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Patient Centric Ayurvedic Management of Post-Operative Astrocytoma Following Conventional Therapy: A Case Report

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Abstract

Astrocytoma (WHO Grade III) presents considerable challenges, with conventional treatments causing significant morbidity. *Ayurveda* offers potential complementary approaches to mitigate side effects and support recovery. A 27-year-old male, after craniotomy and 60 Gy radiotherapy for frontoparietal-temporal anaplastic astrocytoma, presented with symptoms including loss of vision, eyelid paralysis, excessive sleep, tremors, anxiety, loss of appetite. Over six months, Ayurvedic management comprising *Shodhana* (*Basti, shirobasti* etc.), *Shamana* medicines (*Brahmi, Punarnava*, herbo-mineral Rasayanas), dietary and supportive therapies were administered.

Improved energy and cognitive clarity; tremor amplitude reduced; anxiety scores improved; episodes of vision returned. Quality of life scores improved across physical, psychological, social domains. This case illustrates potential for Ayurvedic therapies to act as beneficial adjunct in post-operative astrocytoma care. The case highlights improvements in quality of life, symptom relief, and overall well-being achieved through Ayurvedic therapies; further systematic study is needed.

Keywords: Anaplastic Astrocytoma (AA), *Ayurveda*, *Arbuda*, Quality of Life (QOL), *Rasayana*

Introduction:

Primary brain tumors consist of over a hundred different histological varieties, each exhibiting specific clinical behaviors and therapeutic difficulties. Due to their positioning and infiltrative characteristics, brain tumors can severely affect physical, cognitive, and emotional functioning, often to a greater extent than systemic cancers. Despite advancements in oncology that have enhanced prognoses for numerous cancers, survival rates for primary brain tumors have shown minimal improvement over the past few decades. Brain metastases are more prevalent than primary tumors, originating from diverse types of cancers. Lung cancer is the predominant source of brain metastases, followed by breast, colorectal, renal cancers, and melanoma, with melanoma exhibiting the highest likelihood of spreading intracranially. In the age group of adolescents and young adults (15–39 years), brain tumors rank as the second most prevalent cancer and are a major cause of cancer-related deaths[1]. Within this group, Astrocytoma—originating from astrocytic glial cells—display significant differences in their aggressiveness. Anaplastic astrocytoma (AA), classified as a WHO Grade III tumor, is marked by widespread infiltration, nuclear atypia, and increased

mitotic activity. Its rate of occurrence is about 3.5 per million person-years, with a median survival time of 5–7 years. Although surgery, radiotherapy, and chemotherapy are the traditional treatments, these interventions frequently result in long-lasting neurological and psychosocial issues, highlighting the importance of supportive, integrative methods. Ayurveda provides a comprehensive approach designed to boost vitality, minimize side effects from treatments, and enhance overall quality of life.

Case history:

A diagnosed (Anaplastic astrocytoma) and post-operated (Craniotomy) 27-year-old male presented with major complaint of loss of vision, narrowing of eye orbit, paralysis of eyelids, tremors in bilateral hands, anxiety, loss of appetite, burning chest, sour belching, to cancer consultation and treatment unit. He had no significant past medical or familial history and no addictions. On CNS examination, Patient was well conscious and oriented to time, place and person along with intact memory and no difficulty in speech, Normal motor and sensory system findings.

Timeline:

Date	Event	Interpretation
28/09/2023	MRI scan	Signal intensity mass lesion measuring approx. 76x67x80 MM noted in right CG region and right frontoparietal lobe with midline crossing along corpus collosum and patchy peripheral restricted diffusion likely to be tumoral pathology.
7/10/2023	Surgery	Emergency Right fronto temporo parieto craniotomy with gross total excision of SOL with primary duroplasty under general anaesthesia.
7/10/2023	Histopathological examination	Adult type diffuse glioma-astrocytoma in the right fronto parieto-temporal lobe (WHO Grade III).
28/11/2023	Image Guided Radiation Therapy (IGRT)	PTV-60 Gy in 30 fractions
09/03/2024	Onset of Ayurvedic treatment	
22/06/2024	1st follow-up	
6/7/2024	2nd follow-up	
20/07/2024	3rd follow up	
14/08/2024	*Panchkarma* procedure	

Diagnostic assessment:

Patient was diagnosed and operated for Anaplastic Astrocytoma grade III on the basis of histopathological and radiological examination.

Ayurvedic diagnostic approach: The main tools for ayurvedic diagnosis are *Dosha, Dhatu, Srotas, Sroto-dushti, Sthan-sanshrya and Agni.*

Dosha assessment: *Pitta and vata pradhan Tridoshaj* (vata and Pitta dominance), ***Dushya:*** *Majja dhatu*,***Agni:*** *Mandagni (low appetite)*, **Srotas involvement:** *vatavaha*, ***Sthan-sansraya:*** *Mashtishak (Br-*

ain), ***Sroto Dushti:*** *Dushta Granthi* (Brain tumour)

Ashtavidha pariksha **(Eight-fold examination method):**

S.NO.	***Parikshya bhava***	***Parinam(Result)***
1.	*Nadi (pulse)*	*Kaphapittaj*
2	*Mala (stool)*	*Sama*
3	*Mutra (urine)*	*Samanya(normal)*
4	*Drika (eyes and vision)*	*Samanya(normal)*
5	*Sparsha (tectile sensation/touch)*	*Sheeta*
6	*Shabda (voice /speech)*	*Spastha*
7	*Aakriti (build/appearance)*	*Drudha (well built)*
8	*Jivha (tongue)*	*Aamavrta(coated)*

Therapeutic interventions:

Ayurvedic interventions were begun according to vitiated doshas, dhatu, Prakruti, Bala, Vaya of patient, as he approaches to cancer OPD. Patient was treated with *Shaman chikitsa* (internal herbal and Herbo-mineral medicine) and *Shodhan chikitsa (Panchkarma procedure like Sarvang snehan, Svedana, Basti* and *Shiro Basti.* First prescription was designed for 15 days and patient was informed for next follow up. This entire duration of treatment was given for 8 months to patient.

Table: Therapeutic plan

S.no.	**Interventions**	**Follow-ups**			
		1st	**2nd**	**3rd**	**4th**
1.	Decoction of *Punarnava panchang churna 5 gm* and *Brahmi churna 5 gm* (twice a day, empty stomach)	+	+	+	+
2.	Combination of *Brahmi Vati 125 mg, Smriti Sagar Ras 125 mg, Mukta Pishti 50 mg,Vacha churn 1 gm* and *Yogendra Ras 50 mg* with (twice a day with Anupan of Bramhi Ghrit 5 gm)	+	+	+	+
3.	*Capsule Ras sindoor 100 mg* (twice a day with milk)	+	+	+	+
4	*Syp m liv* (15 ml twice a day before food)	+	+	+	+
5	*Punarnasav liv* (15 ml twice a day after food)	+	+	+	+
6	*Kumaryasav(*15 ml twice a day after food)	+	+	+	+
7	*Triphala churna 5gm* (twice a day for eye wash*)*	+	-	-	-
8	*Chitrkadi vati (250 mg twice a day with water)*	+	-	-	-
9	*Syp m vasaco* (15 ml twice a day)	+	-	-	-
10	*eye tone eye drops*	+	-	-	-
11	*Panchamriut parpati 125 mg* (twice a day with butter milk)	+	+	+	+

12	*Sarvang abhyanga and swedan* *Anuvasan basti with dashmool tail + nirooh basti* (*panchtikta ksheer basti*) for 7 days *Shirobasti ksheerbala tail* for 7 days	-	-	-	+

Clinical outcomes:

Over six months of Ayurvedic treatment, the patient reported: Significant Improvement in paralysis of eyelids, tremors in bilateral hands, loss of appetite, burning chest, sour belching and energy level. Enhanced emotional well-being and resilience, improvement in anxiety and quality-of-life. Before treatment, the patient exhibited incomplete closure of the both eyelid with a lagophthalmos gap of 6 mm, weak orbicularis oculi muscle power, reduced blink reflex. Following treatment, marked clinical improvement was observed with reduction of lagophthalmos to 1 mm, restoration of near-complete eyelid closure and improved blink reflex.

Quality of life was assessed using the EORTC QLQ-C30 along with the brain tumour–specific QLQ-BN20 module. All raw scores were linearly transformed to a 0–100 scale. For the QLQ-C30, higher functioning and global health scores reflect better quality of life, whereas higher symptom scores indicate greater symptom burden.

Table no: Quality of life

S.NO		**Parameters**	**Average score Before treatment**	**Average score After treatment**
1.	**Functional Scale**	Physical Functioning	53.33	86.7
		Role Functioning	50	66.6
		Emotional Functioning	33.33	58.33
		Cognitive Functioning	16.66	100
		Social Functioning	66.6	66.6
2.	**Symptomatic Scale**	Fatigue	66.6	00
		Nausea/Vomiting	16.66	00
		Pain	33.3	00
		Dyspnoea	0	00
		Insomnia	100	00
		Appetite Loss	66.6	00
		Constipation	66.6	00
		Diarrhoea	00	00
		Financial Difficulties	00	00
3	**Global QOL**		16.66	50

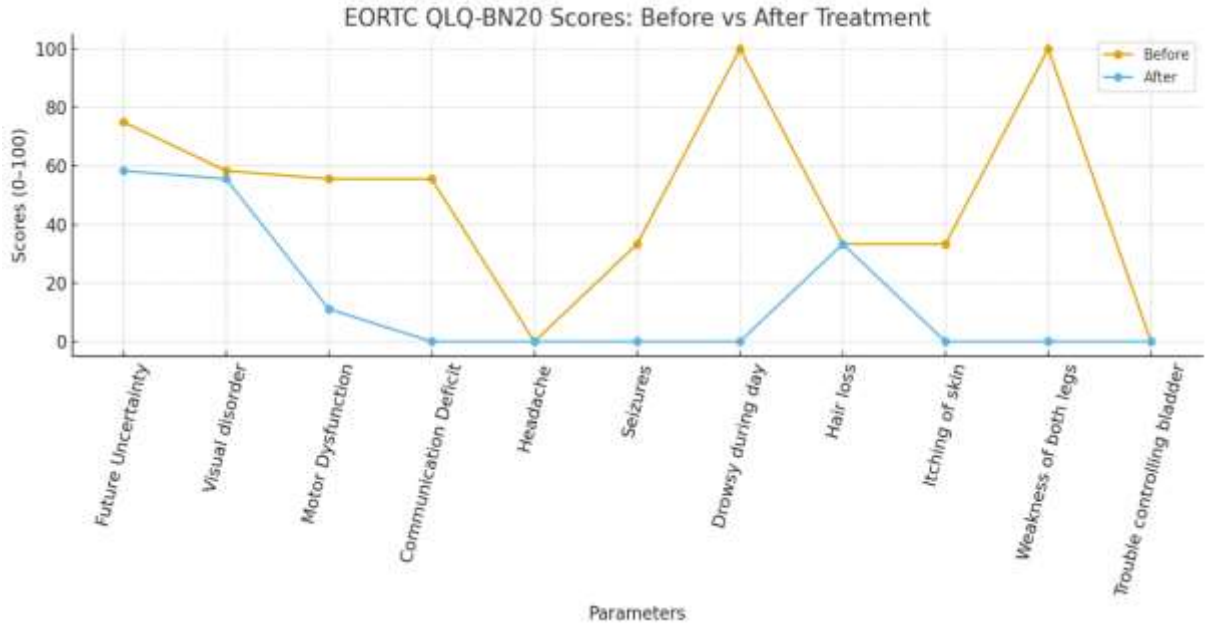


Figure 1 Comparison of before and after treatment scores of EORTC QLQ BN20.

Anxiety score: The Hamilton Anxiety Rating Scale (HAM-A) total score reduced from 21 before treatment to 5 after treatment, indicating a marked reduction in anxiety severity.

Table no Anxiety score

S.no.	Parameters	Before	After
1	Future Uncertainty	75	58.33
2	Visual disorder	66.66	55.55
3	Motor Dysfunction	55.55	11.11
4	Communication Deficit	55.55	00
5	Headache	00	00
6	Seizures	33.33	00
7	Drowsy during day	100	00
8	Hair loss	33.33	33.33
9	Itching of skin	33.33	00
10	Weakness of both legs	100	00
11	Trouble controlling bladder	00	00

Discussion:

Despite advances in neurosurgical and radiation techniques, long-term survival and quality of life often remain compromised. Several crucial factors play an important role in management of disease including improved quality of life, symptomatic relief, and prevention of recurrence. This case contributes in this domain by managing the toxic effects of conventional treatment of AA and prevention of recurrence. The treatment approach was planned to address both systemic imbalance and neurocognitive dysfunction through a combination of **Śodhana**, **Śamana**, and **Rasāyana** therapies. Śodhana therapy, particularly *Basti*, was selected due to the predominance of Vata-related symptoms such as eyelid paralysis, tremors, and anxiety. Existing literature suggests that Basti may support detoxification, improve neuromuscular

tone, and modulate systemic homeostasis, which aligns with the symptomatic changes observed in this case, so it was very effective to subside the tremors. *Basti Chikitsa* may help cancer patients live longer and experience fewer side effects from radiation and chemotherapy, as well as from the disease itself[2].
Shirobasti and other Shamana therapies were incorporated to address cranial symptoms and psychological disturbances. The procedure may influence intracranial hemodynamic, promote relaxation, and modulate neurochemical pathways, thereby supporting improvements in anxiety, sleep, and tremors. *Sukhoshna Dravya* is typically used for *Shirobasti,* which produces vasodilation by stimulating the efferent blood vessels. *Basti Dravya* creates pressure on the skull, which calms the patient and has a calming effect. Pressure relaxes muscles and nerve endings, enhances the brain's supply of fresh oxygen and glucose, and promotes blood circulation. This procedure increases the secretion of serotonin and melatonin by the pineal gland. So, it was helpful in management of anxiety, headache and seizures[3].
The focus of treatment was to prevent the recurrence of AA, for that tailored *Medhya drugs* were selected which can cross the Blood Brain Barrier and destroys the micro environment of cancer and maintain normal functioning of brain tissue. Brahmi (*Bacopa Monniera (L) Wettst*) was given to the patient in form of *Churn*, *Vati* and *Ghrit* twice a day because some studies showed Bacopa inhibits the release of inflammatory cytokines from microglial cells and inhibits enzymes associated with inflammation in the brain[4] along with this it has cytotoxic potential too[5].Thus bacopa may reduce the inflammation in the brain. *Yogendra Ras, smriti Sagar Ras* were administered as an adjuvant treatment for anxiety, neuroprotective purpose and to avoid the recurrence
In post operative cases of astrocytoma or any other carcinoma, the micro environment persists event after conventional management. So, the chances of recurrence are unavoidable. In this case, to destroy the micro environment, *Punarnava Panchang* decoction twice a day and *Punarnavasav* was intervened because studies demonstrated that the herbal drug *Punarnava* (*Boerhaavia diffusa L*) has cytotoxic properties[6]. Adjunctive formulations like *Kumaryasava*, *M-Liv*, and *Panchamrit Parpati* were intended to restore gastrointestinal function, enhance Agni, and relieve radiotherapy-induced dyspepsia—symptoms that significantly influence a patient's perceived well-being.[7]. The therapies focused on restoring balance, enhancing immunity, and improving the body's ability to cope with stress and disease. While Ayurveda does not claim to cure astrocytoma, it complements conventional treatments and supports the patient holistically.
Limitation of this case report: Single-case evidence is insufficient to draw conclusions regarding efficacy or generalizability. Robust clinical trials, mechanistic studies, and standardized integrative protocols are needed to further delineate the role of Ayurveda in neuro-oncology and survivorship care.

Conclusion

This case study demonstrates the role of Ayurveda in managing the post-operative case of astrocytoma through patient-centric approaches. All the domains of quality of life can be significantly improved by managing the side effects of conventional treatment. Future research should explore larger cohorts and randomized controlled trials to validate these outcomes. Ayurveda's emphasis on individualized care and holistic wellness offers valuable adjunctive options in neuro-oncology.

Table 1*(Hamilton's anxiety score):*

s.no.	Parameter	Before treatment Score	After treatment Score
1	Anxious mood	3	0
2	Tension	2	1
3	Fear	1	1
4	Insomnia	2	1
5	Intellectual	3	0
6	Depressed mood	1	0
7	Somatic(muscular)	1	1
8	Somatic(sensory)	2	1
9	Cardiovascular symptoms	0	0
10	Respiratory symptoms	0	0
11	Gastrointestinal symptoms	2	0
12	Genitourinary symptoms	1	0
13	Autonomic symptoms	2	0
14	Behaviour at interview	1	0
	TOTAL SCORE	21	05

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