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Case Report

Ayurveda Section

Ayurvedic Management of Huntington's Chorea (*Tandava Roga*): A Case of Rare Genetic Condition

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ABSTRACT

Huntington's chorea is a rare genetic neurodegenerative disorder. It is an inherited disease that manifests as motor, cognitive, and psychiatric abnormalities. The disease is caused by a genetic mutation involving Cytosine-Adenine-Guanine (CAG) repeat expansion on chromosome 4. According to Ayurveda, Huntington's chorea can be correlated with *Tandava Roga*, as mentioned in the *Sharangdhara Samhita*. A 50-year-old male patient presented to the Outpatient Department of *Kayachikitsa*, diagnosed with Huntington's chorea based on positive family history, molecular genetic analysis, and chief complaints of abnormal involuntary movements. The Ayurvedic treatment approach was classically based on *Shodhana* and *Shamana*. The principles used included *Balya* (strengthening), *Vatahara*, *Rasayana*, and nerve-stimulating actions. The patient underwent Shodhana with medicated enema (basti) for *strotoshodhana* (detoxification of body channels), along with other procedures such as *Shashti Shali Pind Swedan*, *Nasya*, *Shirodhara*, and *Shirotalam* for three sittings. The same treatment was followed, with the patient returning for *Panchakarma* procedures every two months (three sittings). Along with Shodhana, some Shamana medications were advised during the course of treatment for six months, accompanied by *Pathya sevan*. Assessment was done using the Abnormal Involuntary Movement Scale (AIMS), which showed marked improvement, with the score reducing from 33 to 11 over six months of treatment. The Ayurvedic approach can help improve the condition of patients with Huntington's chorea. Similar treatments can be utilised in such patients to study their efficacy in varied individual cases.

Keywords: Genetic mutation, Involuntary movements, Neurodegenerative disease, *Rasayana*, *Shodhana*

CASE REPORT

A 50-year-old male patient presented to the Outpatient Department of Kayachikitsa with chief complaints of involuntary jerky movements in both upper and lower extremities, difficulty in standing and walking, an inability to carry out daily activities, anxiety, restlessness, and mood swings for the past six months. The patient had a history of a fall due to loss of coordination six months ago and was subsequently admitted to the Neurology Department. The Magnetic Resonance Imaging (MRI) reports showed chronic cerebellar infarct. A maternal history of involuntary tremors was also noted. Based on the positive family history (maternal side), molecular genetic analysis, and symptoms, the differential diagnosis for the patient included myoclonus epilepsy, parkinsonism, and Huntington's chorea. As the symptoms did not improve with anti-epileptic or anti-Parkinson medications, and given the positive maternal history of Huntington's chorea, the patient was ultimately diagnosed with Huntington's chorea. After six months of treatment with antiepileptic drugs, some non steroidal anti-inflammatory drugs, and dopamine agonists (Tab. Parkitidine 100 mg), he did not experience significant relief. As the symptoms worsened, the patient sought further management at an Ayurvedic hospital. The treatment plan focused on reducing the symptoms and improving the quality of life of the patient.

He was a non vegetarian with a reduced appetite, and his sleep was disturbed due to overthinking and involuntary movements. Upon clinical examination, the eight-fold examination (*Ashthavidha Pariksha*) was within normal limits [Table/Fig-1] [1]. His gait was unstable, exhibiting choreatic ataxia, and occasional twitching of facial muscles was observed; high-pitched trembling speech was noted. Muscle power grading of the upper and lower limbs was normal.

S. No.	Examination	Observation
1	*Nadi* (pulse)	*Vata Pittaj* 82/min
2	*Mala* (bowel)	Irregular and constipated
3	*Mutra* (urine)	4-6 timed per day
4	*Jivha* (tongue)	*Saam* (coated)
5	*Shabda* (speech)	*Aspashta*- (Trembling voice)
6	*Sparsha* (touch)	*Anushnashita* (normal)
7	*Drik* (vision)	No pallor or icterus present
8	*Aakriti* (body built)	*Madhyam* (medium) (BMI- 23 kg/m^2)

[Table/Fig-1]: *Ashtavidha Pariksha* (eight folds of examination).

Assessment Criteria

On assessment, the patient showed improvement in signs and symptoms after six months of treatment [Table/Fig-2]. The treatment was planned according to the Ayurvedic principles of Shaman and *Shodhan chikitsa*, administered in three sittings. The patient underwent *Shodhana* with medicated enema (*basti*) for *strotoshodhana* (detoxification of body channels), along with other

Segment	Signs and symptoms	Before treatment	1st Follow-up	2nd Follow-up	3rd Follow-up	Percentage improvement after treatment
Facial and oral movements	Muscles of facial expression	3	3	2	1	66.67%
Lip and perioral area	Movements	4	3	3	1	75%
Jaw	Movements	3	2	2	1	66.67%
Extremities movement	Upper limbs	4	4	3	2	50%
	Lower limbs	4	3	3	1	75%

Trunk movement	Neck, shoulder, hips	4	3	3	1	75%
Global judgement	Overall severity of abnormal movements	4	3	2	1	75%
	Incapacitation due to abnormal movements	4	3	2	2	50%
	Patient's awareness of abnormal movements	3	2	2	1	66.67%
Dental status	Dentures	No	-	-	-	-
Sleep	Do movements disappear with sleep	Yes	-	-	-	-
Scoring		33	26	22	11	

[Table/Fig-2]: Abnormal Involuntary Movement Scale (AIMS) [1].
(0- None; 1- minimal; 2- mild; 3- moderate; 4- severe.)

procedures such as *Shashti Shali Pind Swedan, Nasya, Shirodhara*, and *Shirotalam* [Table/Fig-3]. The same treatment was followed for the three sittings, with the patient returning for *Panchakarma* procedures every two months (3 sittings). In addition to *Shodhana*, some *Shaman* medications [Table/Fig-4] were advised during the course of treatment for six months, along with *Pathya sevan* (healthy regimen). The patient experienced significant relief from symptoms, which was recorded during three follow-ups every two months after treatment.

S. No.	*Shodhana Chikitsa*	Drugs	Duration
1.	*Snehan* (body massage)- *Sarvanga* (whole body)	With *Sahacharadi Taila*	16 days
2.	*Pinda Swedan*	*Shashti Shali* (red rice)+ *Ashwagandha* powder+milk	16 days
3.	*Matra Basti* (medicated enema)	*Sahacharadi Taila* (60 mL)	8 days
4.	*Niruh Basti*	Decoction of *Musta Bharad* (300 mL)+*Mamsa Rasa* (meat soup) (100 mL)+honey (40 gm)+ *Saindhav* (salt) (10 gm)+ *Sahacharadi Taila* (50 mL)+ *Shilajeet Vati* (4 tabs)+ *Shatapushpa* powder (10 gm)+ *Ashwagandha* powder (10 gm)	8 days
5.	*Nasya*	*Shadbindu Taila* (8 drops each in both nostrils)	16 days
6.	*Shirodhara*	*Bramhi Taila*	16 days
7.	*Shirotalam*	*Bramhi* powder+*Jatamansi* powder+*Bramhi Taila* paste is applied on scalp	16 days

[Table/Fig-3]: *Shodhana Chikitsa- Panchakarma* procedures - shows 1 sitting.

S. No.	Drugs	Dose and frequency	Duration
1.	*Vatari Guggul*	500 mg- 2 tabs BD after food with lukewarm water	6 months
2.	*Brihat Vata Chintamani Rasa*	125 mg OD before meal with warm water	6 months
3.	*Ajamansa Rasayana*	2 tsp BD after food with milk	6 months
4.	*Vani Ghritam*	2 tsp BD after food with warm water	6 months
5.	*Kapikacchu* powder+*Ashwagandha* powder+*Musali* powder (1:1:1)	(2 gm each)- 6 gm BD after food with warm water	6 months
6.	*Mashaatmaguptadi Kashayam*	20 mL BD after food with equal quantity of water	6 months

[Table/Fig-4]: *Shamana Chikitsa*- Internal medications.

Clinically, there was a notable improvement in the patient's symptoms, such as involuntary movements and mood swings. The improvement in symptoms was assessed using the AIMS [Table/Fig-2]. After 16 days of the first sitting with *Panchakarma* procedures and medications, the patient showed mild improvements in symptoms related to lower limb and trunk movements. The patient was discharged after the first sitting, and the same internal medications were prescribed upon discharge. After one month, the patient returned for the second sitting, and a similar treatment protocol was followed. Likewise, for the third sitting, no changes were made to the treatment plan. As the patient showed marked improvement, the treatment protocol remained unchanged. The outcome of the treatment demonstrated a significant impact, as the AIMS score before starting treatment was 33, which reduced to 26 after the first sitting, to 22 after the second follow-up, and, upon completion of the treatment after the third sitting, the score was markedly reduced to 11.

DISCUSSION

Huntington's chorea, also known as Huntington's Disease (HD), is a rare genetic neurodegenerative disorder. It is an inherited disease, with onset usually occurring in middle age, and is characterised by involuntary choreatic movements, as well as psychiatric and behavioural abnormalities [2]. Several case studies conducted in Asia have shown an overall prevalence of 0.40 per 100,000 population [3]. The clinical manifestations of HD consist of motor, cognitive, and psychiatric abnormalities that progress over the years. Initially, the individual can continue working while experiencing common symptoms such as slight loss of coordination, mild involuntary movements, anger spells, and agitation. As the disease progresses, it leads to increased dependency in carrying out daily activities, with motor signs like hypokinesia, akinesia, rigidity, dysarthria, and heightened choreatic movements. Anxiety, depression, and hallucinations are some of the psychiatric disturbances observed. The gene for HD was discovered in 1983, linked to chromosome 4; the Huntington gene provides genetic information for the Huntington protein [4]. In HD, there are more than 36 trinucleotide (CAG) repeats. The trinucleotide repeat expansion for the Huntington protein leads to the production of an abnormal mutant protein, which progressively damages brain cells. Since the mutant protein is dominant, only one parent needs to be a carrier of the disease.

In Ayurveda, no specific disease is mentioned that can be directly correlated with HD. However, there is a brief mention of *Tandav Roga* in the *Sharangdhara Samhita*, which can be correlated with HD. The pathogenesis of *Tandav Roga* begins with *mastulunga majadhatu kshaya* (degeneration of the nervous system), leading to *pratata vata rogi* (repeated affliction with *vata roga*), decreased strength, and *vatapradhan tridosha* vitiation. The term *Tandava* refers to *Nruthyam*, a divine dance form performed by the Hindu god, particularly attributed to Lord Shiva, characterised by violent and frantic gesticulations. This condition presents with involuntary, violent, and frantic movements that originate from an imbalance or disturbance in the pathway of *vata dosha.*

The line of treatment for *Tandav Roga* includes *Agnivardhan, Brimhana*, and *Rechana*. In *Tandav Roga*, there are involuntary dancing-like movements of the upper and lower extremities, which are absent during sleep, leading to the diagnosis of the disease. After considering the principles of treatment for this condition, *Brimhana, Rasayana, Rechana*, and *Vatahara Chikitsa* were utilised. Since it is primarily caused by the vitiation of *Vata Dosha, Basti* (medicated enema) was chosen as the main line of treatment. Following 16 days of the first sitting with *Panchakarma* procedures and medication, the patient exhibited modest improvements in symptoms such as trunk and lower limb movements. Likewise, the course of treatment remained

unchanged until the third session. The treatment plan was not altered amid the patient's remarkable progress. The results of the treatment demonstrated a noteworthy influence, as the AIMS score was 33 before the start of treatment, dropped to 26 after the first sitting, to 22 after the second follow-up, and to 11 after the third sitting, with treatment completion occurring within six months. Wasnik KS et al., conducted a study in which treatment was given over three long years, focusing on *Balya* and *Rasayana* actions. In contrast, similar results were obtained within six months in the present study, which emphasised not only *Balya* and *Rasayana* actions but also primarily nerve-stimulating effects [5]. There is a similarity in the treatment principles of this study and the one conducted by Malavika B and Savitha HP. Although the treatment protocols appear similar, they differ in terms of the specific drugs used. *Shirotalam*, being a different procedure, enhances better penetration in higher centres, resulting in a *Vatahara* effect. The use of nerve-stimulating and *Rasayana* drugs leads to significant effects. Both studies focus on reducing symptoms and improving the quality of life of patients through *Vatahara* and *Rasayana* actions [6].

The treatment approach in the present case was planned with '*Snehana'* (body massage), which reduces vitiated vata dosha and provides strength and stability to the body. Skin stimulation through *Snehana* leads to increased circulation and better absorption of drugs [7]. *Sahacharadi Taila* helps in managing imbalances in ligaments, tendons, muscles, and joints. It also aids in reducing symptoms associated with tremors, convulsions, and psychosis, and is beneficial in treating neuromuscular disorders while exhibiting regenerative mechanisms [8]. *Snehana* was followed by '*Shashti Shali Pinda Swedan'*, which consists of *Shashtishali* (red rice), *Ashwagandha* powder, and milk. *Pind Swedan* promotes strength and stability due to its Vatahara nature, providing nourishment to the nervous system and strength to the muscles [9].

'*Nasya Karma'* was performed based on the concept that "*Nasa Hi Shiraso Dwaram*"-the nose is the entrance to the brain [10]. Drugs administered via the nasal route are directly absorbed through the olfactory and trigeminal pathways, facilitating entry into the brain. Various neurological functions are controlled by the higher centres of the brain, and *Nasya* acts on these areas to regulate vata and provide neuroprotective effects [11].

Due to the mental and psychological manifestations, '*Shirodhara*' was planned, which helped in reducing most of the psychological symptoms due to its tranquilising action, influencing the hypothalamus and inhibiting alpha-adrenergic receptors [12]. *Shirotalam* involves the application of a paste made from *Medhya* drugs with *Brahmi Taila*, which acts as a lipid medium and shows better penetration into the scalp. With *Vatahara chikitsa* being the prime principle, '*Basti'* was planned. '*Basti'* is referred to as *Ardha Chikitsa* (half treatment) and is considered the best treatment for *Vatavyadhis* [13]. *Kalabasti* was planned with *Niruha Basti* (medicated decoction enema), specifically *Mustadirajayapan Basti*, which rejuvenates nervous tissue and acts as *Balya, Brimhana*, and *Rasayana. Matra Basti* is a medicated oil enema that facilitates the easy elimination of *mala* (faeces).

Internal medications included *Vatari Guggulu*, which contains *eranda taila* that acts as a *vata shamaka*, while *guggulu* has anti-inflammatory activity [14]. '*Brihat Vata Chintamani Rasa'* contains mineral *Bhasmas*, including *Swarna, Rajat, Abhrak, Lauha, Praval, Mukta*, and *Rasa Sindura* [15]. This formulation acts as *Vatashamaka, Ojovardhak, Rasayana*, and a nervine tonic, with fast-targeted action. It enhances arterial blood flow and normalises abnormal muscle contractions. '*Ajamamsa Rasayana'* acts on *Mamsa-Meda Dhatu* (muscle and nerves) by strengthening and nourishing them [16]. '*Vani Ghritam'* is a proprietary siddha medication from SKM Pharma Company that contains *Haridra, Mandookaparni, Vasa*, and other ingredients. It is a classical Siddha preparation indicated for neurological disorders. '*Kapikacchu Churna'* contains seeds of Mucuna pruriens, which have levodopa, a direct precursor of dopamine, a neurotransmitter, thus acting as a nerve stimulant [17]. '*Ashwagandha Churna'*, being a *Rasayana*, shows notable effects on neurodegenerative diseases. In patients with Alzheimer's or Huntington's Disease, *Ashwagandha* can slow down, stop, or even reverse synaptic loss. Singh N et al., describe Ashwagandha as a nervine tonic [18]. '*Musali Churna'* acts as *Balya, Brimhana*, and a nervine tonic, serving as a remedy for memory loss due to its anti-amnesiac properties [19]. '*Mashaatmaguptadi Kashayam'* contains *Masha* (black gram) and *Atmagupta* (Mucuna pruriens) as main ingredients, which nourish the *Majja Dhaatu* and *Mamsa Dhatu* while reducing vitiated *Vata Dosha* [20]. It is effective in chronic degenerative diseases, especially when the patient is physically weak, and is also *Balya* and *Ojovardhak*. These internal medications led to significant improvement in the patient's condition. The treatment yielded notable results, reducing the AIMS score from 33 to 11 over a six-month treatment period. The patient has maintained positive outcomes even after discharge and was advised to undergo maintenance *Panchakarma* therapies after three months to prevent further disease progression.

CONCLUSION(S)

Huntington's chorea is a rare genetic neurodegenerative disease that is incurable and fatal in nature. The prognosis for this disease is poor. Therefore, the focus in the present case was on treating the root cause and improving symptoms. The Ayurvedic treatment approach was classically based on *Shodhana* and *Shamana*. The primary emphasis was on reducing symptoms and improving the quality of life of the patient. The principles used included *Balya* (strengthening), *Vatahara*, *Rasayana*, and nerve-stimulating actions. The combination of *Shodhana* and *Shamana* showed noticeably significant results in the patient. There is scope for research, as similar treatments could be applied to study their efficacy in various individual patients.

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