

Ayurvedic Management of Calcified Neurocysticercosis: A Single Case Study

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ABSTRACT:

Numerous conditions are known to result in cerebral calcifications and in some diseases the nature and pattern of the calcifications can suggest a diagnosis. Small, punctate, single or multiple calcifications are common in *Taenia solium* endemic populations and there is good evidence to indicate that most are calcified cysticercal granulomas. Various pharmacological interventions are used for this treatment but little efficacy and its prognosis is also poor. Certain *Panchakarma* procedures and internal *Ayurvedic* medicines have been proven to be beneficial in the management of calcified neurocysticercosis. A 31 years old male patient came to our OPD with complaints of severe pain in left half of head, giddiness, pain and numbness in left upper and lower limb, difficulty in gripping with left hand. This case of calcified neurocysticercosis was managed by *Panchakarma* treatment along with internal medicines. *Ayurvedic* diagnosis was made as *Krimija Shiroroga* and *Nasya Karma* was performed along with internal medications for 90 days. *Nasya* is specially desired for the disease of supraclavicular parts. This treatment method was found effective in controlling progressive symptoms and improving the functional ability of the patient.

KEY WORDS: Calcified neurocysticercosis, *Krimija Shiroroga*, *Nasya*.

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INTRODUCTION:

The most common form of the disease, chronic calcific neurocysticercosis is the end result of host's inflammatory response to the larval cysticercus of *Taenia solium*. There is increased evidence indicating that calcific cysticercosis is not clinically inactive but a cause of seizures or focal symptoms in this population. Perilesional edema is at times also present around implicated

calcified foci.^[1] Perhaps the most direct evidence implicating calcified lesions as foci of seizure activity and other focal neurologic manifestations is the episodic appearance of perilesional oedema often accompanied by corresponding clinical findings.^[2] Perilesional edema appears as a bright signal using MRI FLAIR OR T2 imaging. In *Ayurveda*, it is very much similar to *Krimija Shiroroga*. In modern system of

medicines anti-parasitic and anti-inflammatory therapy are the first choices of treatment. Breaking the cycle of infection, boosting an individual's immune system, detecting the infection early and providing proper medical care are the best ways to avoid neurocysticercosis. The *Ayurvedic* principle of management includes *Shonita Nasya, Murdha Virechana, Krimighna Avapidaka Nasya, Vidangadi Taila Nasya, Puti Matsya Dhuma, Raktaja Pratishyaya Chikitsa, Krimighna Dravya* in *Bhojana* and *Pana* are effective in relieving pain and other associated symptoms.^[3]

CASE REPORT:

A 31 years old male patient resident of Uttar Pradesh visited the department of *Panchakarma*, I.T.R.A., Jamnagar on 15/03/2023, O.P.D. No. 10553 with complaints of Severe pain in left half of head, Giddiness, Pain and numbness in left upper and lower limb, Difficulty in gripping with left hand, Tinnitus, Itching sensation inside the head since 5 years.

The patient was apparently normal before 5 years. But after then he had nasal bleeding for 8-9 months which was stopped without any medications. Then he had recurrent fever and headache (left side) for 4 years.

The intensity of headache was increased day by day and in the last April, along with this associated symptom like recurrent rhinitis, giddiness, tinnitus, itching sensation inside the head, pain and numbness in left upper and lower limb and difficulty in gripping with left hand were also developed. He consulted 3-4 neurosurgeons and taken allopathic medications for 5-6 months but did not get any relief in above said symptoms. Patients have no history of past illness as well family history.

In personal History, patient was vegetarian his micturition, bowel, sleep, appetite were normal. Patients had addiction of pan-masala 2-3 pkts/day

MRI study of brain with contrast (03/06/2022):

There is well defined approx. 0.7×0.8×1.2 cm (SI×AP×TR) sized peripheral hypointense signal lobulated ring like lesion seen on T2W FLAIR in left basifrontal cortical-subcortical region, represents calcified granulomatous lesion like Calcified Neurocysticercosis.

Minimal perilesional gliosis/edema is seen at adjacent left basifrontal region, which shows hyperintense signal seen on T2W, FLAIR images.

THERAPEUTIC INTERVENTION:

Table-1: Panchakarma therapy:

Procedure	Drugs	Dose with duration	Any complication
<i>Nasya Karma</i>	<i>Apamarga Kshara Taila</i>	<i>Marsha Nasya</i> with 6 Bindu in each nostril for 7 days followed by <i>Pratimarsha Nasya</i> for 90 days	Nil

Table-2: Oral Medicines:

Name of the medicine	Dose	Anupana
<i>Punarnavastak Kwatha</i>	15ml twice a day in empty stomach	-
<i>Triphala Guggulu</i>	2 tabs. twice a day after food	Lukewarm water

Table 3: Symptoms of Calcified neurocysticercosis

Symptoms	1 st day (BT)	90 th day (AT)
Headache	4	1
Giddiness	2	0
Pain and numbness in left upper and lower limb	3	0
Difficulty in gripping with left hand	2	0
Tinnitus	1	0

RESULT:

After 90th days of assessments, variations in results were found on each symptom associated with calcified neurocysticercosis. The patient got relief in symptoms with gradual improvements. Assessment of each considering symptoms of calcified neurocysticercosis have been presented in table-3

MRI Brain (Plain) (03/07/2023) reveals:

10×8 mm sized T2 FLAIR hypointense signal with peripheral blooming seen in left basifrontal lobe. No evidence of perilesional edema. Possibility of calcified lesion (like granuloma).

DISCUSSION:

Aim of the treatment protocol is to control the progressive symptoms and improve the functional ability of the patient. Here *Shamana* medicine along with *Panchakarma* therapy were selected which help to eliminate the vitiated *Doshas* from the body. *Nasya* with suitable medicines is found very effective in this condition. Remarkable improvement was noticed in patient condition.

Mode of action of treatment:***Nasya Karma:***

Nasya is one of the *Panchakarma* mentioned in *Ayurveda*. It is very useful in diseases of supraclavicular region for which nose is the only channel. The therapy cleanses and opens the channels of the head, thereby improving the process of oxygenation,

which has direct influence on the functioning of the brain.

Apamarga Kshara Taila:

Method of preparation: For the preparation of *Apamargakshara taila*, four parts of *Tila taila* was taken in a wide mouthed stainless-steel utensil and heated till fumes emerged from the oil. The *taila* was warmed, and one part of *kalka dravya* (paste of *Apamarga Kshara*) and sixteen parts of *drava dravya* (liquid substance) were added. It was continuously stirred. Cooking was done on moderate heat. When the entire watery portion had evaporated (*Sneha Siddhi Lakshana*), the oil was strained in a warm condition. It was collected in a glass bottle. The whole procedure was completed within three days.

Apamarga (Achyranthes aspera L.) having *Katu Rasa*, *Katu Vipaka*, *Ushna Virya*, *Laghu* and *Ruksha Guna* thus offers *Kapha Doshaghnata* and *Vata Shamaka* effects. [5] *Ushna* and *Laghu Guna* of *Kshara* offers *Chedana*, *Bhedana* and *Lekhana Karma*. *Kshara* having *Katu Rasa*, *Ushna Virya*, *Teekshna Guna* and *Shodhana* and *Ropana* effect removes toxins through nasal pathways. It would also help to cauterize calcified mass and its corrosive nature helps in shrinkage of calcified deposits. It penetrates and coagulates protein which leads disintegration of haemoglobin resulting in reduction of size of calcified granule. *Apamarga Kshara Taila* makes the cavity and channels lubricant and reduces irritation in mucosa.

Punarnavastak Kwatha:

Method of preparation: Take equal quantities of each drug i.e., *Punarnava*, *Haritaki*, *Nimba*, *Daruharidra*, *Katuki*, *Patola*, *Guduchi* and *Sunthi* in *Yavakuta* form. Add 16 times water to it and boil it until it becomes half.

The contents of *Punarnavastak Kwatha* are *Punarnava* (*Boerhavia diffusa*), *Haritaki* (*Terminalia chebula* Retz), *Nimba* (*Azadirachta indica*), *Daruharidra* (*Berberis aristata*), *Katuki* (*Picorrhiza kurroa*), *Patola* (*Trichosanthes dioica*), *Guduchi* (*Tinospora cordifolia*), *Sunthi* (*Zingiber officinale*). Due to *Laghu* and *Ruksha Guna* this decoction possesses the *Lekhana* property that brings lightness and clears obstruction by removing vitiated *Kapha*. *Kashaya Rasa* absorbs *Kapha* and *Katu Rasa* clears the obstruction of *Kapha*.^[6] *Ushna Virya* does *Abhyantara Swedana Karma* and *Amapachana* as a result of which stickled *Dosha* gets liquified and travels towards nearby opening brings lightness to body. Due to special combination of these drugs, *Shamana* is possible with *Punarnavastak Kwatha*. In addition to it also does bio purification through urination and defaecation by the herbs like *Punarnava* and *Katuki*.

Triphala Guggulu:

Method of preparation: Take *Triphala*, *Pippali* and *Guggulu* in 3:1:5 ratio. At first, *Triphala Kwatha* was prepared and *Guggulu* was triturated with it. Then add *Pippali Churna* as *Prakshepa Dravya*. Mix it well until it becomes *Avaleha* form. Then make tablet and dry it for use.

Triphala Guggulu helps early wound healing and also reduces *Paka*, *Kleda* and along with remarkable reduction in pain in the wound. It contains *Amalaki* (*Emblica officinalis*), *Haritak* (*Terminalia chebula* Retz), *Bibhitaki* (*Terminalia bellirica*), *Pippali* (*Piper longum*) and *Guggulu* (*Commiphora mukul*).

These constituents contain *Tikta*, *Kashaya Rasa*, *Ushna Virya*, *Katu Vipaka*, *Laghu*, *Ruksha*, *Ushna*, *Tikshna Guna*, *Tridoshahara* and *Shothahara Karma*.

It relieves *Kapha Dosha* due to *Tikta*, *Kashaya Rasa*, *Laghu* and *Ruksha Guna*. It reduces *Vata* and *Kapha Dosha* due to *Ushna Virya*. *Pitta Dosha* is relieved by *Tikta* and *Kashaya Rasa*. It activates *Agni* due to *Ushna Virya*, *Laghu*, *Ruksha Guna* and reduces *Srotarodha* due to its *Ushna*, *Tikshna*, *Laghu Guna* and *Ushna Virya*. *Guggulu* is *Kapha Vatahara*, *Kledahara* and can aid in the treatment of *Sopha* and *Arbuda*. Because of its *Jantughna* property, used to treat infection.^[7] *Guggulu*'s hot potency relieves vitiated *Vata* and prevents *Kleda* from lingering at the site of pathogenesis, reduces *Srotarodha* and aids in wound healing.

Guggulu is also used to treat wounds, lymphadenitis, boils, cyst and other ailments indicating that it possesses antibacterial, anti-inflammatory and wound healing properties. Its constituents have all proven remarkable anti-inflammatory, anti-oxidant and immunomodulatory activity, making it a powerful treatment of choice in inflammatory and infectious illness.

CONCLUSION:

Calcified neurocysticercosis are similar to *Krimija Shiroroga* have better result in *Shamana* medicines and *Panchakarma* therapy over period of 90 days. There were no adverse reaction, complication or side effects recorded during the entire treatment period and it improve patient's quality of life.

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