



CASE REPORT

CASE REPORT ON THE AYURVEDIC MANAGEMENT OF ATTENTION DEFICIT HYPERACTIVE DISORDER

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Abstract

Attention Deficit Hyperactive Disorder is one of the most common neurodevelopmental disorders, characterized by persistent hyperactivity, impulsivity and inattention which significantly impairs the educational achievement and social functioning. The prevalence of ADHD in India falls varies from 2 to 17%. In Ayurveda literature, psychiatric and behavioral disturbances are reflected while explaining the vitiation of *Dhi*, *Dhriti* and *Smriti* causing *Pranjarparadha*. In Caraka Samhitha, Lord Punarvasu Atreya considers *prajnaparadha* as one of the causative factor of *Unmada*. There are various contextual references in Ayurveda, highlighting various *manovikaras* that can be correlated by looking into the clinical presentation in each cases. Here is the case of a 3 ½ year old male child with hyperactivity and restlessness and reduced attention span. He was given Ayurvedic medication, behavioral and speech therapy along with IP treatment for nearly 2 months. The child was diagnosed using DSM 5 criteria and pre and post-assessment were done using the ADHD T2 scale, Vineland Social Maturity Scale and Checklist of Activities of Daily Living (ADL). The assessment helped to conclude that there was a remarkable improvement in children through Ayurvedic intervention.

Introduction

Attention Deficit Hyperactive Disorder is a neurodevelopmental disorder characterized by persistent hyperactivity, impulsivity, and inattention that significantly impairs educational achievement and social functioning. ^[1] The prevalence of ADHD in India falls varies from 2 to 17%. ^[2] Etiopathogenesis of ADHD can be inferred through various studies. ADHD was found to be caused by the dysregulation of frontal-subcortical-cerebellar catecholaminergic circuits and atypical functioning in the frontal lobes, basal ganglia, corpus callosum, and cerebellar vermis. ^[3] This paves towards the inevitability of the role of the mind along with bodily factors to explain the psychopathology. In ADHD, the psychopathology involved is due to impairment of manas along with derangement of *dhī*, *dhṛti* and *smṛti*.ie; *Pranjarparadha*. ^[4] In Ayurveda, a variety of psychiatric conditions have been dealt with under the term *Unmāda* spectrum disorders and are said to be the excited state of mind caused by aggravated *saīra dosa* as well as the *manasika doṣa*. In Caraka

Samhitha, Lord Punarvasu Atreya considers *prajnaparadha* as one of the causative factor of *Unmada*. This results in impaired functions of mind, intellect, consciousness, knowledge, memory, desire, manners, behavior, and motor functions of an individual collectively.

Patient Information

A male child aged 3 ½ years reported to the outpatient department of Government Ayurveda College Hospital for Women and Children with complaints of hyperactivity like constantly on the go, twisted and wiggled in the chair, jumped up and out of the chair, poor peer group interaction, and eye contact and reduced attention span.

CASE HISTORY

According to the informant, the patient is the first child of non-consanguineous parents whose mother had been suffering from hypothyroidism (On Thyronorm 50 mcg) and the entire pregnancy period was stressful due to some personal and family matters. He was a normally delivered baby and weighed 2.8 kg. He cried soon after birth and had a neonatal seizure on post-natal day 3 and was referred and kept in NICU for 2 days. Up until that point, the infant was fed expressed breastmilk via paladay. The baby was discharged on post-natal day 9 and continued treatment for about 8 months. With the exception of walking, all motor developmental milestones were reached at the appropriate age; social milestones and language acquisition were not met on time. At age two and a half, he began to walk unassisted. At the age of two, mother observed the speech delay in addition to the aforementioned complaints. The child makes cooing sounds and only says "amma", albeit with less precision. During this period, the child was highly hyperactive, and restless; constantly on the go, twisted and wiggled in the chair, jumped up and out of the chair, and got easily excited. Speech therapy was given for about 1 month and couldn't continue due to covid-19 pandemic.

Dietetic history revealed that the infant was exclusively breastfed for up to six months, after which they were given formula, solid food, and breast milk until he was two years old. Up to the age, immunisations were administered as directed. Furthermore, there are no relatives with comparable illnesses.

Clinical Findings

The patient's bowel is regular, dry by day not attained appetite is good, sleep is sound, and no known history of allergy.

On analyzing the higher mental functions, though the patient is hyperactive and restless, he is conscious and pleasant with emotional attachment. Orientation in time is absent. His memory is impaired but can identify home and

Development History:

GROSS MOTOR	FINE MOTOR
Head control- 4 months	Grasping- 9 months
Turning over – 6 months	Drawing- occasionally scribbles
Sit with support- 7 months	Self-feeding & buttoning- not attained
Walking with support – 1½ year	
Walking without support – 2 years	
SOCIAL	LANGUAGE
Social smile – 4 months	Monosyllables – 1 ½ years
Responds to name – 5 months	Bisyllables – 2 ½ years
	Single word – 3 years
Dry by day – not attained	Sentence formation–3 word sentence - 3 ½ years

family members. At the time of admission at our hospital, Government Ayurveda Hospital for Women and Children, Poojapura, the child was hyperactive, inattentive, and restless with less clarity of speech. The patient was diagnosed using DSM 5 criteria. Assessments of the patient were taken before and after treatment using ADHD T2 Scale, Vineland Social Maturity Scale (VSMS), and Checklist of Activities of Daily Living (ADL). Vineland Social maturity Scale is designed to assess social competence and social adequacy while the Checklist of Activities of Daily Living helps to assess the ability of a person to feed oneself.

Ashta sthana pareeksha is as follows:

Nadi: Prakrutha nadi -Vatapitta, Vaikrutha nadi -Vata pitta ; Mootram-Anavilam; Malam – Pinditham ;Jihwa – Anupaliptham; Sabdam- Aspashtam & Avyaktham; Sparsha-Anushnam; Drik-Anavilam; Akruiti- Madhyamam

Asta sthana pareeksha infers the vaikrutha dosha in the present case as Vata paithika

Dasavidha Pareeksha is as follows

Dooshyam: Dosha- Vata,Pitta

Dhatu- Rasa

Srotas- Rasavahasrotas, Manovahasrotas

Desham: Deha desha - Sarvangam

Bhumi desha- Jangalam

Balam: Rogi Balam – Avaram

Roga Balam - Pravaram

Kaalam: Kshanaadi- Sisisram

Vyadhi avastha- Pravara

Analam: Madyamam

Vaya: Baala

Prakruthi: Vatapitta

Treatment

DATE	MEDICINES	TIMELINE	REMARKS
28-10-22 to 03-11-22	UTSADANA- with Triphala choornam Thalam with Rasnadi choornam and Jambheera swarasam	7 Days	
05-11-22 to 12-11-22	KSHEERADHARA with Panchatikthaka ksheera kashaya	7 Days	Hyperactivity slightly reduced
14-11-22 to 20-11-22	TAKRADHARA with Musta choornam, Amalaki and Takra	7 Days	Tries to speak new words
22-11-22 to 28-11-22	ABHYANGA with Balahatadi thailam and KSHEERADHOOMA with Yashtiksheera kashaya	7 Days	Ocassionally obey commands
30-11-22 to 6-12-22	SHIRODHARA with Mahamasha thailam	7 Days	Sitting tolerance increased
8-12-22 to 14-12-22	SHIROLEPAM with Panchagandha choorna, Musta choorna, Amalaki and takra Thalam- Rasnadi choornam +Mahamasha thailam (Initially kept for 45 mins, gradually increased the timing every 5 mins)	7 Days	Restlessness and hyperactivity reduced Tries to make 3 word sentences, clarity of speech improved

Internal Medicines

DATE	MEDICINES	DOSE	TIME OF ADMINISTRATION
	Tikthakam kashayam	- 5 ml kashayam with ¼ glass luke- warm water	-Twice daily before food
28-10-22 to 21-11-22	Tikthaka ghrtm ^[5] Swethasankhupushpi choornam	- 5 drops - 2 pinch with honey	-Twice daily before food -Once daily after food
	Yashti choornam	- ¼ tsp powder with honey	-in the morning after food
	Kalyanakam kashaya	- 5 ml kashayam with ¼ glass luke- warm water	-Twice daily before food
22-11-22 to 14-12-22	Tikthaka ghrtm Swethasankhupushpi choornam	- 5 drops - 2 pinch with honey	-Twice daily before food -Once daily after food
	Yashti choornam	- ¼ tsp powder with honey in the morning	-in the morning after food
	Kalyanakam kashaya	- 5 ml kashayam with ¼ glass luke- warm water	-Twice daily before food
	Mahakalyanaka ghrtm ^[6] Swethasankhupushpi choornam	- 5 drops - 2 pinch with honey	-Twice daily before food - Once daily
15-12-22 To 30-12-22	Kalyanaavaleha choornam	3 pinch along with honey and lemon juice to be applied on tongue	- Once daily
	Sudha bala thailam	Forexternal application on head and body	-Once daily

RESULT AND DISCUSSION

In this case improvements noted were as follows:

- Hyperactivity and restlessness reduced
- Twisting and wiggling in the chair and jumping up and out of the chair reduced
- Attention improved
- Obey commands occasionally
- Tries to speak certain words like 'amma' with more clarity
- Tries to speak new words and form 3 word sentences

Pre and post-assessments were done as follows:

The patient visited our hospital with symptoms of ADHD which was diagnosed using DSM 5 Criteria. According to Ayurveda, clinical manifestations such as restlessness, wriggling and twisting in the chair, and jumping up and down from the chair indicate a vata and pitta vitiation. Furthermore, since vaikrutha nadi is vatapaitthika, it can be connected obviously to vatapaitika unmada. While analyzing the *samprapti* of the present case, antenatal stress and hypothyroidism in the mother during the antenatal period led to *dhatvagni mandya* and *rasadushti* as one of the cause for *rasadushti* is "chintyaanam ati chinathana". In this case *prana* and *vyana vatavaigunya* in the foetus led to *manovaha srotodushti* along with the involvement of *sadhaka pitta* and *tarpaka kapha*. Among the five functional types of *vāta doṣa*, *prāṇa vāyu* controls the functions of *buddhi* and *mana*, while *udāna*

NAME OF SCALE	PRE-ASSESSMENT SCORE	POST-ASSESSMENT SCORE
ADHD T2	83	74
Vineland Social Maturity Scale	49	48
Checklist of Activities of Daily Living (ADL)	29	27

vāyu controls speech and helps in recalling past experiences and *vyāna vāyu* that governs the motor activities of the body, which are vitiated leading to the inattention, hyperactivity, and impulsivity. Simultaneously *buddhi vaiśeṣika ālocaka* and *sādhaka pitta* get vitiated which is the controlling factor of emotions such as *krodha*, *baya*, etc. [7] Vitiation of *tarpaka kapha* which is responsible for *indriya tarpaṇa* lead to abnormalities of the functioning of various *indriyas*. [8] As *sthanasamsraya* occurs in the *hridaya* with the vitiation of *manovahasrotas*, it can be correlated with *unmada* and based on the clinical presentation, more to *vata paithika unmada*. The treatment principle adopted

is *sasneham mrdu sodhanam*.

Internal medication was started with *pitta samana oushadhis* like *Tikthaka kashaya* and *ghrta*. *Tikthaka kashaya* and *ghrta* are effective in *vatapaithika unmada* and it contains *medhya* drugs like *brahmi* as ingredients. *Swethasankhupushpi choornam* is *tiktha rasa pradhana*, *seeta virya* and *madhura vipaka* and hence *pittasamana*. Moreover, it is *medhyarasayana*. *Yashti choorna* is *vatapitta samana* and *medhya rasyana*. As the hyperactivity was reduced during treatment; *kashaya* was changed to *Kalyanaka kashaya* mentioned in *Ashtanga Hridaya, Uttarasthana Unmada prakarana*. It is *medhya* as well as *vatanulomana*, moreover having site-specific action in the brain. With the *deepana* and *pachana* properties, it clears the channels of *manovahasrotas*. Adopting the principles of *unmada*, the first *rookshna* was done in the form of *utsadana* followed by *ksheeradhara* which is *snighda rooksha*. Though *takradhara* is *vatakapha samana*, it was done using *pitta samana* drugs like *musta*, *amalaki* etc. *Shirodhara* comes under *murdhni thaila* which is an extracranial drug administration through oleation. It is *indriyaprasadana* and pacifies *vata* which is responsible for the impulsive behaviour. As per certain studies, massage does significant brain functional activation changes. It also reduces the level of stress-related serum cortisol, arginine vasopressin, and salivary stress protein chromogranin A. This also influences hormonal and cerebral blood flow levels. [9-13] All these factors may lead to improved cerebral function, enhancing alertness and concentration abilities due to its relaxing and anxiolytic actions. [14-17] *Shirodhara* hence helps in decreasing the visual and auditory reaction time thereby increasing the attention span. [18]

Conclusion

Attention Deficit Hyperactivity Disorder is characterized by 3 core symptoms that may extend across adolescence and later even the whole life span. Early diagnosis, treatment, and supportive treatments at home play an important role in the favorable outcome of ADHD. Therapies like Behavioural therapy, occupational therapy, and speech therapy can cause slight improvement but are not sufficient to bring about optimum results. From this case, it's evident that Ayurvedic management along with these therapies can effectively manage ADHD, by adopting the principles of *Unmadam* and prescribing medicines assessing the *prakriti* and *koshta* of the patient

Declaration and Patient Consent

Authors certify that they have obtained a patient consent form, where the caregiver has given consent for reporting the case in the journal. The caregiver understands that his name and initials will not be published, and efforts will be made to cover the identity, but anonymity cannot be guaranteed.

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