A Case Report on Grade II Oligodendroglioma by Ayurvedic Intervention

Sundara Raman¹, B. N. Ashwini² and K. Sivabalaji²*

¹Nilgiris Ayurvedic Treatment Centre Pvt. Ltd., Hulical, Coonoor – 643234, Tamil Nadu, India; omsundarayur@yahoo.co.in
²Department of Shalakya Tantra, Amrita School of Ayurveda, Amrita Deemed University, Kollam – 690525, Kerala, India; drashwinibelludi@gmail.com, balajisiva85k@gmail.com

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 oligodendrogial 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; 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 Ayurveda. 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 Svédana, Lepa, and internal medications. Repeated Svédana (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.

*Author for correspondence

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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 12th, 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 9th, her confused state increased and, on September 14th, 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 1st, 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 10th, 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 and Dhānvantara Taila followed by Ăstro Pañcatiktaka Guggulu Ghṛta followed by Pizhiccil with Dhānvantara Taila, Kottamcukkādi Taila, and Pinda Taila and Cūrna Pinda Sveda with Kottamcukkādi Ăstro 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. AcāryaSuśruta explains that the aggravated Dosās vitiate Māṃsa 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 Arbudā which can be correlated to oligodendroglioma. 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 avaganda 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 dhanvantaramtamil. 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 vatadosha and nourishes the body. Seetaguna stabilizes the muscles and organs. Ghṛta 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 ghrita from 25ml to 70ml on fourth day. Due to its sookshma and anabhisynadi properties it reaches the minute channels. Since it is tridoshahara, 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. 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 oligodendroglioma.

Abhyanga and shirodhara with Brahmi taila and Kottamchukkadi taila. Shirodhara is coming under the mudrini taila. Shiras is having 37 marmas (vital points) among the whole 107 marmas in the body. Shirodhara treatment over Ajnya chakra.

Penial gland and Medulla oblongata in brain would stimulates Sahastrara 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 oligodendroglioma. 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.

| Treatment | Ingredients | Method of Preparation | Method of Administration | Duration of Treatment |
|-----------|-------------|-----------------------|--------------------------|----------------------|
| SarvāṅgaAbhyanga with KottamcukkādiTaila and Dhānvantara Taila | Kottamcukkādi Taila: Kottam (Kustha), Chukku (Śunthī), Vayambu (Vacā), Śigru, Laśuna, Kārtotti (Himsra), Devadruma, Siddhārtha, Suvahā, Tila, Dadhi, Cincā Rasa | Ingredients are added to 4 parts of Sneha and cooked until the kalka does not stick to the vessel. It is then taken out and strained. | The patient lay supine on the Droni. Kottamcukkādi Taila and Dhānvantara Taila were mixed together and warmed. The mixture was taken and Abhyanga (massage) was done for 45 minutes using the palms. | 3 days |
| Dhānvantara Taila: BalāMūla, Godugdha, Yava, Kola, Kulanttha, Daśamūla (Blva, Agnimatha, Śyōnāka, Pātala, Gambhāri, Śālaparni, Prśniparni, Brhati, Kanthakāri, Gokṣūra), TilaTaila, Medā, Mahāmedā, Devadāru, Mahjisthā, Kākoli, KṣiraKākoli, Raktacandana, Śāribā, Kustha, Tagara, Jivaka, Rśabhaka, Saindhava, Kālānusāri, Saileya, Vacā, Agaru, Punarnavā, Aśvagandha, Vāri (Śatōvari), Kṣiraśukla, Yasti, Hariṭaki, Bibhītaka, Āmalaki, Śatāhva, Māsaparni, Mudgaparni, Elā, Tvak, Patra | | | |
| | Kottamcukkādi Taila: | | | |
**CūrnaPindaSveda with Kottamcukkādi Cūrna**

Kottam (Kustha), Chukku (Śunthī), Vayambu (Vacā), Śigru, Laśuna, Kārtotti (Himsra), Devadruma, Siddhārtha, Suvahā, Tila,

**Preparation of the Cūrna:**
The ingredients are taken equally, cleaned, and dried properly. Each ingredient is powdered and sieved individually, and the resultant fine powders are mixed together.

**Preparation of the Pottalī (boluses):** Equal quantities of the Cūrna are placed into a 4-piece cloth and folded until they attain the shape of a bolus.

| Preparation | Ingredients | Details |
|-------------|-------------|---------|
| Cūrna       | Kottam (Kustha), Chukku (Śunthī), Vayambu (Vacā), Śigru, Laśuna, Kārtotti (Himsra), Devadruma, Siddhārtha, Suvahā, Tila, | The patient lay supine on the Droni. The Pottalīs were placed on a frying pan and heated. SarvāngaAbhyanga (full-body massage) was done with Kottamcukkādi Taila and Dhānvantara Taila. The heated boluses were applied over the entire body for 45 minutes. |

**Snehapāna with Pañcatikta GugguluGhrta**

**PañcatiktaGuggulu Ghrta**

Nimba, Amrta, Vrśa, PatolaNidigdhika, Pāh, Vidanga, Suradāru, Gajopakulya, Dvikāra, Nāgara, Niśā, Miśi, Cavya, Kusthā, Tejovati, Marica, Vatsaka, Dipyaka, Agni, Rohini, Āruskara, Vacā, Kanamūlo, Manjistha, Ativisā, Visa, Yavāni, ŚodhitaGuggulu

Ingredients 1-5 are taken in 10 Pala and boiled in 1 Drona of water and reduced to 1/8. One Prastha of Ghrta and a paste of ingredients 6-29 and 5 Pala of Guggulu are added to the decoction and ghee is prepared.

| Day 1 | 25mL |
| Day 2 | 40mL |
| Day 3 | 50mL |
| Day 4 | 70mL |

**Virecana with Avipattikara Yoga**

**Avipattikara Yoga**

Śunthī, Marica, Pippali, Tvak, Patra, Ela, Ambhoja, Krmighna, Āmalaki, Trvrt, sugar

Ingredients are taken and powdered. An equal quantity of sugar is added. 6g was given with warm water to induce Virecana.

| Day 1 | 1 day |

**Nasya with Anutailla and Ksīrabala Taila**

**Anutailla**

Ksīrabala Taila

7 days

**Abhyanga and Śirodhāra with Brahmi Taila and Kottamcukkādi Taila**

**Brahmi Taila**

Kottamcukkādi Taila

7 days

**Pizhiccil with Dhānvantara Taila, Kottamcukkādi Taila, and Pinda Taila**

**Pinda Taila**

Madhuccchista, Manjistha, SarjarasaSāriva

The patient lay prone on the Droni and the lukewarm oil was poured over the body for 45 minutes.

3 days
### Table 2. Internal medicine administered

| Medicine            | Ingredients                                                                 | Dose | Anupāna       | Duration               | Manufacturer                  |
|---------------------|------------------------------------------------------------------------------|------|---------------|------------------------|-------------------------------|
| Kāñcanāra Guggulu   | Kāñcanāratvak, Haritaki, Bibhítaka, Āmalaki, Śunthi, Marica, Pippali, Varuna, Ela, Tvak, Patra, ŚodhitaGuggulu | 3g   | Warm water    | 10/07/2017 – 01/08/2017 | Aryavaidya pharmacy           |
| Gudūcī Sattva       | Amṛta                                                                        |      |               | 10/07/2017 – 01/08/2017 |                               |
| Septillin           | Śodhita Guggulu, Śankha Bhasma, Mahārāṣṇādi Kvātha, Gudūcī, Mañjīsthā, Āmalaki, Ṣigru, Yastimadhu | 1 tablet | Warm water    | 10/07/2017 – 01/08/2017 | Himalaya                     |
| Aśvagandha capsule  | Aśvagandha                                                                   | 300mg | Warm water    | 10/07/2017 – 01/08/2017 | Himalaya                     |

### Table 3. Timeline and procedure of treatment

| Treatment                                      | Date           | Procedure done                                                                                                                                                                                                 |
|------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kāñcanāra Guggulu Gudūcī Sattva Septillin Aśvagandha capsule | 10/07/2017 – 01/08/2017 | Patient was admitted on July 10th, 2017 and these internal medicines were started and continued till discharge                                                                                           |
| Sarvāṅga Abhyanga with Kottamcukkādi Taila and Dhānvantara Taila Ćūrṇa Pinda Sveda with Kottamcukkādi Ćūrṇa | 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 Paṅcatiktika GugguluGṛhta         | 14/07/2017 – 17/08/2017 | The patient was started with ghritapana for 4 days Day 1: 25mL Day 2: 40mL Day 3: 50mL Day 4: 70mL                                                                                                               |
| Virecana with Avipattikara Yoga                  | 18/07/2017      | The ghrita intake was stopped and the purgative drug was given on the 5th day after 4 of snehapana.                                                                                                            |
| Nasya with Anutaila and Kṣīrabala 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.                                                                                                                                |
6. Conclusion

The present study shows the management of 
\textit{arbudachikitsa} which was designed and it was followed in the oligodendroglioma patient. The \textit{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 glandulaparotis. 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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