ISSN 2456-3110
Vol 3 · Issue 3
May-June 2018

Journal of Ayurveda and Integrated Medical Sciences

www.jaims.in

JAIMS

Charaka Publications

Indexed

ISSN: 2456-3110 CASE REPORT May-June 2018

Ayurvedic understanding of Central Pontine Myelinolysis - A Case Report

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ABSTRACT

A 56 year old male patient was admitted to S.D.M Ayurveda Hospital, Hassan, Karnataka with the confirmed diagnosis of Central Pontine Myelinolysis (CPM) on 11/12/17. The chief complaints were weakness of both hands and legs, stiffness in both hands and legs, pain in both shoulder joints, slurred speech, difficulty in walking with gait changes. H/O chronic alcoholism. MRI brain showed pontine and basal ganglia diffusion restriction - Acute Pontine Myelinolysis. The serum electrolyte showed serum sodium level as 128 mmol/litre. This disease can be understood as *Samana Avruta Vyana* in hyponatremic encephalopathy stage and the stage of myelinolysis can be understood as *Sarvanga Vata* with *Kapha Avruta Udana* and *Vyana*. After clinical evaluation, *Avarana Chikitsa* was started followed by *Kevala Vatika Chikitsa* and significant improvement was seen. Significant result was observed in subjective and objective parameters after the treatment. The patient was discharged with oral medications for 1 month.

Key words: *Central Pontine Myelinolysis, Samana Avruta Vyana, Sarvanga Vata, Avarana Chikitsa.*

INTRODUCTION

Central Pontine Myelinolysis is a concentrated, frequently symmetric, non inflammatory demyelination within the central basis pontis. First stage is hyponatremic encephalopathy followed by the stage of myelinolysis.[1]

In Ayurveda it can be understood in two stages. The stage of hyponatremic encephalopathy can be understood as *Samana Avruta Vyana*. Stage of myelinolysis can be understood as *Sarvanga Vata* with *Kapha Avruta Avastha*. Here *Kapha* creates *Avarana* for *Vyana Vata* and *Udana Vata* resulting in *Lakshanas* like *Vak Graha, Swara Graha*, *Dourbalya, Guruta* and *Gati Sanga*. Hence the treatment principle will be primarily *Avaranahara* followed by *Kevala Vatika Chikitsa*.

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Submission Date : 04/05/2018 Accepted Date: 24/05/2018

Access this article online

Quick Response Code

Website: www.jaims.in

DOI: 10.21760/jaims.v3i3.12900

UNIQUENESS OF THE CASE

1. Neurological presentation due to metabolic cause.
2. Stage wise explanation of the disease and treatment in Ayurveda.

CASE HISTORY

1. A 56 year old gentleman who is not a k/c/o DM and HTN was well before for 10 months. On 07/3/2017, in the evening at around 4 PM suddenly he started to have episodes of vomiting. As per the patient's words the vomitus was greenish black in color. At around 12 AM at night he had a fall from the bed. No h/o of any head injury. There after he started experiencing drowsiness and irrelevant speech.

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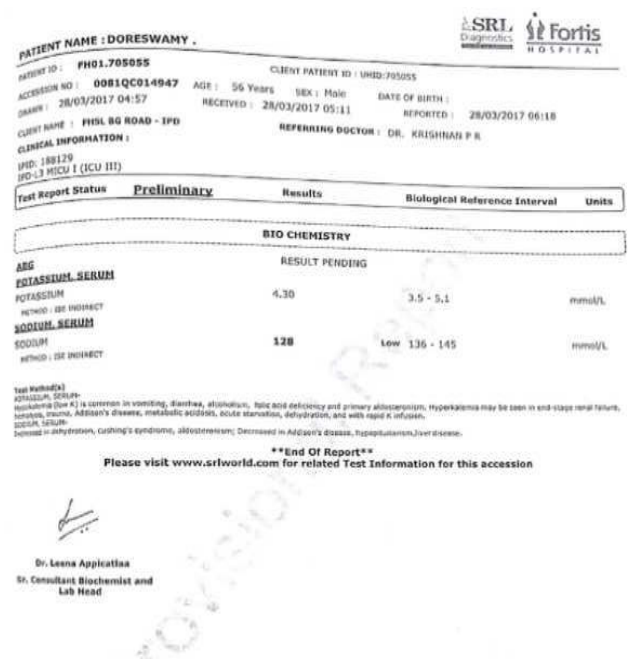
2. On 08/03/17 morning, after waking up, he started to have slurred speech with confused words and incontinence of urine. The drowsiness was persisting. He was able to walk with support. At 7 AM he was taken to a modern hospital from his house. He had travelled for around 2 km in auto. After reaching the hospital, he was first taken to Casualty where he had been catheterized. CT of the head was taken and in that no abnormality was seen.
3. On 11/03/17, he was discharged from the same hospital and was taken to another allopathic hospital for further treatment. At the time of discharge urinary incontinence and vomiting was completely absent. Difficulty in walking, slurred speech, drowsiness and confusion was persisting. He was admitted in ICU for two days. He was given with modern interventions, details of which are unknown. After these intervention he started experiencing loss of strength on both the hands and legs and severe breathing difficulty.
4. On 19/03/17, he was discharged from the hospital at around 3 pm and was referred to another super speciality Hospital in Bangalore. At the time of discharge he was having weakness of all the four limbs, slurred speech, difficulty in breathing and emotional upset. After admitting there, tracheostomy was done initially due to his breathing difficulty. He was under RT feeding also. He was there for 10 days.
5. On 7/4/17, he was discharged from the same hospital. At the time of discharge, his level of consciousness improved and breathing difficulty reduced. But weakness of four limbs and slurred speech was persisting.
6. On 15/4/17 he was again admitted there for the same complaints. He was given modern medications for 20 days. At the time of discharge i.e. on 06/05/17, the endotracheal tube and RT tube was removed, weakness of the limbs was reduced and there was slight improvement in the speech. He was able to walk without support, but with difficulty.
7. On 11/12/17, he was admitted in SDM Ayurveda Hospital with the complaints of weakness of both hands and legs, stiffness of both hands and legs, pain in both shoulder joints, slurred speech and difficulty in walking without support.

Figure 1 : Serum electrolyte report showing Hyponatremia



PATIENT NAME : DORESWAMY .

SRL Diagnostics | Fortis HOSPITAL

PATIENT ID : FH01.705055 — CLIENT PATIENT ID : UHID:705055

ACCESSION NO : 0081QC014947 — AGE : 56 Years — SEX : Male — DATE OF BIRTH :

DRAWN : 28/03/2017 04:57 — RECEIVED : 28/03/2017 05:11 — REPORTED : 28/03/2017 06:18

CLIENT NAME : FHSL BG ROAD - IPD — REFERRING DOCTOR : DR. KRISHNAN P R

CLINICAL INFORMATION :

IPD: 188129
IPD-L3 MICU I (ICU III)

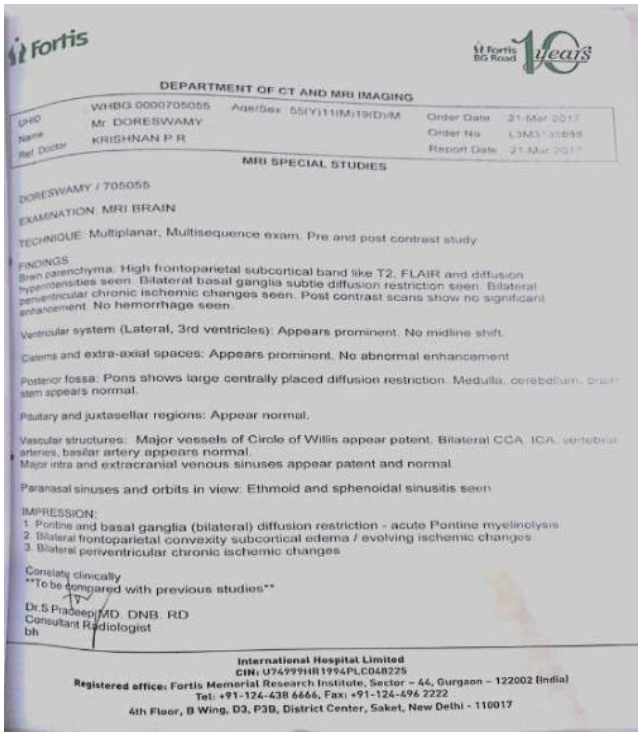
Test Report Status **Preliminary**	Results	Biological Reference Interval	Units
BIO CHEMISTRY			
ABG	RESULT PENDING		
POTASSIUM, SERUM			
POTASSIUM	4.30	3.5 - 5.1	mmol/L
METHOD : ISE INDIRECT			
SODIUM, SERUM			
SODIUM	128	Low 136 - 145	mmol/L
METHOD : ISE INDIRECT			

Test Method(s)
POTASSIUM, SERUM:
Hypokalemia (low K) is common in vomiting, diarrhea, alcoholism, folic acid deficiency and primary aldosteronism. Hyperkalemia may be seen in end-stage renal failure, ketoacidosis, trauma, Addison's disease, metabolic acidosis, acute starvation, dehydration, and with rapid K infusion.
SODIUM, SERUM:
Decreased in dehydration, Cushing's syndrome, aldosteronism; Decreased in Addison's disease, hypopituitarism,liver disease.

End Of Report
Please visit www.srlworld.com for related Test Information for this accession

Dr. Leena Appicattiaa
Sr. Consultant Biochemist and Lab Head

Figure 2: MRI head Impression



Fortis — Fortis BG Road 10 years

DEPARTMENT OF CT AND MRI IMAGING

UHID: WHBG.0000705055 — Age/Sex: 55Y(11M)19D/M — Order Date: 21-Mar-2017
Name: Mr. DORESWAMY — Order No: L3M3135858
Ref. Doctor: KRISHNAN P R — Report Date: 21-Mar-2017

MRI SPECIAL STUDIES

DORESWAMY / 705055

EXAMINATION: MRI BRAIN

TECHNIQUE: Multiplanar, Multisequence exam. Pre and post contrast study

FINDINGS
Brain parenchyma: High frontoparietal subcortical band like T2, FLAIR and diffusion hyperintensities seen. Bilateral basal ganglia subtle diffusion restriction seen. Bilateral periventricular chronic ischemic changes seen. Post contrast scans show no significant enhancement. No hemorrhage seen.

Ventricular system (Lateral, 3rd ventricles): Appears prominent. No midline shift.

Cisterns and extra-axial spaces: Appears prominent. No abnormal enhancement

Posterior fossa: Pons shows large centrally placed diffusion restriction. Medulla, cerebellum, brain stem appears normal.

Pituitary and juxtasellar regions: Appear normal.

Vascular structures: Major vessels of Circle of Willis appear patent. Bilateral CCA, ICA, vertebral arteries, basilar artery appears normal.
Major intra and extracranial venous sinuses appear patent and normal.

Paranasal sinuses and orbits in view: Ethmoid and sphenoidal sinusitis seen.

IMPRESSION:
1. Pontine and basal ganglia (bilateral) diffusion restriction - acute Pontine myelinolysis
2. Bilateral frontoparietal convexity subcortical edema / evolving ischemic changes
3. Bilateral periventricular chronic ischemic changes

Correlate clinically
To be compared with previous studies

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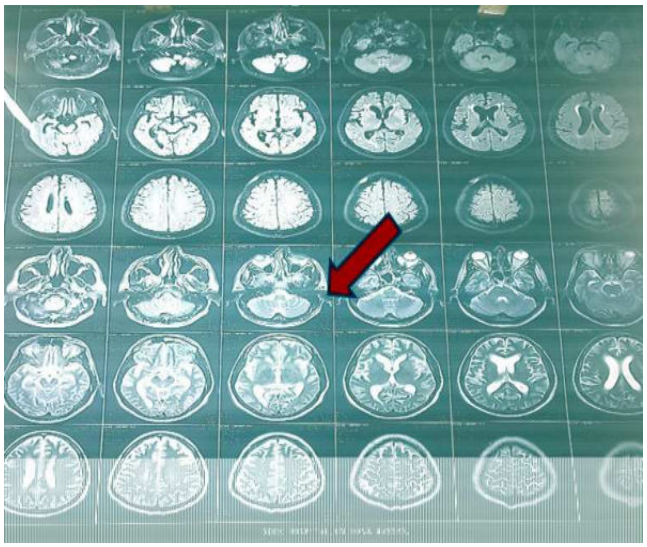
Figure 3: MRI head showing bat wing like lesion in pons



On examination,

Table 1: Muscle power before treatment.

Side	Upper Limb	Lower Limb
Left	2/5	3/5
Right	2/5	3/5

Table 2: Muscle reflex before treatment.

Reflex	Left	Right
Ankle Jerk	1+	1+
Knee Jerk	3+	3+
Supinator Jerk	2+	2+
Triceps Jerk	3+	3+
Biceps Jerk	3+	3+
Babinsky's Sign	Positive	Negative

Muscle tone - Hypertonic on both hands and legs

GCS Scoring - E_4, M_6, V_5 -15/15

TREATMENT GIVEN

External treatment

1. *Sarvanga Udwartanam* followed by *Bashpa Swedam*
2. *Sarvanga Abhyanga* with *Mahanarayana Tailam* followed by *Nadi Swedam*
3. *Kala Basthi*

Anuvasana Basthi - Manjishtadi Taila 60 ml

Niruha Basthi -

Honey 60ml

Saindhava Lavana - 12gm

Sneham - Manjishtaditailam - 60ml

Kalkam - Rasna - 15gm

Shatapushpa - 15gm

Kwatham - Manjishtadi Kwatham - 300ml

Internal medications

1. *Ashtavargam Kashayam* - 10 ml TID B/F
2. *Tab. Vatari Guggulu* - 1 TID A/F
3. *Lashuna Ksheera Pakam* - 50 ml TID A/F
4. *Gandharvahastadi Eranda Tailam* - 10 ml HS A/F

OUTCOME OF THE TREATMENT

Patient assessed outcomes

1. Weakness of both hands and legs reduced.
2. Stiffness of both hands and legs reduced.
3. Pain in both shoulder joints were absent.
4. Able to walk freely without support.
5. Slurred speech was persisting.

Clinician assessed outcomes

1. Muscle power of upper limbs improved from grade 2/5 to 3/5.
2. Muscle power of lower limbs improved from grade 3/5 to 4/5.
3. Muscle Tone of upper and lower limbs -Normal

DISCUSSION

Central Pontine Myelinolysis involves the unsystematic dissolution of the sheaths of myelinated fibers within the centre of base of the pons sparing the neurons.

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The predisposing factors include alcoholism, malnutrition or liver disease. The triggering factor is the rapid and incorrect management of hyponatremia.

In this case the first stage i.e. hyponatremic encephalopathy can be understood as *Samana Avruta Vyana* with *Lakshanas* like *Murcha, Tandra, Pralepa* and *Anga Sada*.[2] Here the *Nidana* can be identified as *Abhojana* as the patient was having malnutrition due to chronic alcoholism.

The second stage i.e. the stage of myelinolysis can be understood as *Sarvanga Vata* with *Kapha Avruta Udana* and *Vyana*. The *Lakshanas* present in this stage are *Vak Graha, Dourbalya, Gati Sanga* and *Sandhi Ruja*.[3] The *Nidana* for this condition can be understood as *Vishama Upachara* i.e. the rapid and incorrect management of hyponatremia. In this stage, *Kapha Avarana Chikitsa* was adopted with *Sarvanga Udwartana* followed by *Bashpasweda* and internally *Vatariguggulu* and *Lashuna* containing medications like *Ashtavarga Kashayam* and *Lashuna Ksheerapakam* was adopted. After removing the *Avarana, Kevala Vata Vyadhi Chikitsa* was adopted by *Sarvanga Abhyanga* with *Mahanarayana Tailam*. *Maharnarayana Taila* contains *Jeevaniya Gana Dravyas* which are *Vatahara*, *Brumhana* and *Balya*. *Kala Basthi* was administered with *Manjishtadi Taila* as *Anuvasana* and *Manjishtadi Kwatha Basthi* as *Niruha*. The purpose behind the selection of *Manjishtadi Taila* and *Kwatha* was to provide *Raktaprasadana* and *Bala* to the *Sira, Snayu* and *Kandara*. *Gandharvahastadi Eranda Tailam* was administered with the purpose of *Vata Anulomana*. Hence in this case *Samanya Avarana Hara Chikitsa* was adopted followed by *Kevala Vata Vyadhi Chikitsa*.[4],[5]

Conclusion

Pontine Myelinolysis can be understood as *Avarana* in two stages. The first stage is *Samana Avruta Vyana* and the second stage is *Sarvanga Vata* with *Kapha Avruta Udana* and *Vyana*. In first stage, *Anyonya Avarana Chikitsa* can be adopted. In the second stage, *Samanya Avarana Chikitsa* can be adopted followed by *Kevala Vata Vyadhi Chikitsa.* The prognosis of the disease depends on the *Dosha Bala*, *Vyadhi Bala* and *Kala Prakarsha*.

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How to cite this article: Dr. Anoop AS, Dr. Lakshmiprasad L. Jadhav, Dr. Sruthy Nair, Dr. Rohan Mohandas. Ayurvedic understanding of Central Pontine Myelinolysis - A Case Report. J Ayurveda Integr Med Sci 2018;3:250-253.
http://dx.doi.org/10.21760/jaims.v3i3.12900

Source of Support: Nil, **Conflict of Interest:** None declared.

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