



Contents lists available at <https://amejcaserepclinimag.com/>

## American Journal of Case Reports and Clinical Images



# Integrative Treatment Approaches for Para-Neoplastic Neurological Syndrome: A Case Study on the Efficacy of Shirodhara and Acupuncture

<sup>1</sup>Rachana KC, <sup>2</sup>Jaya Satyal, <sup>3</sup>Pradeep KC, <sup>4</sup>Avinash Chandra



<sup>1</sup>Tianjin University of Traditional Chinese Medicine, Tianjin, China, First Teaching Hospital of TUTCM, National Clinical Research Centre for Chinese Medicine Acupuncture and Moxibustion, China.

<sup>2</sup>Central Ayurveda Hospital, Nardevi, Kathmandu, Nepal.

<sup>3</sup>Ministry of Health, Department of Ayurveda and Alternative Medicine, Kathmandu, Nepal.

<sup>4</sup>NAMS, BIR Hospital, Kathmandu, Nepal.

### ARTICLE INFO

#### Article history:

Received: 23-08-2025

Revised: 12-09-2025

Accepted: 15-09-2025

Published: 18-09-2025

#### KEYWORDS:

Acupuncture, Para-neoplastic neurological syndrome, Traditional Chinese Medicine

**Background:** Para-neoplastic neurological syndrome (PNS) refers to a group of rare neurological disorders resulting from an immune system response to an underlying malignancy, typically a tumor [1]. The term “para-neoplastic” was first introduced by Guichard and Vignon in 1949 [2]. In PNS, the immune system mistakenly attacks normal nervous system tissues, leading to various neurological symptoms. Darnell RB and C.R.B, et al., study show that PNS affect different parts of the nervous system, including the brain, spinal cord, peripheral nervous system, and muscles [18,19]. The first description of PNS is found in the 19th century (1890), when French physician M. Aucho described the involvement of the peripheral nervous system in cancer patients [3]. In PNS, the neurological symptoms are not caused by direct tumor invasion or metastasis into the nervous system. Instead, the immune response is triggered by the presence of the tumor and the abnormal expression of certain proteins or antigens shared by both the tumor cells and the nervous system. That’s why PNS is often severe, disabling, and sometimes lethal. Usually, PNS presents with multiple clinical manifestations such as encephalitis, autonomic failure, peripheral neuropathy, cerebellar ataxia, visual complaints, and others. Diagnosis of PNS is challenging because many symptoms are nonspecific, and there is no single test that confirms this condition. However, a combination of clinical evaluation, imaging studies such as MRI, CT, or PET-CT scans, electroencephalograms (EEG), and laboratory tests including antibody testing and cerebrospinal fluid testing helps to diagnose PNS. Also, detecting specific auto-antibodies in the blood serum or cerebrospinal fluid can provide clues to the underlying tumor type.

In this case report, we want to show the effectiveness of Acupuncture and Shirodhara in reducing the severity of neurological symptoms of the PNS disease and reporting the outcome.

**Copyrights** © 2025, Rachana KC, *et al.*, This article is licensed under the Creative Commons Attribution-Non-Commercial-4.0-International-License-(CCBY-NC) (<https://amejcaserepclinimag.com//blogpage/copyright-policy>). Usage and distribution for commercial purposes require written permission.

### Case Presentation

A 26-year-old male patient presented to the OPD of Annapurna Neuro-Hospital with a complaint of feeling uneasiness and fatigue while walking (one year) with progressive ataxia, unsteady balance, slurring of speech as well as weakness of both lower and upper limbs that gradually increased from foot to upper part of the body in the last three months. Also, patient was unable to stand from sitting position without support and unable to walk without support. He had also complained of difficulty in holding a spoon or pen with no history of fever, vomiting, trauma or surgery. He was a nonsmoker and occasional drinker. There was no familial history of any neurological disease or any other chronic disease.

On examination; General complexion was fair, PILCCOD was nil, CNS examination was intact, and motor function was 3/5 on right limbs and 4/5 on left limbs. For further investigation, an MRI of the cervical spine and screening of the brain were done, which was normal. The patient had undergone different treatments at various health centers with differential

diagnoses like spastic syndrome, adrenal-myeloma-neuropathy, cervical myelopathy and lathyrism as the same time he used various interventional medicines like tizpa (a muscle relaxant), methyl-cobalamin (vitamin B12), beta-blockers (propranolol), and benzodiazepine. However, he didn’t get recovered with those interventions; rather, his symptoms got increased, and when he came to Annapurna hospital for better treatment. He has done hematology test that was normal, but the cerebrospinal fluid examination shows a slight increase in protein, about 58 mg/dl, and the serum shows the presence of PNMA2 antibody with a marking of 18, and he finally got diagnosed with a disease that is known as Para-neoplastic Neurological Syndrome. Usually, positive PNMA2 auto-antibodies (gene) patient experience different neurological signs and symptoms, with cognitive impairment [5]. However, para-neoplastic neurological syndrome is trigger by high levels of PNMA2 capsids found outside the CNS. The various para-neoplastic disorders are immune-mediated, and thus, several common onco-neuronal antibodies with associated syndromes have been discovered that affect various parts of the nervous system. That’s why PNS is a rare and early detection as well as early diagnosis of the disease help in stopping further progress. Shams’ili et al., study shows that, comparison to other parts of the brain, the cerebellum is the most commonly involved in para-neoplastic neurological syndromes [6].

\* Corresponding author

Rachana KC, Tianjin University of Traditional Chinese Medicine, Tianjin, China, First Teaching Hospital of TUTCM, Tianjin, China, National Clinical Research Centre for Chinese Medicine Acupuncture and Moxibustion, China.

**Treatment Plan:**

Patient has AMPA positive (+) that why only the symptomatic treatment as well as Intravenous immunoglobulin (IVIg) was done. He has got pain in limbs so for this Cap Gabanti 300 mg /BD was given. Symptomatic treatment has been done for the patient;

1. Tab Clonazepam 0.5mg.
2. Baclofen 10 mg /TDS.
3. Syp. Vomitab 1tsf/ SOS.
4. And a new therapy Acupuncture and Shirodhara was also given for first 14 days.

The Shirodhara treatment plan for Para-neoplastic Neurological Syndrome (PNS) consists of daily 20-minute sessions over two weeks, utilizing a blend of 300 ml Brahmi (*Bacopa monnieri*) oil mixed with 2 liters of sesame (*Sesamum indicum*) oil. Each session begins with a patient assessment in a calm environment, ensuring comfort. The warm oil is poured continuously over the forehead, focusing on the third eye area. After each session, patients rest for 15-30 minutes to promote relaxation, and are encouraged to hydrate for detoxification. Follow-up assessments track symptom improvement, while complementary therapies like acupuncture and stress management techniques are integrated to enhance overall outcomes. Regular evaluations allow for adjustments to optimize the treatment's effectiveness [7-15].

The acupuncture treatment plan involves daily sessions, six times a week, for two weeks. Each session begins with an initial assessment to evaluate the patient's specific symptoms and overall health. Key acupoints selected include Baihui (GV20) for central nervous system stimulation, Yongquan (KI1) for grounding energy, and Fengfu (GV16) for enhancing overall balance. Additional points such as Yanglingquan (GB34) and Zusanli (ST36) are included to promote energy flow and nourishment. Treatment incorporates both reinforcing techniques-stimulating GV20 to enhance CNS activity and reducing techniques, like using PC6 to calm overactivity. Continuous evaluation throughout the two weeks will allow for adjustments in acupoint selection and manipulation techniques based on the patient's response and progress [16,17].



Figure 1: Shirodhara.



Figure 2: Acupuncture.

**Results:**

The assessment of the patient was done with the help of SARA (Scale for Assessment and Rating of Ataxia). This scale was developed by Schmitz-

Hubsch. The scale consists of eight categories and used for the assessment of cerebral ataxia (Table 1).

**Table 1: Overall Assessment with the Help of Sara. Scale**

Sr. No.	Criteria	Score Before T/T	Score after T/T
1.	Examination of Gait	6	2
2.	Examination of Stance for walking	5	1
3.	Examination of sitting pattern	4	1
4.	Examination of Speech pattern	3	0
5.	Finger chase for examination of dysmetria	4	1
6.	Nose-finger test for co-ordination and tremors	3	1
7.	Fast alternating hand movements for dysdiadochokinesia	4	2
8.	Heel shin slide for co-ordination and tremors	4	1
<b>Total</b>		<b>33</b>	<b>9</b>

The patient's condition was assessed on the Scale for assessment and Rating of Ataxia (SARA). In this patient before treatment, mean SARA score was 33 then this score reduced to 9 after treatment. After 1.5 month of treatment, the patient was able to stand also able to walk without support. His speech was improved so incredibly and easily understandable. No other followup investigation was done other than physical examination.

**Discussion**

Para-neoplastic Neurological Syndromes (PNS) is a complex as well as rare group of neurological disorders that affect any part of the central or peripheral nervous system. Till now, one and only basic way to decrease symptoms of PNS is to treat the cancer as soon as possible, and the procedures include surgical excision/chemotherapy/radiotherapy/immunotherapy such as corticosteroids, plasma exchange, and drugs like azathioprine, cyclophosphamide, and rituximab. Supportive therapy includes analgesics, anti-epileptics, anti-psychotics, dysautonomia medications, and physiotherapy [20,21]. But, practically we found that, Shirodhara and acupuncture therapy has an excellent effect in managing the symptoms of PNS, So the following case report will add up a landmark that Shirodhara and acupuncture has a beneficial role in the management of para-neoplastic neurological syndrome.

Shirodhara is a form of Ayurvedic snehana procedure, involves gently pouring of liquids over the forehead. Shirasheka, Shirodhara, Pariseka, Sechana are synonyms of Shirodhara. This procedure is conducted in 3 steps that is preoperative (Purva karma), main (Pradhan karma) and postoperative procedure (Paschat karma). It is mainly used in neurobehavioral, psychosomatic disorders, pediatric attention deficit hyperactivity disorder, Cerebellar ataxia, Essential hypertension, Psychological symptoms of Menopause, Premature ejaculation, generalized anxiety disorder and Insomnia. Shirodhara produces a constant pressure and vibration (in the forehead) which is amplified by a hollow sinus. Then a constant pressure and vibration transmitted inwards through the fluid medium called Cerebrospinal Fluid (CSF). This vibration along with Luke-warm fluid activate the functions of the Hypothalamus, basal forebrain, Limbic system, Frontal lobe and Autonomic nervous system and secret normal amount of serotonin, catecholamine, endorphins, dopamine [12].

According to Ayurveda, Head is the root of all the sense organs because of this, shirodhara gives strength to the brain (Prana) and sensory organ (Indriyas). So when Indriyas stay healthy the brain/mind will automatically stay healthy. Thus shirodhara is good for brain diseases [26].

Study done by Sriranjini, et al., (2009) conducted a clinical trial in shirodhara on 10 cerebral ataxia patient found that there is a subjective improvement in walking as well as significant improvement in anteroposterior balance indices of dynamic stability.

According to Traditional Chinese Medicine (TCM), acupuncture is a highly valuable intervention. Our bodies have 14 energy-distributed channels (meridians), including 12 classical meridians consist of three on each side of the ventral part of the limbs and three on each side of the dorsal part.

Additionally, there are two central meridians: The Ren Meridian along the midline of the ventral side and the Du meridian (Governing vessel) along the midline of the dorsal side and each meridians contain numerous

acupuncture points. According to WHO in human body there 361 acupoints are located but on the basis of traditional Chinese medicine practitioners believe there are more than 2,000 acupuncture points. Acupuncture point are those point where energy is accumulated. In this case we used following acupoints Baihui(GV20), Yongquan(KI), Houxi(SI3), Yanglingquan(GB34), Sishenchong (EX-HN 5), Zusanli (ST36), Fenglong (ST 40), Fengfu(GV16), Neiguan (PC6), Yintang (EX-HN 3), Taichong (LR 3).

Sang Hyun Kim, *et al.*, (2024) study shows that acupuncture in KI1 directly activates muscle spindles (oblique head of the adductor hallucis, C and Aδ fiber) as well as improved communication between the afferent nerves and the brain. This activation is important for maintaining equilibrium and supporting bipedal movement by relaying essential sensory data from the feet to the brain, thus initiating cognitive feedback [23].

Ein-Yiao Shen, *et al.*, (2011) Baihui (GV20) is one of the most important acupoints of the government vessels and of the entire meridian acupoint system. It is responsible for enhancing Nitric Oxide (NO) generation and increasing local circulation. This point has a stimulatory effect on the central nervous system rather than just a peripheral nerve; it stimulates the central nervous system (the brain and spinal cord) to release neurotransmitters or neuromodulators into the brain and spinal cord, chemicals that either change the experience of pain or release other chemicals, such as hormones, that influence the body's self-regulation systems. There are three main mechanisms of biochemical change: conduction of electromagnetic signals, activation of opioid systems, and changes in brain chemistry, sensation and involuntary body functions [24].

Mitchell Elkiss *et al.*(2020) study shows that acupuncture in GV16 and GV20 will produced good involvement in stance, gait, balance, eye-movement coordination, speech articulation, and regulation of coordinated motor activities because stimulation of this 2-point activate cerebellum [25].

Acupuncture and Shirodhara are valuable complementary therapies in managing PNS. While conventional medications like Intravenous Immunoglobulin (IVIG), clonazepam, baclofen, and gabapentin primarily focus on symptom management and immune modulation, Shirodhara and acupuncture promote overall wellness and enhance the body's natural healing processes. Shirodhara helps reduce stress and anxiety, which can positively impact neurological function, while acupuncture aids in regulating energy flow and supporting the nervous system. Together, these therapies foster relaxation, improve mood, and may alleviate neurological symptoms, offering a holistic approach that complements conventional medical treatments. This integrated treatment strategy addresses both immediate symptoms and long-term well-being, highlighting the importance of including such therapies in comprehensive care plans for PNS. The significant improvement observed in the patient's condition post-treatment further supports the effectiveness of these modalities in enhancing quality of life and overall health outcomes.

## Conclusion

In conclusion, this case report highlights the significant role of Shirodhara and acupuncture as complementary therapies in managing PNS. PNS presents complex neurological challenges often associated with malignancies, necessitating multifaceted treatment approaches. While conventional therapies primarily focus on immunological modulation and symptom management, our findings suggest that integrating Shirodhara and acupuncture can enhance overall patient well-being and neurological function. The case of the 26-year-old male patient demonstrates marked improvement in his ataxic symptoms, evidenced by a substantial reduction in SARA scores from 33 to 9 post-treatment. Shirodhara contributes by promoting relaxation and reducing anxiety, potentially leading to enhanced neurological function, while acupuncture aids in restoring energy flow and optimizing nervous system health. This holistic approach not only alleviates immediate symptoms but also fosters long-term well-being, reinforcing the notion that incorporating alternative therapies can be beneficial in conventional medical frameworks.

Furthermore, this case underscores the need for further research to validate the efficacy of Shirodhara and acupuncture in broader patient populations. As awareness grows regarding the potential benefits of integrative treatment strategies, healthcare providers can offer more comprehensive care plans that consider the physical, emotional, and psychological dimensions of PNS. Ultimately, this case serves as a landmark for the exploration of complementary therapies in neurology, advocating

for a paradigm shift toward more inclusive treatment methodologies that prioritize patient-centered care and holistic healing.

**Conflict of Interest:** Authors not declare any conflict of Interest.

**Ethical Consideration:** Not required.

## References

- Dalmau J, Rosenfeld MR. Paraneoplastic Neurologic syndromes. In: Harrison's Principles of Internal Medicine. 17th ed. In: Fauci, Braunwald, Kasper, et al. editors. Vol. 1. New York: McGraw Hill Medical; 2008. p. 623-7.
- Posner JB, Furneaux HM: Paraneoplastic syndromes. *Res PublAssoc Res Nerv Ment Dis* 1990, 68:187-219.
- Auche M. Des nevrites peripheriques chez les cancreux. *Rev Med* 1890; 10:785-807
- Pittock SJ, Kryzer TJ, Lennon VA. Paraneoplastic antibodies coexist and predict cancer, not neurological syndrome. *Ann Neurol* 2004; 56:715-9.
- Bhat R, Steinman L. Innate and adaptive autoimmunity directed to the central nervous system. *Neuron* 2009; 64: 123-132 [PMID: 19840554 DOI: 10.1016/j.neuron.2009.09.015].
- S. Shams'ili, J. Grefkens, B. De Leeuw *et al.*, "Paraneoplastic cerebellar degeneration associated with antineuronal antibodies: analysis of 50 patients," *Brain*, vol. 126, no. 6, pp. 1409–1418, 2003.
- F. Graus, J. Y. Delattre, J. C. Antoine *et al.*, "Recommended diagnostic criteria for paraneoplastic neurological syndromes," *Journal of Neurology, Neurosurgery and Psychiatry*, vol. 75, no. 8, pp. 1135–1140, 2004.
- M. Rasputnig, C. A. Vedeler, and A. Storstein, "Onconeural antibodies in patients with neurological symptoms: detection and clinical significance," *Acta Neurological Scandinavica*, vol. 124, no. 191, pp. 83–88, 2011.
- Uebaba K, Xu Ft, Ogawa H, Tatsuse T, Wang BH, Hisajima T, *et al.* Psychoneuroimmunologic effects of Ayurvedic oil-dripping treatment. *J Alternative Compl Med* 2008; 14(10):1189-98.
- Dhuri KD, Bodhe PV, Vaidya AB. Shirodhara: a psycho-physiological profile in healthy volunteers. *J Ayurveda Integer Med* 2013;4(1):40-4.
- Santwani K, Shukla VD, Santwani MA, Thaker G. An assessment of Manasika - Bhavas in menopausal syndrome and its management. *Ayu* 2010;31(3):311-8. <https://doi.org/10.4103/0974-8520.77156>.
- Kajaria Divya Tripathi J.S., Tiwari S.K. *Annuals of Ayurvedic Medicine*, July -sep.2023; 2(3):114-117.
- Available from;<http://www.thedermreview.com/Water-based-moisturizer-vs-oil-based-moisturizer>.
- <https://healingscents.net/blogs/learn/18685875-how-essentials-oil-enter-the-body>. *Ayurvedic Medicine*, July-Sep. 2013; 2 (3):114-117.
- Posner JB. Paraneoplastic opsoclonus/myoclonus: B cells, T cells, both or neither / *Neurology* 2004; 62 (9):1466-7.
- Honnorat J, Antoine JC. Paraneoplastic neurological syndromes. *Orphanet J Rare Dis*. 2007;2(1):22.
- Darnell RB, Posner JB. Paraneoplastic syndromes involving the nervous system. *N Engl J Med* .2003; 349 (3):1543-1554.
- C.R.B.; Posner, J.B. Paraneoplastic syndromes involving the nervous system. *N. Engl. J. Med*. 2003,349, 1543-1554. [CrossRef]
- Leypoldt F, Wan dinger KP. Paraneoplastic neurological syndromes. *Clin Exp Immunol* 175 (3) (2014) 336–48.
- Pelosof LC, Gerber DE. Paraneoplastic syndromes: an approach to diagnosis and treatment. *Mayo Clin Proc* 85(9) (2010) 838–54
- Kannoth S. Paraneoplastic neurologic syndrome: A practical approach. *Ann Indian Acad Neurol* 15(1) (2012) 6–12
- Graus F, Keime - Guibert F, Rene R, Benyahia B, Ribalta T, Ascaso C, *et al.* Anti - Hu – associated paraneoplastic encephalomyelitis: analysis of 200 patients. *Brain* 2001;124 (pt 6); 1138-48 2003

23. Kim SH, Joung JY, Lee YH, Son CG. Anatomical Exploration of the KI1 Acupoint: Implications for Medial and Lateral Plantar Nerve Stimulation. *Medicina (Kaunas)*. 2024 Mar 26;60(4):535. doi: 10.3390/medicina60040535. PMID: 38674181; PMCID: PMC11051973.

24. Shen EY, Chen FJ, Chen YY, Lin MF. Locating the Acupoint Baihui (GV20) Beneath the Cerebral Cortex with MRI Reconstructed 3D Neuroimages. *Evid Based Complement Alternat Med*. 2011; 2011:362494. doi: 10.1093/ecam/neq047. Epub 2011 Feb 14. PMID: 21785620; PMCID: PMC3135375.

25. Elkiss M. Expanding Medical Acupuncture to Promote Balance: The Role of Cerebellar Functioning. *Med Acupunct*. 2020 Apr 1;32(2):66-70. doi: 10.1089/acu.2020.1408. Epub 2020 Apr 16. PMID: 32351659; PMCID: PMC7187970.

26. Patel D.V., Chandola H.M., Baghel M.S. & Joshi J.R. Evaluation of the role of Mansika bhava in the etiopathogenesis of Madhumeha (NIDDM) and its management by polyherbal antidiabetic Formulation with and without Medhya Rasayana-Ph.D. thesis, I.P.G.T.& R.A., G.A.U., 2009.

Rachana KC, Jaya Satyal, Pradeep KC, Avinash Chandra (2025). Integrative Treatment Approaches for Para-Neoplastic Neurological Syndrome: A Case Study on the Efficacy of Shirodhara and Acupuncture. *American J Case Rep Clin Imag*. 2025; September, 2(2):01-04.



Submit your manuscript to the

American Journal of Case Reports and Clinical Images  
CODEN: USA

and benefit from:

- Convenient online submission
- Rigorous peer review
- Immediate publication on acceptance
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your manuscript at

<https://amejcaserepclinimag.com/>  
&

[wjcasereports@gmail.com](mailto:wjcasereports@gmail.com); [submission@amejcaserepclinimag.com](mailto:submission@amejcaserepclinimag.com)