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Research Paper

Siddha therapy as a Useful Treatment Modality for Sensory Motor Axonal Neuropathy (SMAN) - A case study

Bhuvanagiri Satya Sindhuja[1], Injarapu Sankar[2], Shweta Tiwari[3]
[1] *Patron, Chakrasiddh health centre, Hyderabad, India;* [2] *Chief Healer, Chakrasiddh health centre, Hyderabad*

Abstract
Sensory Motor Axonal neuropathy (SMAN) one of the variants of Guillen Barre syndrome has an autoimmune aetiology. SMAN is characterized by peripheral Neuropathy leading tomuscular weakness, wasting, decreased reflexes, and sensory and motor nerve deprivation. The recovery process varies from a month to very slow recovery that can take several years. AzhalVaatham, Siddha medical term for peripheral Neuropathy bears a resemblance to symptoms of SMAN so the treatment procedure followed in Siddha for neuropathy will be same in this case. The aim of this studyis to decrease lumbar and Right foot pain along with increase in leg length to reduce the imbalance and to demonstrate the traditional therapy of Siddha as a comprehensive and efficient method of treating sensory motor axonal neuropathy (SMAN).
A 4-year old female who had right lower limb weakness for a year with difficulty in walking, taking the stairs and frequent falls while walking was treated with Siddha therapy. The diagnosis was made after a thorough clinical examination,electroneurography and high-resolution nerve conduction tests. Her ailment was treated with siddha by doingVarmamtherapy comprising of hand pressure treatments, dietary changesand physical therapy. Patient had a positive outcome after undergoing therapy for one month,showing a noticeable increase in muscular strength and motor function with a follow-up after 2 months. The patient was able to walk with higher pace and running was improved. The pain score on NRS scale which was at 8 was reduced to 4-5 after treatment. There was a noticeable difference in range of movements (ROM) at hip area which was clearly visible while she walked.The leg length difference was reduced by 1.2 cms and the Huges functional disability reduced from grade 3 to 1 (walking without help and running).
Considering the poor prognosis of patients with sensory motor axonal neuropathies in modern medicine, the regression of our patient's symptoms and the improvement in the muscular strength and motor skills with Varmam therapyshows its therapeutic potential in SMAN.This case demonstrates the traditional therapy of Siddha as a comprehensive and efficient treatment modality for sensory motor axonal neuropathy, especially in juvenile instances, necessitating additional research and validation of its effectiveness.
Keywords: *sensory motor axonal neuropathy, SMAN, AzhalVaatham, Siddha medicine, Varmam therapy, hand pressure techniques*

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I. Introduction

In 1986, Feasby and colleagues first described Sensory Motor axonal neuropathy (SMAN) as a rare and severe axonal subtype of Guillain-Barré syndrome (GBS), characterized by both sensory and motor disturbances [1]. The course of disease is similar to the classical GBS, but SMAN israre, severe and recovery is prolonged to many years, might lead to complete paralysis or disability of lower limbs [2]. In modern medicine, the therapy used for SMAN is plasma exchange (PLEX) and intravenous immunoglobulin (IVIG), while in some cases steroids are given though the benefits of all therapies is limited and remains ambiguous [3].

Though, 7-9% peripheral neuropathy cases are seen in patients above 50 years but is also seen in 3% of the population across all ages. Based on electrodiagnosis and pathologic findings,peripheral neuropathy can be subdivided into two main categories: *axonloss* and *demyelination* [4]. Peripheral neuropathy, which affects the nerves outside the brain and spinal cord, includes sensory motor axonal neuropathy (SMAN). 40-65% cases of SMAN is prevalent in Asia, Central and South America with 9% estimated cases in North America and Europe [5]. Studies imply that body's own immune system destroys the axons of both sensory and motor nerve cells.

Muscle weakness and motor impairments are primarily caused by the degeneration of both sensory and motor nerves.

The disease affect is predominantly bilateral and there is symmetric weakening of the limbs, the progression can last from a day toa month before reaching astage, and after immune stimulationmay lead to involvement of both sensory and motor nerve, reaches its peak clinical deficit in 2–4 weeks. Lower limbs are more commonly affected than arms, giving the appearance of ascending paralysis [6]. Particularly in juvenile patients, this illness can have a significant negative influence on their quality of life since it interferes with their capacity to carry out daily tasks and reach developmental goals [7].

Causes of axonal sensorimotor neuropathy may be attributed toiatrogenic, metabolic, toxic, nutritional, infectious, immune-mediated, vascular,neoplastic and genetic. Clinical symptoms of SMAN is characterized by an acute weakness of the limbs, diminished reflexes with loss of sensory symptoms.Initial findings include foot deformities and sensory changes with progression to altered gait and muscle wasting and weakness, fatigue, sometimes leading to vegetative condition.Sensory disturbances can cause tingling, numbness or lack of sensation in affected limbs with mild to moderate pain in certain cases [7,8].

Currently, there is no cure or effective drug treatment for SMAN. Treatment is aimed at reducing symptoms with physiotherapy, orthotics, splints or braces, fatigue and pain management and may include surgical treatment of skeletal and soft-tissue abnormalities. To avoid the continuous medication and surgeries, patients have started opted for alternative therapies. Siddha vaidyam is such CAM which is non-invasive and without medication. Siddha Varmamtherapy (SVT) specifies the therapeutic manipulation of certainpoints in which the life energy is found concerted. Handling on thesepoints with a particular force for the definite time will release the lifeenergy from these points and fetch relief to the affected individual byregulating the flow of life energy which is blocked due to attack on particular Varmampoints or due to other causes [9-10].

Here, we present a case of SMAN variant of GBS, whose some symptoms resembles the *Azal Vaatham* in Siddha Medicine. The patient was successfully managed with Siddha using the Varmam therapy along with dietary modifications and Physiotherapy playing an important role to strengthen the patients muscular tone.

Family History:

A thorough examination of patient's family tree found no evidence of any neurological or genetic diseases in the bloodline. There were no known cases of such neurological diseases in the family tree up to the fourth generation. The mother had a H/O miscarriage at 6 months of her first conception and the patient was second. According to her parents, patient was born at 10 months andwas uneventful.

II. Assessment Measures:

Before start of treatment, all videos of patients walking style, (ROM) range of movement of legs and hip area, B/L leg difference and Huges functional disability was recorded as pre-treatment assessment. It is essential, as it will affect the final outcomes and the improvement can be identified. Pre and post-treatment pain severity measurement were assessed using the NRS (Numeric Rating Scale) at each treatment session where 0 refers to no pain and 10 refers to worst possible, excruciating, unbearable pain. The pain score on NRS scale was at 8. The leg length difference was 1.8 cms and the Huges functional disability was recorded at grade 3.

Case Report:

A 4-year-old girl from Hyderabad who was diagnosed with SMAN in her Rt lower limb confirm through diagnosis, with a H/O frequent falls and imbalance while walking was brought to Chakrasiddhon 07/06/2023 with symptoms of discomfort, weakness, and shaking in Right leg. Though, on examination the child's B/L limbs were found week but her right lower limb was where she had the most symptoms. Her parents observed that during the last six months, these symptoms had gotten progressively worse, hurting the child's mobility and general quality of life.

On taking a detailed medical history of patient, it was known that she had H/O severe diarrohea after her birth for 3 months. She had an episode of focal convulsion for 5 mins when she was 3 yrs old but the parents didn't go to any doctor though she did not had any such episode lateron. According to her mother, she started holding her head at 5 months and walked at 1 ½ yrs but it was a slow walk. She was unable to run fast like other children and while walking she had waddling gait. Till 3 years, she was unable to take stairs. She complains of frequent falls whenever she is walking, her legs shiver and get pain during walks.She was unable to walk out in for even 2 min and will fell frequently. Her parents said that during the previous six months, these symptoms had gotten progressively worse, hurting the child's mobility and general disturbing quality of life [12]. Other than this issue, the child is alert, sharp and socially viable.

When the parents observed her issue, they went to NIMS hospital, Hyderabad where she was given medication to strengthen the muscles and was advised for physiotherapy for a month. Laboratory studies showed a total white blood cell count of 9000 cells/mm3 and Hb at 12.4. Pyruvate was elevated to 0.9 (0-0.7) C-

reactive protein level of 0.19 mg/dL; results of other biochemical blood tests were within normal ranges [11]. She was also referred to Genetics dept for a review on Muscular dystrophy (Fig 1) and ENMG was done. ENMG confirmed the diagnosis of Sensory motor axonal neuropathy[12]. MRI Brain showed no significant abnormality; MRI whole spine also showed normal other than weakness in her Lower limbs.

One of her relative referred her parents toChakrasiddhfor DrSinduja's, Patron Chakrasiddh for a review of her case. After conclusively diagnosing patient as having SMAN, the Chief healer and therapy staff worked with her parents to create a suitable treatment strategy. Her young age and the need for a non-invasive treatment strategy led to the recommendation of Varmam points, a therapeutic technique based on Siddha medicine.[14-15]

Treatment Protocol:

The treatment was started on 7th June, 2023; it was planned for 30 days with 20 days in initial phase and rest 10 days after gap of 2 months. The treatment included Lumbar and B/L legs especially the Right leg which needed much attention. The patient was kept on good protein diet for strengthening muscles and daily physiotherapy exercise for 1/2 hr.

Varmam therapy is therapeutic manipulation of Varmam points in which the pranic energy is concentrated. Pressure on these points is to reestablish the equilibrium of the body's essential life force (prana) and removing energy blockages to encourage self-healing. By regulating the pranic energy flow, these treatments hoped to promote the regeneration of sensory and motor neurons. In Varma Maruthuvam, there are 3 specific types of techniques which can stimulate the varmam points and adangal points (where pranic energy remains in abundance) namely *Thadaval* (massage), *Thattal* (tapping) and *Amartthal* (Pressing) were used as per requirement.Different varmam points that were pressed are: *Nanganapottu* (at lumbosacral joint), *Poovadangal* (near Ischial tuberosity), *KomberiKalam* (above medial malleolus), *Keel mannai* (lower end of calf muscle) and *Kuthikal*varmam (at heel) [16].

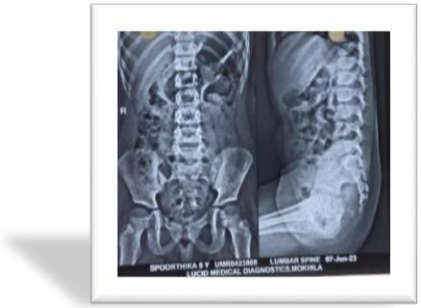
Dietary Modifications:To maintain nutrients and speed the healing process, a specific diet plan comprising foods high in proteins, antioxidants, B-complex vitamins, calcium and other vital minerals was developed (Table 3).

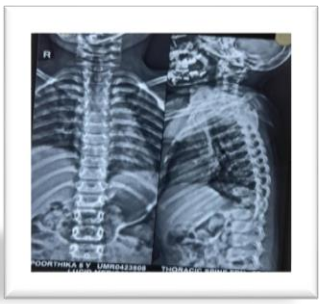
Physiotherapy: To enhance baby lower limbs' muscular strength and motor function, a customized physiotherapy program was created. In the physiotherapy sessions, activities to improve balance, coordination, and mobility were the main focus.

Parental Support and Involvement:Actively engaging patient's parents were extremely important to her treatment process in making sure patient followed the home physiotherapy exercises and food restrictions. The excellent results seen throughout therapy were greatly influenced by their commitment to following the prescribed course of care.

Monitoring and Follow-Up:Patientsdaily feedback was taken by her mother to see minor improvements in her daily routine. After explaining the x-rays and what changes are there, the patient was called for follow-up sessions after 2 months gap {Fig-1 Pre and post x-rays).

Fig 1: Pre and post x-rays of patient





III. Result

Patient had a positive outcome after undergoing therapy for one month, showing a noticeable increase in muscular strength and motor function with a follow-up after 2 months. The patient was able to walk with higher pace and running was improved. The pain score on NRS scale which was at 8 was reduced to 4-5 after treatment. There was a noticeable difference in range of movements (ROM) at hip area which was clearly visible while she walked. The leg length difference was reduced by 1.2 cms and the Huges functional disability reduced from grade 3 to 1 (walking without help and running).Her condition describes in detail before and after therapy (Table1 and 2).

Table 1: Pre and Post NRS (Numeric Rating scale for pain), leg length &Huges functional disability score difference

Parameters	Pre treatment	post treatment
Pain rating (NRS)	8/10	4-5/10
Leg length measurement	Rt- 22cms, Lt- 20.5cms	Rt- 22 cm, Lt- 21.8cms
Huges Functional grading score	3 (able to walk for 5 mins with help)	1 (able to walk for >5 mins without help and even run)

Table 2: Pre and Post therapy assessment of patient

Parameters	Pre treatment	Post treatment
Walking	Unable to walk for > 2 mins, break every 2 min. Very Slow walking	Walking 30 min without support, able to walk without break Slow walking but with no pain and at faster pace than earlier.
Running	Was unable to run	Able to run for 2-3 mins
Taking stairs	Unable to take stairs	Can take stairs with support
Pulling Pain	Pulling pain in Rt leg	No pulling pain felt
Gait	Walking by keeping both legs apart, Waddling gait	Walking by keeping both legs straight. Gait improved
Leg Weakness	Shaking and mild shivering in legs	No shaking but still weakness is there
Exercises	Could not do exercise properly	Was able to lift her legs without help and perform all exercises

IV. Discussion

AMAN and SMAN, subtypes of GBS are reported to have a more severe course than classical GBS, and patients regularly suffer from disabling residues. Considering the poor prognosis of patients with acute axonal neuropathies, the regression of our patient's symptoms under Varmam therapy seemed extraordinary. In this case study, we demonstrated how the Varmam treatment helped a 4-year-old child with sensory motor axonal neuropathy (SMAN) in her right leg. She frequently fell because of sensations including discomfort, heaviness, and shaking when walking. Her symptoms did, however, significantly improve after undergoing Varmam treatment. Based on mild and non-invasive Siddha medicine, an old kind of healing is Varmam therapy. Through a specialized test called Electroneuromyography (ENMG), which revealed nerve issues in her right leg, doctors were able to determine that she had SMAN. She had no family history of these neurological problems, which is an interesting fact that makes her situation distinct and necessitates a different approach to therapy. [11-12]

To strengthen her, a specialized diet and a unique training regimen was offered to her. The girl's strength, mobility, and walking showed a noticeable improvement after one month of training. Her parents noted

fewer instances of discomfort, trembling, and falling. Even though she still needs some assistance while walking fast, she made excellent progress, demonstrating how Varmam treatment may benefit kids with SMAN.

V. Conclusion

The advantages of Siddha therapy utilizing Varmampoints is a safe and natural method from Siddha medicine, for treating neurological problems in children are highlighted in this case study. Positive response in the case of SMAN shows that Siddha can be one of the treatment modalities in cases of Axonal neuropathies, although further studies are required to demonstrate its efficacy. Therapies like Varmam are being investigated as beneficial choices to aid young individuals with SMAN and comparable illnesses as interest in alternative treatment modalities increases.

Fig 2. Pre and post treatment pictures of patient

References:

[1]. Anagnostou E, Miller SP, Guiot MC, Karpati G, Simard L, Dilenge ME, Shevell MI. Type I spinal muscular atrophy can mimic sensory-motor axonal neuropathy. Journal of child neurology. 2005 Feb;20(2):147-50.

[2]. Yuki N, Kuwabara S, Koga M, Hirata K. Acute motor axonal neuropathy and acute motor-sensory axonal neuropathy share a common immunological profile. Journal of the neurological sciences. 1999 Oct 15;168(2):121-6.

[3]. Noury JB, Maisonobe T, Richard P, Delague V, Malfatti E, Stojkovic T. Rigid spine syndrome associated with sensory- motor axonal neuropathy resembling Charcot–Marie- Tooth disease is characteristic of Bcl- 2- associated athanogene- 3 gene mutations even without cardiac involvement. Muscle & Nerve. 2018 Feb;57(2):330-4.

[4]. Dafsari HS, Byrne S, Lin JP, Pitt M, Jongbloed JD, Flinter F, Jungbluth H. Goldberg–Shprintzenmegacolon syndrome with associated sensory motor axonal neuropathy. American Journal of Medical Genetics Part A. 2015 Jun;167(6):1300-4.

[5]. Foubert- Samier A, Kazadi A, Rouanet M, Vital A, Lagueny A, Tison F, Meissner W. Axonal sensory motor neuropathy in copper- deficient Wilson's disease. Muscle & Nerve: Official Journal of the American Association of Electrodiagnostic Medicine. 2009 Aug;40(2):294-6.

[6]. McKhann GM, Cornblath DR, Griffin JW, Ho TW, Li CY, Jiang Z, Wu HS, Zhaori G, Liu Y, Jou LP, Liu TC. Acute motor axonal neuropathy: a frequent cause of acute flaccid paralysis in China. Annals of neurology. 1993 Apr;33(4):333-42.

[7]. Hafer- Macko C, Hsieh ST, Ho TW, Sheikh K, Cornblath DR, Li CY, McKhann GM, Asbury AK, Griffin JW. Acute motor axonal neuropathy: an antibody- mediated attack on axolemma. Annals of Neurology: Official Journal of the American Neurological Association and the Child Neurology Society. 1996 Oct;40(4):635-44.

[8]. Matjac✓ić Z, Zupan A. Effects of dynamic balance training during standing and stepping in patients with hereditary sensory motor neuropathy. Disability and rehabilitation. 2006 Jan 1;28(23):1455-9.

[9]. Auer-Grumbach M. Hereditary sensory neuropathy type I. Orphanet journal of rare diseases. 2008 Dec;3(1):1-7.

[10]. Rotthier A, Baets J, Vriendt ED, Jacobs A, Auer-Grumbach M, Levy N, Bonello-Palot N, Kilic SS, Weis J, Nascimento A, Swinkels M. Genes for hereditary sensory and autonomic neuropathies: a genotype–phenotype correlation. Brain. 2009 Oct 1;132(10):2699-711.

[11]. Guérit JM, Amantini A, Amodio P, Andersen KV, Butler S, de Weerd A, Facco E, Fischer C, Hantson P, Jäntti V, Lamblin MD. Consensus on the use of neurophysiological tests in the intensive care unit (ICU): electroencephalogram (EEG), evoked potentials (EP), and electroneuromyography (ENMG). Neurophysiologie Clinique/Clinical Neurophysiology. 2009 Apr 1;39(2):71-83.

[12]. Cruz MW, Tendrich M, Vaisman M, Novis SA. Electroneuromyography and neuromuscular findings in 16 primary hypothyroidism patients. Arquivos de neuro-psiquiatria. 1996;54:12-8.

[13]. Daley P, Pomares G, Gross R, Menu P, Dauty M, Fouasson-Chailloux A. Use of electroneuromyography in the diagnosis of neurogenic thoracic outlet syndrome: a systematic review and meta-analysis. Journal of Clinical Medicine. 2022 Sep 2;11(17):5206.

[14]. Rakhmatova DI. Forecasting of complications of facial nerve neuropathy according to the results of electroneuromyography. World journal of pharmaceutical research. 2020 Apr 5:1547-55.

[15]. Traditional and complementary medicine practice guideline on Varmam therapy. 1st ed. Ministry of Health, Malaysia; 2016. p. 17-9.

[16]. R Thiyagarajan, Anaivaari R Anandhan. Special medicines in Siddha. Department of Indian Medicine and Homoeopathy, Chennai. 1st ed; 2009. p. 114.
[17]. http://varmatherapy.in
[18]. http://siddhabooks.com
[19]. http://www.varmam.org