya*. As *samaana vayu* plays a crucial role in balancing and coordinating digestive processes by supporting *Agni*, this formulation-with its *deepana* and *pachana* properties-helped restore the balance of *samaana vayu* and *agni*.

Drakshadi kashaya, known for its *Pitta-Vata samana* action and its effectiveness in managing psychological symptoms such as *manovibhrama*, was also included. *Avipathi churna*, administered with honey, was used for its *pitta samana* properties as part of the *samana* approach. The child initially experienced constipation, which was effectively relieved after the initiation of *Drakshadi kashaya* and *Avipathi churna*.

Hinguvachadi churna, administered with hot water, was used to enhance *agnibala*. In the second phase of treatment, *Tiktaka ghrita* with honey was introduced as *samana snehapana*, due to its *pitta*-pacifying nature and specific indications in conditions like *bhrama* and *unmada*.

The administration of *Brahma rasayana* yielded significant results, attributed to its multifaceted therapeutic actions, including *tridosha samana*, *Vatanulomana*, *Ojovardhana*, *Medha-Smrutikara*, and *Jeevana* properties.

Śodhana Treatment:

Śodhana treatment began with *snehapana* using *Tiktaka ghrita* for 7 days. *Ghrita* has *dhee-smruti-medhakara* properties, and since the blood-brain barrier has a lipophilic structure, *sneha* can easily penetrate brain cells, supporting psychological improvement. Furthermore, *sneha* contains essential cholesterol, which aids the production and regulation of neurotransmitters in the gut part of the enteric

nervous system. These neurotransmitters regulate mood, memory, learning, stress, sleep, and cognitive functioning. Hence, *snehapana* with *Tiktaka ghrita* alleviates hyperactivity and sleep disturbances due to its *pitta-kapha samana*, *medhya*, *chakshushya*, and *unmadahara* properties.

Following *snehapana*, *abhyanga* and *ushma sweda* were performed using *Satahwadi taila*, considering the involvement of *pittanubandha vata*. Children with autism often exhibit tactile hypersensitivity, mood swings, anxiety, and irregular sleep patterns. *Abhyanga* not only serves as a *dosha utkleshana* procedure prior to *shodhana* but also pacifies *vata dosha*, thereby mitigating these symptoms.

Shiro pichu with *Thungadrumadi Taila* was administered for 10 days to provide *snehana* and *brimhana* effects to the *shiras*. *Thungadrumadi Taila* has *Pitta Samana*, *Nidra Janana*, and *Shiro-Nayana Tarpana* properties, which significantly improved the patient's sleep.

Mridu sodhana with *Avipathi choorna* improved intestinal microbial dysbiosis and reduced hyperactivity. It has *pitta samana* property, it also enhanced *medha* and *dhi*.

Takradhara using *Kalyanaka kashaya-siddha takra* brought excellent results in reducing hyperactivity, inattention, and irregular sleep patterns. *Kalyanaka kashaya* has *tridosha Samana*, *Deepana*, mild *Srotoshodhana*, *Medhya*, *Smrutikara*, and *Mano-Prasadana* properties. Additionally, *Takradhara* exerts a cooling effect on the brain and nervous system, helping release deep-seated stress and anxiety.

External nasal application of *Sarshapa taila* was done for 30 days. This type of *Nasya* is mentioned in *Kashyapa Samhita*⁹. Due to its *Ushna-Tikshna*, *Kapha-Vatahara* nature, the medicine is rapidly absorbed through the nasal mucosa, reaching the *Shringataka Marma* and diffusing to the brain via the *siras*. Olfaction begins when odorants bind to specific receptors in the nasal cavity. These signals are collected by glomeruli and relayed to the olfactory bulb, where they interact with brain regions¹⁰.

Furthermore, *matravasti* was administered using *Tiktaka ghrita* and *Madhuyashtyadi Taila*, both of which are *pittahara* in nature, to manage constipation effectively.

Balapadoladi niruhavasti and *Thiktaka* and *Madhuyashtyadi anuvasana vasti* was given in *Karmavasti* pattern. It helps in better absorption, retention and thus the better therapeutic activity and this pattern of *vasti* do not cause *vāta & agni dushti*.¹¹ The *dravyas* used in *Bala padoladi kashaya* are having *medhya*, *balya*, *rasayana*, *vrishya*, and *brimhana* properties. *Thikthaka ghrita* and *Madhuyashtyadi taila* are *pittahara* in nature.

In *Karma vasti*, 30 *vasti* are to be administered. Out of these 18 are *anuvāsana*, while remaining i.e. 12 *vasti* are *niruha*. Initially on the first day, one *anuvāsana* is given which is followed by 12 *niruha* and 12 *anuvāsana* alternately. Lastly, five *anuvāsana* are to be given. (18 S + 12 N = 30)¹²

A person who undergoes 18 *sneha vasti* as part of the *karma vasti* regimen is believed to attain several profound benefits according to Ayurvedic texts. These include *Shrutadhara* (श्रुतधर), which denotes an enhanced ability to remember and retain information after hearing something once; *Sahasrayu* (सहस्रायु), referring to the attainment of optimal coordination between the body, senses, mind, and soul, ultimately contributing to a prolonged and healthy lifespan; and *Sthirabuddhi* (स्थिर बुद्धि), representing a stable and focused intellect¹³. These outcomes reflect the holistic and transformative potential of properly administered *vasti* therapy.

The *Rasavaha srotas* and *Manas* are deeply interconnected. The healthy functioning of the *Rasavaha srotas* is essential for promoting happiness, strength, vitality, intellect, and longevity. The *rasayana* properties of *vasti* play a crucial role in restoring balance to the *rasavaha srotas*, thereby supporting overall well-being and fostering mental tranquility.

This case report highlights the significant role of Ayurvedic treatment-particularly Panchakarma therapy-in the management of Autism Spectrum Disorder (ASD) in children, a condition with rising global prevalence. While conventional medicine often offers only limited symptomatic relief, this case illustrates the potential benefits of integrating Ayurvedic interventions such as individualized herbal formulations, Panchakarma procedures, and dietary modifications into a comprehensive care plan. Such an integrative approach may contribute to improved clinical outcomes and enhanced quality of life for children with ASD.

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