Case Report

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A CASE REPORT ON THE AYURVEDA TREATMENT OF VAIKARIKANIDRA W.S.R SOMNAMBULISMIN A 10-YEAR-OLD GIRL

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Abstract

Introduction: Somnambulism is a behavioral disorder of sleep in which involuntary activities happen without the concern of that person. Abnormal sleep arising due to intake of vitiated Ahara vihara enforces disturbance of Tridosha and Triguna causing an imbalance in Mana. Main Clinical Findings: The present case reports a ten years old female childwith sleep disturbance, sleep talking, sleep walking and other bizarre activities during sleep. Diagnosis: The condition was diagnosed as a type of Parasomnia called Somnambulism (Ayurvedic diagnosis-Vaikarika Nidra).Interventions: The case was managed with Medhya, Krimighna, and Agnideepan drugs, thorough counselling in various sittings was also carried out and fumigation with Rakshoghana drugs was advised throughout the treatment. Outcome: Significant result is observed with this treatment protocol in the management of Vaikarika Nidra. Conclusion: Medhya medications, along with Agnideepana, Krimighna, Shrotoshodhana, suitable counseling, and Dhoopan Karma, had resulted in reversing the inappropriate behavioral and thought process of the child. Encouraging results was observed in terms of enhanced sleep, and relief from the symptoms of sleep walking.

Key words:Parasomnia, Somnambulism, Behavioural disorder, Vaikarika Nidra.

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Introduction

A healthy sleep schedule is essential for the brain and body to function normally. Any shift in duration, pattern and quality of sleep is considered abnormal, if it interferes our routine daily activity.It has been shown that sleep disruptions or reductions have a negative impact on endocrine and metabolic processes [1]. Sleepwalking (Somnambulism)comes under the definition of arousal parasomnia which consists of a series of complex behaviors resulting in involuntary movements on or off the bed.A state of dissociated consciousness known as somnambulism is usually experienced during the transition event from the deep non-rapid eye movement (NREM) stage into the rapid eye movement (REM) stage. It is caused by impaired arousal and is characterized by a hypnologic condition of partial waking and partial sleep [2]. Its' occurrence in children is frequent and is about 2-14%. The problem in children is usually benign, self-limiting and has maturational occurrence [3]. The prevalence of sleepwalking is higher in children than that of adults. The preferred medication is a low-dose benzodiazepine, while trazodone and tricyclic antidepressants are also often recommended. Presently, there are no standard guidelines available for the treatment of childhood somnambulism [4]. Growth, sustenance, reproduction, and the conclusion of life depends on proper and improper *Nidra* (Sleep). Various pathological conditions are arising as a result of improper *Nidra* [5]. People fall asleep when their *Mana*(mind) and *Indriya* (motor and sensory organs) get tired and they separate from their *Vishaya* (objects). Sleep arrives when Tama Guna reigns and Samjnavaha Srotasa becomes entangled with Sleshma.The reason for arousal or wakefulness is Satva Guna. *Vaishnavi Nidra* is associated with Lord *Vishnu;* itis sinful and inherently intrudes on all living things [6]. *Vaikarika Nidra* (abnormalsleep) is described under different terminologies in ayurveda texts. This iscase report of a girl suffering from sleepwalk ing treated successfully by *Ayurveda* treatment protocol . Principle of ayurvedic treatment for body and mind disorder was adopted successfully in this case and it had hown positive result in the treatment of childhood Somnambulism.

Case Report

Patient Information

A 10 years old female patient attended the OPD with her parents complaining sleep disturbance and sleep walking by her mother. Her height was 127 cm, her body weight was 32 kg, and her body mass index was 19.84 kg/m2.She looked well and content. She was having difficulty focusing on her routine work and felt dull during her school hours. She was apparently healthy with no other acute or chronic illnesses. She had an average physique, sharp face, faircomplexion, normal straight dark hair, and was very shy.Unlike most other sleep disorders, in this instance, somnambulism was diagnosed based on the patient's clinical history as reported by her parents. She reported to the outpatient department for seeking Ayurvedic consultation.

Clinical Findings

The patient had complaints of sleepwalking, which was disturbing her daily routine for the last two years. According to her mother the patient feels tired, irritable, lethargic during day time with chief complain of sleep disturbance, sleep talking, sleep walking and other bizarre activities during sleep. The episodes occur for at least 2 to 4 nights per week since last 2 years but she had no memory of the event. Her academic performance was reported poor during this period. She talked about fear of ghosts, zombies and dark places. She was usually yawning throughout the day and always needed a break for a nap in the afternoon, but was not able to have a sound sleep. Citing some apprehensions to present her daughters case in the OPD, the patient's parents reported to the hospital to seek *Ayurveda* management. While her academic performance was poor, she had a keen interest in drawing, and had good and satisfactory communication skills and behaviour. Her drawings revealed demonic creatures that she believed to haunt her in dark places. The patient had no history of snoring or sleep apneas, drug intake related to psychological problem. In her family, there was no history of diabetes, hypertension, cardiac disease, or neurological or psychological disease. There was no history of any bad incidence, nightmares, separation anxiety that might affect her mental health. In order to rule out obstructive sleep apnea, a comprehensive history was obtained regarding any unusual sleeping positions, such as hyper extended neck or sitting with the mouth open, as well as sleep-related paradoxical breathing, diaphoresis or enuresis at night, morning headaches, and excessive daytime sleepiness. The findings on history taken were not suggestive of forced awakenings, restless legs syndrome, gastroesophageal reflux disease etc. which act as a trigger for most of the parasomnias. The detail of *Dashavidha* and *Ashtavidhapareeksha* (Ayurveda examination) are explained in

Table 1**.**

Diagnostic Assessment

When it comes to somnambulism, history alone is sufficient to make the diagnosis; no laboratory testing is necessary.[7]Unless there are other symptoms, such as snoring or apneas, sleep tests are often not helpful.When diagnosing this instance, sleepwalking brought on by drugs is excluded, including those for neurological disease, benzodiazepines, lithium, antipsychotics, quinine, and antidepressants. Physical examination of oral cavity, throat, thorax was observed normal with no visible abnormality like enlarged tonsils, micrognathia or pectus excavatum. The diagnostic assessment was done by Sleep Disturbance Scale for Children (SDSC) before the treatment and after the treatment. The Six factor score showed significant improvement in total score after the treatment; especially for the factor DIMS (Disorders of initiating and maintaining sleep) and DOS (Disorders of excessive somnolence).

Timeline

The patient was given the therapy for a total six months, two months of OPD visits with one initial visit and three follow ups. On relief from the symptoms after two months, patient was observed by telephonic follow ups every two weeks for next four months for non-relapse of symptoms. Sleepwalking pattern was assessed after each sitting

Results were evaluated on the baseline and after completion of treatment and follow ups. A brief chronology of the patient's symptom onset and the start of therapy is given in the **Table 2.**

Therapeutic intervention

The patient was advised to take internal medicines for two weeks, as detailed in Table 3. In addition, Daivavyapashraya Chikitsa [8] was administered in the form of Dhoopan (medicated fumigation) using Modified Rakshoghna Dhoopa (MRD), which contains Vacha, Kustha, Nimba (leaves or bark), Guggulu, Sarsapa, Madhu, Ghrita, and Saindhava Lavana [9]. Counseling was also provided. The details of the patient's complaints and therapeutic interventions during different visits are presented in **Table 3**.

Outcome

After about two months from initial visit, most of the complaints got relieved gradually with mumbling during sleep occasionally and the patient started feeling better. After the complete two months of treatment and observation for total six months patient was again enquired for the symptoms of somnambulism. The case showed improvement in the symptom after treatment when compared to before treatment and it is mentioned in **Table 4**. The percentage change in the Sleep Disturbance cale for Children (SDSC) score in all the six factors is shown in **Table 5.**

Table 1: Details of *Dashavidha* and *AshtavidhaPareeksha* of the patient.

Dashavidha Pareeksha		
1.	*Prakriti*	*Vata Pitta*
2.	*Vikriti*	*Vata, Kapha, Mana*
3.	*Sara*	*Madhyam*
4.	*Samhanana*	*Madhyama*
5.	*Pramana*	*Madhyama*
6.	*Satmya*	*Madhyama*
7.	*Satva*	*Avara*
8.	*Ahara Sakti*	*Madhyama*
9.	*Vyayamsa Sakti*	*Avara*
10.	*Vaya*	*Baal*
Ashtavidha Pareeksha		
1.	*Nadi*	*Vata*
2.	*Mutra*	*Prakrita*
3.	*Mala*	*Prakrita*
4.	*Jihva*	*Alipta*
5.	*Shabda*	*Spashta*
6.	*Sparsha*	*Anushnaseeta*
7.	*Drik*	*Prakrita*
8.	*Akriti*	*Madhyama*

Table 2: A brief chronology of symptom onset and treatment given.

Events over a span of time	**Detail**
Occurrence of first symptom (~March 2021)	Disturbed sleep, sleep talking, sleep walking and other bizarre activities during sleep.
Initial Intervention by local practitioner	Above symptoms worsen, feels tired, irritable, lethargic during day time, day sleepiness, yawning.
Visit to OPD (02.05.2023)	Above symptoms + fear of ghosts and darkness
First follow up at OPD (FU I- 18.05.2023)	Full Compliance for the treatment protocol, reduced symptoms.
Second follow up (FU II- 08.06.2023)	Symptoms reduced gradually.
Third follow up at OPD (FU-III- 11.07. 2023)	Symptoms relieved gradually and patient started feeling better.
Subsequent follow ups after every two weeks (Telephonic)	All the Symptoms relieved.

Table 3: Details of therapeutic intervention

Date /day of visit	**Presentation during different visit**	**Interventions**
02/05/2023 (Initial OPD Visit)	• Disturbed sleep, sleep talking, sleep walking and other bizarre activities during sleep. • Feels tired, irritable, lethargic during day time, day sleepiness, yawning. • Fear of darkness and assume as haunted by ghosts, zombies etc.	1. Combination of *Smritisagar Rasa* 60 mg + *Amrita Satva* 500 mg + *YastimadhuChurna*1 gm with *PanchagavyaGhrita* oral twice per day. 2. Capsule Stresscom 1 tab once daily during night time. 3. Combination of *AvipattikarChurna*1 gm + *KrimipatanChurna*1 gm with honey twice daily. 4. SypCarminozyme 10 ml twice daily. 5. Fumigation: with *RakshoghnaDhoop*for 15 minutesin morning and evening daily 6. Counselling and Assurance.
18.05.2023	Frequency of sleep, sleep	Same treatment as above.

(FU-I in OPD)	talking, sleep walking and other bizarre activities during sleep decreased.	
08.06.2023 (FU-II in OPD)	Symptoms relieved gradually and patient started feeling better.	Same treatment as above.
11.07.2023 (FU-III in OPD)	All the Symptoms relieved.	Same treatment as above + *GokshuradiGuggulu*1 tab once daily

Table 4: Clinical Findings before treatment and after treatment.

Sr. No.	Clinical Findings	Before treatment	After treatment
1.	Ambulation during sleep	Present	Absent
2.	Trouble waking up during the episode	Present	Absent
3.	Opening of eyes during the episode	Present	Absent
4.	Confusion or agitation	Present	Absent
5.	Unusual or dangerous behaviors during the episode	Absent	Absent
6.	Quick return to sleep after the episode	Present	Absent
7.	Memory of the event	Present	Absent
8.	Confusional arousals and/or sleep terrors that coexist	Absent	Absent
9.	Daytime sleepiness, lethargy	Present	Absent
10.	Irritability in routine activities	Present	Absent
11.	Poor academic performance	Present	Absent
12.	Fear of darkness	Present	Present
13.	Talk about ghosts, zombies etc.	Present	Absent

Table 5: Change observed by Sleep Disturbance Scale for Children (SDSC) before treatment and after treatment.

	Factors	Before Treatment	After Treatment	Change Observed (%)
1.	Disorders of initiating and maintaining sleep (DIMS)	30	11	63.33
2.	Sleep Breathing Disorders (SBD)	01	01	00
3.	Disorders of arousal (DOA)	12	03	75
4.	Sleep wake Transition Disorders (SWTD)	14	09	35.71
5.	Disorders of excessive somnolence (DOS)	20	06	70
6.	Sleep Hyperhydrosis (SHY)	05	03	40
	Total score	82	33	59.76

Discussion

According to *Ayurveda Nidra*(sleep)isclassified as *Tamasi* (due to dominance of *Tama*), *Svabhavika* (physiological)and *Vaikarika* (pathological) [10]. Any type of sleep other than physiological or any change in the sleep pattern which interferes with the normal daily routine can be considered as*Vaikarika Nidra.*Vitiation of Vata as a result of *Nidansevan* (etiology) like intake of food that is dry and in small amounts, *SharirikShrama* which comprises physical labor that is out of proportion to the child's physical and mental ability, and *MansikaBhava* like excessive worry, fear, and anxiety, had resulted in the manifestation of Somnambulism.Reassurance, lowering triggers, lengthening sleep durations, improving brain function using *Medhya Dravya* (Nootropics), and cognitive development are the main focuses of treatment. *Smritisagar Rasa* (SSR) is a *Medhya* drug and it contain *Kajjali, Hartala, Manahsila, Tamra Bhasma*- each 1 parts, triturated 21 times with *Vacha kwatha, Brahmi svarasa, Jyotismatibeejataila* in sufficient quantity [**Error! Reference source not found.**1]. *Kajjali*is *Yogavahi*, *Rasayana* and increases the bioavailability of the drug [11]. *Haratala Bhasma* is *Apasmaraghna*[13] (anticonvulsive), an experimental study conducted in albino rats demonstrated its anticonvulsant action [14]. *Manahshila* possesses sedative-hypnotic activity by reduction of the spontaneous motor activity and

potentiates the diazepam-induced sleeping time observed in animal experimental models [15]. *Vacha, Brahmi* and *Jyotishmati Beeja Taila* are *Bhavana Dravyas* (liquid used for trituration) in SSR. *Vacha* is *Katu, Tikta, Ushna* in nature. It increases *Medhakrit* pitta and purifies *Majjadhatu* mala due to its *UshnaVeerya* and hence acts as *Medhya*. Due to *TiktaRasa* and *UshnaVeerya*, it increases *Majjadhatvagni* [16]. *Yasthimadhu (Glycyrrhiza glabra)* is a nootropic drugs. The aqueous and ethanolic extracts of *Glycyrrhiza* had shown anti-convulsant and antioxidant effect in Pentylenetetrazole induced seizures in albino rats [17]. Glabridin, a major flavonoid of Glycyrrhiza has Antidepressant-like activityseen in mouse models of immobility tests [18]. *Guduchi*(*Tinospora cordifolia*) has antidepressant-like activity involving Monoaminergic and GABAergic systems, as observed in a mouse model subjected to a tail suspension test and a forced swim test [19]. Another study demonstrated its neuroprotective activity, which includes modulation of the antioxidant system in rat hippocampal slices subjected to oxygen-glucose deprivation [20]. *AvipattikarChurna* consists of *Amlaki, Bibhitaki, Haritaki, Pippali, Maricha, Sunthi, Musta, Tejapatra, Lavanga, Ela, Trivrita, Vida, Vidanga* and*Sarkara*; and it alleviates the *Pitta* and purify *Srotas* (microchannels).*KrimipatanaChurna*had antimicrobial and anthelminthic properties. Parasitic infestation can directly affect sleep patterns or cause an immunological reaction that can alter the sleep. Capsule Stresscom contains extract of *Ashwagandha* (*Withaniasomnifera*), which is a potent relaxant. Syrup Carminozyme is a carminative and appetizer which potentiates *Agni* (digestive fire).The counselling was aimed for behavioral modification of the child, modification of her thought process towards darkness to assure her about the non-existence of entities like ghosts and to make her feel safe by the practice of medicated fumigation as a protective measure. The procedures under *DaivavyapashrayaChikitsa* act by its *Prabhava* (virtue).*Dhoopan* is an ayurvedic way of disinfecting environment and articles (air and surfaces) in use or in contact of patient since ancient period. *Rakshoghna* drugs used in this case for fumigation consists of a combination of eight drugs i.e., *Vacha, Kustha, Nimba* leaves or bark, *Guggulu*, *Sarsapa*, *Madhu*, *Ghrita, Saindhava Lavana* (Rock Salt): 1/16 parts.The assessment of sleep disturbance and effect of treatment was determined by Sleep Disturbance Scale for Children (SDSC) [21]. Parents were instructed on how to ensure their child's safety during nighttime events, including securing doors and windows, keeping sharp objects out of the child's reach, mopping the floor, and setting the mattress down there, among other precautions.

Conclusion

The case study aims to show how *Medhya* medications, in conjunction with protective *Dhoopan Karma, Agnideepana, Krimighna, Shrotoshodhana*, suitable counseling, and behavioral and psychological thought analysis had enhanced sleep, alleviated symptoms, and had lessened the intensity of episodes of sleep walking. In this instance, it also demonstrates how psychological elements like anxiety which is assessed by her fear about darkness and erroneous beliefs can cause, worsen, or even continue sleepwalking. To identify the processes of occurrence and establish the most effective treatment procedure, additional research is required.

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Conflicts of interest

There are no conflicts of interest between any of the authors.

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