



# A Case Report on Grade II Oligodendroglioma by Ayurvedic Intervention

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## Abstract

(1) Rationale for this case report: The current treatment modality for oligodendroglioma is surgical intervention and radiation treatment. This case report shows the effective management with Ayurvedic treatment of a case diagnosed as Grade II oligodendroglioma which was posted for resection and chemotherapy. The MRI results after treatment clearly suggest the significant reduction of the Grade II oligodendroglioma. (2) Presenting concerns: A 26-year young lady who was diagnosed with the Grade II oligodendroglioma was admitted in the hospital. She was posted for the excision, resection, chemotherapy and radiotherapy. The features were suggestive of Grade II oligodendroglioma has been diagnostic by MRI. (3) Interventions: Panchakarma procedures including the snehana, svedana, virechana, nasya and kayaseka was started along with internal medications and surgery was deferred because the patient responded positively. (4) Outcomes: The outcome of this case study reveals that there was significant reduction of the Grade II oligodendroglioma. (5) Main lesson(s) from this case report: Non-surgical intervention of Grade II oligodendroglioma demonstrating the reduction. Multiple clinical trials should be conducted to establish this treatment as general treatment for the oligodendroglioma.

**Keywords:** Alternative Therapy, MRI, Tumour

## 1. Introduction

Oligodendrogliomas (from the Greek 'oligo' meaning "few" and 'dendro' meaning "trees") are diffusely infiltrating, usually differentiated gliomas composed of cells that morphologically resemble oligodendroglial cells. They occur primarily in adults (9.4% of all primary brain and CNS tumours), with the average age at diagnosis being 35. Microscopically, they are composed of cells with small to slightly enlarged nuclei and a small amount of eosinophilic cytoplasm. They are often referred to as "fried egg" cells based on their histological appearance. They appear as a monotonous population of mildly enlarged round cells that infiltrate normal brain parenchyma. The exact cause is unknown<sup>1</sup>; however, some studies link oligodendrogliomas with viral causes. Occasional clustering occurs in some families, although the mode of inheritance is not established. Diagnoses of

oligodendrogliomas are confirmed using Computerized Tomography (CT), Magnetic Resonance Imaging (MRI), and Current management options include surgical resection, radiotherapy, and chemotherapy. Oligodendrogliomas may be correlated with and grouped under the *Arbuda* spectrum of conditions according to *Āyurveda*. *ĀcāryaSuśruta* explains that the aggravated *Dosās* vitiate *Māmsa* and produce large, deep-rooted, slowly developing, non-suppurative, and swollen fleshy masses in the affected parts of the body. These are collectively termed as *Arbuda*. Management of *Arbuda* revolves around *Śodhana*, *Lepa*, and internal medications. Repeated *Svedana* (sudation) should be done and the mass should be squeezed many times. If the condition does not improve by these methods, then *Chedana* (excision) of the *Arbuda* should be done.

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## 2. Case Report

A 26-year-old, well-built, non-diabetic, non-hypertensive female presented with a 2-year history of confusion and difficulty in language comprehension associated with numbness and tingling in both arms and a feeling of rejection and anger in life. The patient experienced a sudden non-comprehension of letters and inability to use dining utensils 2 years ago, along with seizure episodes, she consulted a doctor, who diagnosed her case as a grade II oligodendroglioma and advised radiotherapy for three weeks. This showed no progress as the neoplasm continued to steadily grow. Excision of the mass by a left temporo-parietal craniotomy was done in January 2017.

In 2004, she was diagnosed with Grave's disease, and then hypothyroidism. In 2014, she developed depression, which was due to the death of her father. In 2015, she consulted for cannabis dependence. In the summer of 2016, she took a trip to Costa Rica, where she developed fever and malaise. By August 12<sup>th</sup>, 2016, she developed confusion, fever, and headache. At this time, an MRI scan revealed a left temporal lesion interpreted as encephalitis, for which she underwent treatment. On return to Netherlands on September 9<sup>th</sup>, her confused state increased and, on September 14<sup>th</sup>, she was found to have acute psychosis. She does not report any allergies or habits, follows a mixed diet, and her sleep is sound. Bowel, appetite, and micturition are normal and sleep is sound. Neurological examination on admission revealed no abnormalities.

## 3. Clinical Findings

MRI scanning done on July 1<sup>st</sup>, 2017 revealed:

- A post-operative cystic encephalomalacia/pro-encephalic cyst measuring 5.2cm antero-posteriorly x 2.6cm (TR), x 2.6cm (CC) in the left inferior temporal gyrus without any mass effects.
- Left temporo-parietal craniotomy changes.

Examinations of cranial nerves were normal, with normal gait and normal sensibility of the face. These findings suggested the diagnosis of oligodendroglioma.

## 4. Management

The patient was admitted on July 10<sup>th</sup>, 2017. Internal medicines such as *Kāñcanāra Guggulu*, *Gudūcī Sattva*, Septilin tablets, and *Aśvagandha* capsules were started on admission and continued till discharge. *Sarvāṅga Abhyanga* with *Kottamcukkādi Taila*<sup>2</sup> and *Dhānvantara Taila*<sup>3</sup> followed by *Cūrna Pinda Sveda* with *Kottamcukkādi Cūrna* was done for 3 days. *Snehapāna* with *Pañcatiktaka Guggulu Ghrta*<sup>4</sup> followed by *Nādī Sveda* with *Eranda*

*Patrawas* administered for 4 days, after which *Virecana* was induced by *Avipattikara Yoga*<sup>5</sup>. *Nasya* was done for 7 days with 4 drops of *Anutaila*<sup>6</sup> mixed with 8 drops of *Ksīrabala Taila*. *Abhyanga* and *Śirodhāra* with 75% *Brāhmi Taila* and 25% *Kottamcukkādi Taila* was done for 7 days. *Pizhicil* with *Dhānvantara Taila*, *Kottamcukkādi Taila*, and *Pinda Taila*<sup>7</sup>, and *Cūrna Pinda Sveda* with *Kottamcukkādi Cūrna* was done for 3 days.

## 5. Discussion

The exact aetiology of oligodendroma is unknown. They appear as a monotonous population of mildly enlarged round cells that infiltrate normal brain parenchyma. Microscopically, they are composed of cells with small to slightly enlarged nuclei and a small amount of eosinophilic cytoplasm. They are often referred to as "fried egg" cells based on their histological appearance. *ĀcāryaSuśruta* explains that the aggravated *Dosās* vitiate *Māmsa* and produce large, deep-rooted, slowly developing, non-suppurative, and swollen fleshy masses in the affected parts of the body. These are collectively termed as *Arbuda* which can be correlated to oligodendroglioma<sup>8</sup>. Treatment principle involves *Śodhana*, *Lepa*, and internal medications and repeated *Svedana* (sudation) should be done and the mass should be squeezed many times. *Kanchanaraguggulu*, *guduchisatva*, *septilin* and *asvaganda* capsule was started as the internal medications (Tables 1, 2 and 3). The external medications and its actions in this case of oligodendroglioma are discussed below.

Vayu performs the main function of cell division in the body. Whenever this function is altered, the division of cells become improper i.e.; either less or more. The treatment protocol starts with the *sarvangaabhyanga* with *kottamchukaditaila* and *dhanvantaramtailam*. *Dalhana* described the absorption of the medicine to different dhatus in the oleation of whole body (*sarvangaabhyanga*). *Snigdaguna* of the drugs is responsible for the *snehana*, *kledana* and *vishyandana* at cellular level of the body. According to *Bhavaprakasha*, *guruguna* in this *taila* will result in the *vatahara*, *kaphakara*, and *pushtikara* that will alleviate the morbid *vata*dosha and nourishes the body<sup>9</sup>. *Seetaguna* stabilizes the muscles and organs. *Ghrta* induces ketogenesis in body. *Sukshmaguna* helps to enter fine channels *Choorna pinda sveda* with *kottamchukadi choorna* was coming next in the protocol. It suggests the mode of action as an increase of body temperature due to passive heating substantially increases the cutaneous vascular conductance followed by a corresponding increase in systemic conductance.

In any *shodhana* procedure *doshautkleshana* is necessary and is achieved by the *abhyantara snehapana*. In this case *abhyantara snehapana* is done with *panchatikta guggulu ghrta* from 25ml to 70ml on fourth day. Due to its *sookshma* and *anabhisynadi* properties it reaches the minute channels. Since it is *tridosahara*, alleviates the morbid doshas along with control of *vayu*. Followed by *virechana* with *avipattichoorna* for eliminating the morbid doshas.

*Nasya* with *anutailam* and *ksheerabala* was then followed to get the *shiroshodhana*, since nose is considered as the gateway for the *shiras*<sup>10</sup>. Through the lipophilic action of the medicine it crosses the blood brain barrier and reaches the destination. This *nasya* is having a great action upon reducing the monotonous population of enlarged round cells in this case of oligodendrogloma.

*Abhyanga* and *shirodhara* with *Brahmi taila* and *Kottamchukkadi taila*. *Shirodhara* is coming under the *muradini taila*<sup>11</sup>. *Shiras* is having 37 *marmas* (vital points) among the whole 107 *marmas* in the body<sup>12</sup>. *Shiras* itself is the *Sadyopranahara marma*. *Shirodhara* treatment over *Ajnya chakra*.

Penial gland and Medulla oblongata in brain would stimulates *Sahasrara chakra* (the thousand petal lotus, the upper cerebral centre) which controls all *chakras* and give the preferred results.

*Kayaseka* with *Dhanvantara taila*, *Kottamchukkadi taila* and *Pinda taila* was the last in treatment protocol for oligodendrogloma. This will pacify *vata* and *vatakapha* morbidity in the body. Oil which is hot when poured to the body to produce a mode of sweating.

**Table 1.** Treatment carried out for the patient

Treatment	Ingredients	Method of Preparation	Method of Administration	Duration of Treatment
Sarvānga Abhyanga with Kottamcukkādi Taila and Dhānvantara Taila	<p><b>Kottamcukkādi Taila:</b> Kottam (Kustha), Chukku (Śunthī), Vayambu (Vacā), Śigru, Laśuna, Kārtotti (Himsra), Devadruma, Siddhārtha, Suvahā, Tila, Dadhi, Cincā Rasa</p> <p><b>Dhānvantara Taila:</b> BalāMūla, Godugdha, Yava, Kola, Kulattha, Daśamūla (Blva, Agnimatha, Śyonāka, Pātala, Gambhāri, Śālaparni, Prśniparni, Brhatī, Kanthakāri, Goksūra), TilaTaila, Medā, Mahāmedā, Devadāru, Mañjisthā, Kākoli, Ksīrakākoli, Raktacandana, Śāribā, Kustha, Tagara, Jivaka, Rsabhaka, Saindhava, Kālānusāri, Saileya, Vacā, Agarū, Punarnavā, Aśvagandha, Vāri (Śatāvāri), Ksīraśukla, Yastī, Haritaki, Bibhītaka, Āmalakī, Śatāhva, Māsaparni, Mudgaparni, Elā, Tvak, Patra</p>	<p><b>Kottamcukkādi Taila:</b> Ingredients are added to 4 parts of <i>Sneha</i> and cooked until the <i>kalka</i> does not stick to the vessel. It is then taken out and strained.</p>	<p>The patient lay supine on the <i>Droni</i>. <i>Kottamcukkādi Taila</i> and <i>Dhānvantara Taila</i> were mixed together and warmed. The mixture was taken and <i>Abhyanga</i> (massage) was done for 45 minutes using the palms.</p>	3 days

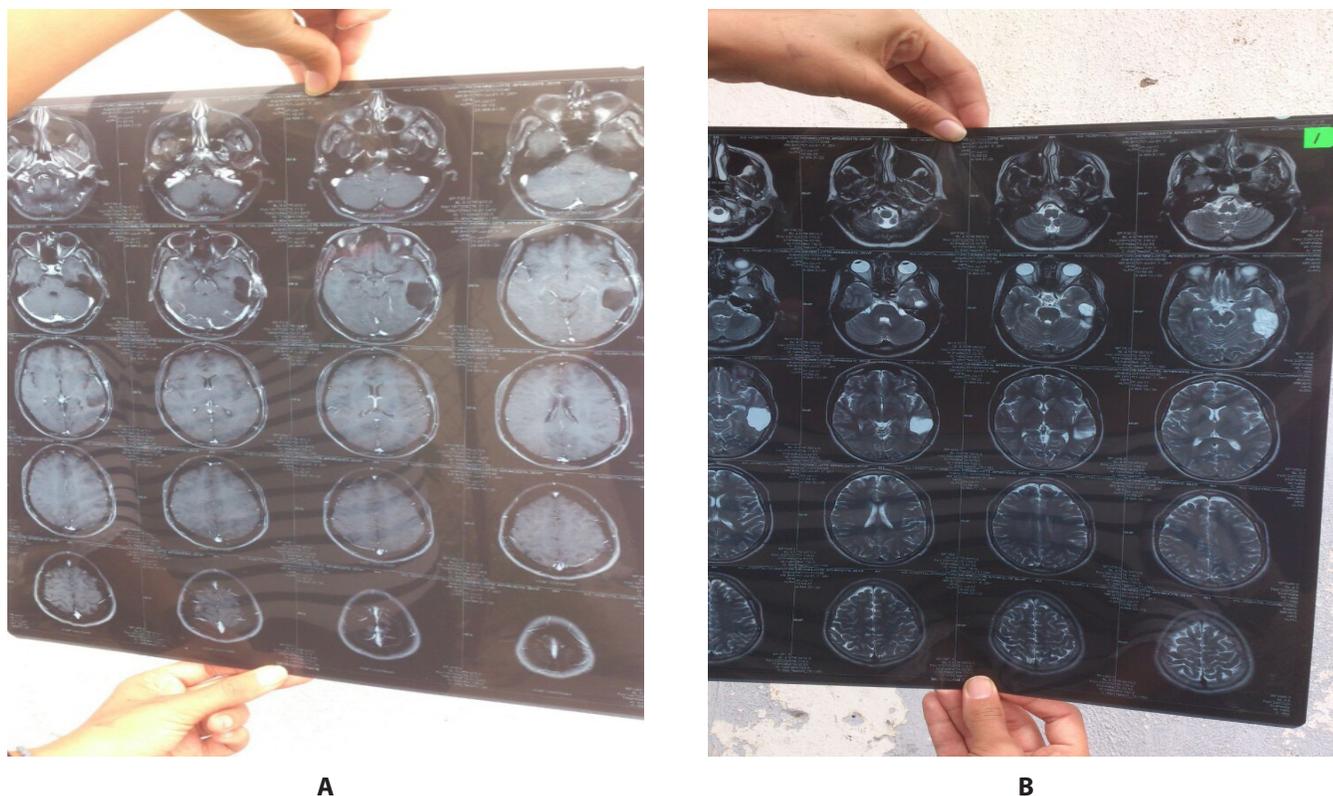
<p><i>CūrnaPindaSveda with Kottamcukkādi Cūrna</i></p>	<p><i>Kottam (Kustha), Chukku (Śunthī), Vayambu (Vacā), Śigru, Laśuna, Kārtotti (Himsra), Devadruma, Siddhārtha, Suvahā, Tila,</i></p>	<p><b>Preparation of the Cūrna:</b> The ingredients are taken equally, cleaned, and dried properly. Each ingredient is powdered and sieved individually, and the resultant fine powders are mixed together.</p> <p><b>Preparation of the Pottali (boluses):</b> Equal quantities of the <i>Cūrna</i> are placed into a 4-piece cloth and folded until they attain the shape of a bolus.</p>	<p>The patient lay supine on the <i>Droni</i>. The <i>Pottali</i>s were placed on a frying pan and heated. <i>SarvāngaAbhyanga</i> (full-body massage) was done with <i>Kottamcukkādi Taila</i> and <i>Dhānvantara Taila</i>. The heated boluses were applied over the entire body for 45 minutes.</p>	<p>6 days</p>
<p><i>Snehapāna with Pañcatikta GugguluGhrta</i></p>	<p><b>PañcatiktaGuggulu Ghrta</b> <i>Nimba, Amrta, Vrsa, PatolaNidigdhika, Pāhā, Vidanga, Suradāru, Gajopakulya, Dviksāra, Nāgara, Niśā, Miśi, Cavya, Kusthā, Tejovatī, Marica, Vatsaka, Dīpyaka, Agni, Rohinī, Āruskara, Vacā, Kanamūla, Mañjistha, Ativisā, Visa, Yavāni, ŚodhitaGuggulu</i></p>	<p>Ingredients 1-5 are taken in 10 Pala and boiled in 1 <i>Drona</i> of water and reduced to 1/8. One <i>Prastha</i> of <i>Ghrta</i> and a paste of ingredients 6-29 and 5 <i>Pala</i> of <i>Guggulu</i> are added to the decoction and ghee is prepared.</p>	<p><b>Day 1:</b> 25mL <b>Day 2:</b> 40mL <b>Day 3:</b> 50mL <b>Day 4:</b> 70mL</p>	<p>4 days</p>
<p><i>Virecana with Avipattikara Yoga</i></p>	<p><b>Avipattikara Yoga</b> <i>Śunthī, Marica, Pippali, Tvak, Patra, Ela, Ambhoja, Krmighna, Āmalaki, Trvrt, sugar</i></p>	<p>Ingredients are taken and powdered. An equal quantity of sugar is added.</p>	<p>6g was given with warm water to induce <i>Virecana</i>.</p>	<p>1 day</p>
<p><i>Nasya with Anutaila and Ksirabala Taila</i></p>	<p><b>Anutaila Ksirabala Taila</b></p>			<p>7 days</p>
<p><i>Abhyanga and Śirodhāra with Brahmi Taila and Kottamcukkādi Taila</i></p>	<p><b>Brahmi Taila Kottamcukkādi Taila</b></p>			<p>7 days</p>
<p><i>Pizhicil with Dhānvantara Taila, Kottamcukkādi Taila, and Pinda Taila</i></p>	<p><b>Pinda Taila</b> <i>Madhucchistha, Mañjistha, SarjarasaSāriava</i></p>		<p>The patient lay prone on the <i>Droni</i> and the lukewarm oil was poured over the body for 45 minutes.</p>	<p>3 days</p>

**Table 2.** Internal medicine administered

Medicine	Ingredients	Dose	Anupāna	Duration	Manufacturer
<i>Kāñcanāra Guggulu</i>	<i>Kāñcanāratvak, Haritakī, Bibhītaka, Āmalaki, Śunthī, Marīca, Pippalī, Varuna, Ela, Tvak, Patra, ŚodhitaGuggulu</i>	3g	Warm water	10/07/2017 – 01/08/2017	Aryavaidya pharmacy
<i>Gudūcī Sattva</i>	<i>Amrta</i>			10/07/2017 – 01/08/2017	
Septillin	<i>Śodhita Guggulu, Śankha Bhasma, Mahārāsnādi Kvātha, Gudūcī, Mañjistha, Āmalaki, Śigru, Yastimadhu</i>	1 tablet	Warm water	10/07/2017 – 01/08/2017	Himalaya
<i>Aśvagandha</i> capsule	<i>Aśvagandha</i>	300mg	Warm water	10/07/2017 – 01/08/2017	Himalaya

**Table 3.** Timeline and procedure of treatment

Treatment	Date	Procedure done
<i>Kāñcanāra Guggulu Gudūcī Sattva Septillin Aśvagandha capsule</i>	10/07/2017 – 01/08/2017	Patient was admitted on July 10 <sup>th</sup> , 2017 and these internal medicines were started and continued till discharge
<i>Sarvānga Abhyanga with Kottamcukkādi Taila and Dhānvantara Taila Cūrna Pinda Sveda with Kottamcukkādi Cūrna</i>	11/07/2017 – 13/08/2017	Patient was started with panchakarma therapies from second day onwards. The mixture was taken and Abhyanga (massage) was done for 45 minutes using the palms followed by heated boluses were applied over the entire body for 45 minutes. This was continued for 3 days.
Snehapāna with Pañcatikta GugguluGhrta	14/07/2017 – 17/08/2017	The patient was started with ghratapana for 4 days <b>Day 1:</b> 25mL <b>Day 2:</b> 40mL <b>Day 3:</b> 50mL <b>Day 4:</b> 70mL
Virecana with Avipattikara Yoga	18/07/2017	The ghrta intake was stopped and the purgative drug was given on the 5 <sup>th</sup> day after 4 of snehapana.
Nasya with Anutaila and Ksirabala Taila	19/07/2017 – 25/08/2017	After the purgation the patient was started with nasal medication for 7 days.
Abhyanga and Śirodhāra with Brahmi Taila and Kottamcukkādi Taila	02/08/2017 – 04/08/2017	The patient was feeling better and starts the kayaseka for the last 3 days.
Kayaseka with Dhānvantara Taila, Kottamcukkādi Taila, and Pinda Taila	02/08/2017 – 04/08/2017	The patient was feeling better and starts the kayaseka for the last 3 days.



**Figure 1.** MRI scans before (A) and after (B) treatment

## 6. Conclusion

The present study shows the management of *arbudachikitsa* which was designed and it was followed in the oligodendroglioma patient. The *arbuda* spectrum of conditions mentioned by Acharya Sushruta can be taken as a general guideline to understand the path physiology of oligodendroglioma. Highly significant result was obtained in treating the Grade II oligodendroglioma. Area of hyper intensity and subtle swelling left temporal without diffusion restriction or staining, hardly changed except possibly subtle decrease in swelling between 24/8 and 13/8. On the first scan already cystic / softened parties dated resistant damage or still under tumor. Major deviations of the left temporal lobe, without staining or diffusion restriction with signs of tissue loss. Normalization of the deviations from glandularparotis. Enlarged pituitary gland, even visible on the external images, but initially less pronounced, dated hypophysitis. Space occupying lesion in the left temporal cerebral part suggesting the Grade II oligodendroglioma. The MRI results after treatment clearly suggest the significant reduction of the Grade II oligodendroglioma which was suggested for the resection and chemotherapy (Figure 1). Based on this data it can be concluded that this Ayurvedic

management is highly significant in the case of Grade II oligodendroglioma. So we can use this Ayurveda treatment for the management of oligodendroglioma. But it is only a single case. Multiple clinical trials should be conducted to establish this treatment as general treatment for the oligodendroglioma.

## 7. Patient Consent

The patient has provided written consent for publication.

## 8. Acknowledgement

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