



## CASE REPORT

# Post electric shock neurological complication managed through Ayurveda - A case study

Harsha Haridas<sup>1</sup>, M M Abdul Shukkoor<sup>2</sup> & Deepa Jose<sup>3</sup>

<sup>1</sup>PG Scholar, <sup>2</sup>Professor & HOD<sup>3</sup>, Associate Professor Department of Shalyatantra, Govt. Ayurveda College and Hospital, Tripunithura, Ernakulam, Kerala, India

\*Email: [harshajijesh@gmail.com](mailto:harshajijesh@gmail.com)

## ARTICLE HISTORY

Received: 23 December 2024

Accepted: 28 March 2025

Available online

Version 1.0 : 30 March 2025

## Keywords

Post electric shock neurological manifestations, ayurveda management, *Nanatmaja vata vikara chikitsa*, *Siromarmabhighata chikitsa*, *Atithejasam daghdha chikitsa*

## Additional information

**Peer review:** Publisher thanks Sectional Editor and the other anonymous reviewers for their contribution to the peer review of this work.

**Reprints & permissions information** is available at <https://keralajournalofayurveda.org/index.php/kja/open-access-policy>

**Publisher's Note:** All Kerala Govt. Ayurveda College Teacher's Association remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

**Copyright:** © The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited (<https://creativecommons.org/licenses/by/4.0/>)

## CITE THIS ARTICLE

Harsha H, Shukkoor MMA, Jose D. Post electric shock neurological complication managed through Ayurveda - A case study.



Kerala Journal of Ayurveda.  
2025;4(1):01-04.

<https://doi.org/10.55718/kja.348>

## Abstract

Electrical injuries can have an impact on the Central Nervous System (CNS) and Peripheral Nervous System (PNS). CNS complications are well recognized, causing an increased risk of morbidity, while PNS complications are less predictable after electrical injuries. The clinical sequelae of an electrocution can appear immediately or hours, days or even years later. Neurologic sequelae include loss of consciousness, headache, memory disturbance, seizures, movement disorders, speech impediment and mutism, vertigo, cranial nerve dysfunction, meningitis, autonomic nervous system complications and peripheral neuropathies. In this case report, a 43 year old female patient came to outpatient department with complaints of uncleared speech with stammering and difficulty in understanding, writing and reading, along with weakness, numbness and reduced sensation and power of left upper and lowerlimb following electric shock. She had also experienced auditory hallucinations and slight memory loss after the incident. The case was managed with internal medicines and external therapies as per *Nanatmaja vatavikara*, *Siromarmabhighata* and *Atithejasam daghdha chikitsa*. After two months of ayurvedic management, there was considerable improvement in neurological symptoms. Impaired touch sensation, auditory hallucination and numbness of left upper and lower limb were completely cured. Stammering was absent after treatment. There was a one grade improvement in muscle power and reflexes. Aphasia was reduced in severity from moderate language related disability to minor difficulties of language. Dementia was also reduced in grading from mild to questionable or very mild. No reversal of symptoms was reported even after one year of treatment. So, ayurvedic physicians can adopt treatment principles of *Nanatmaja vatavikara*, *Siromarmabhighata* and *Atithejasam daghdha chikitsa* in post electric shock neurological complication to get symptomatic relief thus to improve quality of life of affected persons.

## Introduction

Electrical injuries are uncommon, but when they do occur, they can leave long-lasting effects on the body. Post electric shock syndrome is a set of neuropsychological symptoms (those affecting the brain, cognition and behavior) that persist long after an electrical injury. People develop these problems after an electrical injury, but diagnosis is challenging. Post electric shock neurological sequelae include loss of consciousness, headache, memory disturbance, seizures,

movement disorders, speech impediment and mutism, reduced cognitive abilities, specifically verbal recall and attention span, hallucination, vertigo, ringing in the ears (tinnitus), progressive hearing loss, cranial nerve dysfunction, meningitis, autonomic nervous system complications and peripheral neuropathies<sup>1</sup>. Long-term damage to the nerves and the brain will depend on the extent of the injuries. Neurological complications may develop up to several months after the shock. This type of damage can also cause psychiatric disorders. Current treatment options include cognitive behavioral therapy; speech therapy; neuropsychological treatment, pain medication; rehabilitation; and physical therapy<sup>2</sup>.

Based on clinical manifestation and pathogenesis, this condition can be correlated with *siromarmabhighatha*<sup>3</sup>/traumatic brain injury. Neurological symptoms like *swaravaikritha*, *manobudhiviparyayam*, *indriyartheshu asamprapthi* are the lakshanas of subcortical brain injury (*siromarmabhighata*). Ayurvedic treatment protocol includes *Nanatmaja vata vikara chikitsa* and *Athitejasam dagdha chikitsa*<sup>4</sup> as external therapies, *Siromarmabhighata chikitsa*<sup>4</sup> explained in *Susrutha* and *Bhagna chikitsa* is adopted both internally and externally.

### Case report:

A 43 years old female patient came to outpatient department on 14/01/2022 with complaints with complaints of unclear speech with severe stammering and difficulty in understanding, writing and reading, along with weakness, numbness and reduced sensation and power of left upper and lower limb following an electric shock on 17/09/2022. She also experienced auditory hallucinations and slight memory loss after the incident. Immediately after electric shock, she was unconscious

which lasts for more than 2 hours. She was admitted in Alappuzha Medical College, Kerala. After two weeks of treatment her consciousness was regained, but other neurological symptoms developed and persisted for which she was admitted in IPD

At the time of admission on 14/10/2022, her sleep was disturbed due to auditory hallucinations and she was disturbed, anxious about her recent memory loss. BP, pulse, respiratory rates were normal. Serum electrolytes, blood routine examination and urine analysis were done on 19/09/2022 and was normal. EEG and ECG taken on 17/09/2022 were also normal. Other investigations like MRI and CT Brain done on 20/09/2022 show no significant intraparenchymal pathology.

On inspection there were no signs of injury or scar due to electric shock injury on left hand middle finger (entry point of electricity). Palpation revealed general pain and weakness of left upper and lower limb along with reduced power and reduced sensation on left side. In higher mental functions examination, slurred speech with impaired articulation, reduced fluency and repetition was present. Her writing ability was also slow and impaired. Mild fasciculations of tongue were present while examining hypoglossal nerve.

### Conservative management

#### Internal medications (from 14/10/2022 to 12/12/2022)

1	<i>Drakshadi kashyam</i> -90ml twice before food
2	<i>Prathimarsanasyam-ksheerabala</i> 21 Å ,2 drops morning & evening, each nostril.
3	<i>Kalyana avaleha</i> - application on tongue with honey and lemon juice

### External therapy

Date	Treatment with duration	Medicines used	Remarks
16/10/22-22/10/22	<i>Ksheeradhoomanasya</i> -7 days	<i>Ksheerabala</i> <sup>5</sup> (21 Å)	
25/10/22-31/10/22	<i>Sirodhara</i> -7 days	<i>Dhanwantaram thailam</i> <sup>6</sup>	After <i>ksheeradhoomanasya</i> , <i>Sirodhara</i> and <i>Sirovasthi</i> -Stammering, Aphasia, Dementia were much reduced symptomatically and auditory hallucination was completely cured.
1/11/22-7/11/22	<i>Sirovasthi</i> -7 days	<i>Dhanwantaram thailam</i>	
8/11/22-14/11/22	<i>Choornapindasweda (snigdha)</i> -7 days	<i>Kolakulathadi choornam</i> and <i>Dhanwantaram thailam</i>	
15/11/22-21/11/22	<i>Sashtikapinda sweda</i> -7 days	<i>Dhanwantaram thailam</i>	After <i>Choornapindasweda (snigdha)</i> , <i>Sashtikapinda sweda</i> <i>Pizhijnuthadaval</i> , <i>Muttakizhi</i> and <i>Takradhara</i> -
22/11/22-28/11/22	<i>Pizhijnuthadaval</i> -7 days	<i>Dhanwantaram thailam</i> <sup>7</sup>	Muscle power and reflexes were improved in one grade. Touch sensation and numbness of left upper and lower limb were completely relieved
29/11/22-05/12/22	<i>Muttakizhi</i> -7 days		
06/12/22-12/12/22	<i>Takradhara</i> (head)-7 days		

## Clinical examination findings before and after treatment

Examination findings	14/10/22(Date of admission)	12/12/22(Date of discharge)
Aphasia (by grading) <sup>8</sup>	Grade 3 (moderate language-related disability)	Grade 1 (minor difficulties of language without disability)
Dementia (by grading) <sup>9</sup>	Grade 1 (mild)	Grade 0.5 (questionable or very mild dementia)
Auditory hallucination (by grading) <sup>10</sup>	Grade 2 (at least once a day)	Grade 0 (no voices in the given period, or less than once a month)
Muscle power (upper and lower limbs)	Grade 4	Grade 5
Reflexes (left side-Biceps, Triceps,)	1+	2+
Numbness (left upper and lower limb) and reduced sensation	present	absent

## Result and Discussion

After *ksheeradhoomanasya*, *Sirodhara* and *Sirovasthi* in post electric shock patient, stammering was cured completely, aphasia and dementia were much reduced symptomatically and auditory hallucination is completely cured. Muscle power and reflexes improved in one grade after *Choomapindasweda (snigdha)*, *Sashtikapinda sweda Pizhijnuthadaval*, *Muttakizhi* and *Takradhara*. Impaired touch sensation and numbness of left upper and lower limb were completely cured through ayurveda chikitsa.

*Dhanwantaram thailam*<sup>11</sup> was used in almost all therapies since it is alleviates all *vatavikaras* even in *marmasthana*. *Ksheerabala thailam*<sup>12</sup> is *vatapittahara* and is effective in all peripheral neurological disorders. The internal medications like *kalyana avaleha*<sup>13</sup> for *jihwa pratisaranam*, is good for aphasia, dysarthria and dementia. External therapies like *Ksheeradhoomanasya*, *sirodhara* and *sirovasthi* is *vatahara* and *kaphasoshahara*, thereby reduced symptomatically aphasia and dementia and cured auditory hallucination. *Drakshadi kashyam*<sup>14</sup> is *vatapittahara* and it is effective in reducing psychological symptoms like anxiety, insomnia etc. *Choomapinda sweda (snigdha)*, *sashtika pindaswedam*, *pizhijnuthadaval*, *muttakizhi*, *takradhara* is *balya* and *dhathukshayahara*, hence cured impaired touch sensation and numbness of left upper and lower limb. The above said treatments also improved muscle power and reflexes by its *vataharatva* property.

## Conclusion

In the present case, post electric shock neurological manifestations (CNS and PNS abnormalities) like stammering, aphasia, dementia, auditory hallucination, anxiety, insomnia, along with motor function impairment like reduced sensation, reduced muscle power, reduced reflexes and numbness of left upper and lower limb were symptomatically improved by conservative ayurvedic treatment protocol of *Nanatmaja vata vikara chikitsa*, *Sirmarmabhighata* and *Atithejasam daghdha chikitsa* within a short period of two months. No reversal of symptoms was reported even after one year of treatment. This case study highlighted that *Sushruta's* concept can be adopted with positive outcome in the management of post electric shock neurological manifestations.

## Limitation

This is a single case report; clinical trial is anticipated to provide scientific proof.

## Strength of study

This case report paved a new intervention in ayurvedic conservative management of post electric shock neurological complications.

## Acknowledgement

I am thankful to my teachers, colleagues for their valuable suggestions and wholehearted support.

## ETHICAL CONSIDERATIONS

The written informed consent has been obtained from patient for treatment and publication of data and photos. Confidentiality of the data was maintained. Ethical clearance has been obtained dated 10/04/2024, Ethical committee reference number 06/AR/SL/IEC/2023.

**Conflict of interest:** Author declares that there is no conflict of interest.

**Guarantor:** Corresponding author is guarantor of this article and its contents.

**Source of support:** None

## References

- (N.d.). Medlink.com. Retrieved March 28, 2025, from <https://www.medlink.com/articles/electrical-injuries-neurologic-complications>
- Feldman J (2023, December 27). Post electric shock syndrome: What you need to know. *Electrocution Lawyers, PLLC*. <https://electrocuted.com/blog/post-electric-shock-syndrome/>
- Agnivesha, Charaka, Dridhbala, Chakrapani. Chikitsasthana; Trimarmiyachikitsa: chapter 26, verse 3. In: Acharya J T (editor). CharakaSamhitawith Ayurveda Deepika commentary. Reprint ed. Varanasi: Chaukhambaparakashan. Reprint, 2013; 645
- Yadavji T. Charaka Samhita of Agnivesha, Chikitsa Sthana. Ch-28, Ver. 59, 3rd edn. Varanasi: Chaukhambha Surbharati

- Prakashana; 2017. 469 p
5. Swathy S S & Indira M (2010). The Ayurvedic drug, Ksheerabala, ameliorates quinolinic acid-induced oxidative stress in rat brain. *International Journal of Ayurveda Research*, 1(1), 4-9. <https://doi.org/10.4103/0974-7788.59936>
  6. Sharma S (2020). *Effect of Shirodhara in Psychosomatic Diseases (Manas Rogas)*. <https://doi.org/10.21275/SR20329125702>
  7. Singh J (2016, September 2). *Dhanwantharam Thailam (Oil)*. Ayur Times. <https://www.ayurtimes.com/dhanwantharam-thailam-oil/>
  8. Azuar C, Leger A, Arbizu C, Henry-Amar F, Chomel-Guillaume S, Samson Y. The Aphasia Rapid Test: an NIHSS-like aphasia test. *J Neurol*. 2013 Aug; 260(8):2110-7. doi: 10.1007/s00415-013-6943-x. Epub 2013 May 15. PMID: 23673997; PMCID: PMC3734736.
  9. (N.d.-b). Sciencedirect.com. Retrieved March 28, 2025, from <https://www.sciencedirect.com/topics/medicine-and-dentistry/clinical-dementia-rating>
  10. (N.d.-c). Rgoc.Nl. Retrieved March 28, 2025, from <https://www.rgoc.nl/wp-content/uploads/2020/02/AVHRS-english.pdf>
  11. Sushruta: Sushruta Samhita with commentary of Dalhana, edited by Vaidya Jadavaji Trikamji Acharya, Chowakhamba subhartiprakashan, Varanasi, reprint 2009, Sutra Sthana, 12th Chapter, Verse 38-39:
  12. Sushruta, Sushruta Samhita, part I, Ayuurveda Tatwa Sandeepika Hindi Commentary, Edited by Kaviraj Ambika Dutta Shastri chikitsaasthana. bhagna chikitsaadhayas 3/41 Chaukhamba Sanskrit Sansthan, Varanasi, Edition-13, 2002, Page no. 335
  13. KV Krishnan Vaidyar, Anekkaleelil S Gopala Pillai. Sahasrayogam. 27th edition. Alappuzha. Vidyarambham publishers 2007.286p.
  14. Kaviraj Govind Das Sen. Bhaishajya Ratnavali, edited by Mishra S, Swarabhedadhikara: Chapter 17,Verse 34-36. Chaukhamba Surbharati Prakashan, Varanasi, (Reprint ed.). 2013: 151

§§§