



Ayurvedic Management of Pangu [Paraplegia]- Post Surgical Case of Intra Medullary Ependymoma-A Case Report

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KEYWORDS

Arbuda, Intra medullary ependymoma, Pangu, Parplegia, Panchakarma

ABSTRACT:

BACKGROUND: Ayurveda defines health as the balance of Tridosha, Agni, Saptha dhatus, Mala, Prasanna-Atma-Indriya and Manas. The normal role of Vata is to regulate motor and sensory systems, and its imbalance leads to a decline in these functions. Pangu is a disease caused by vitiated Vata. It is described among 80 Vata Rogas. The disease originates in the Kati region, possibly involving Katyasrita Vata that is Apana Vayu along with Vyana Vata.

Paraplegia involves the paralysis of the lower extremities. Although weakness in the lower limbs may arise from peripheral nerve or muscle diseases, the terms paraparesis and paraplegia are typically used to describe manifestations resulting from lesions in the dorsal and lumbosacral region of the spinal cord.

OBJECTIVE: To evaluate the impact of Ayurveda treatment, comprising of external Panchakarma therapies and internal medications in management of Pangu (Paraplegia), post-surgical case of intra medullary ependymoma.

METHODOLOGY: Here is case report of patient, 45 years old female presented with complaint of low back pain, who was diagnosed with Intra medullary ependymoma. She underwent surgery of D9-D10 laminectomy and total excision of space occupying lesion. Post-surgically she developed pain in low back and weakness of both lower limbs, she was unable to walk without support. She was admitted and treated in lines of Pangu.

RESULTS: Significant improvement was observed in complaints of weakness of both lower limbs and reduction in low back pain. Initially Muscle power was 3/5 in bilateral lower limbs and at the time of discharge it was 5/5. At the time of discharge pt was able to walk without support. demonstrating the potential of Ayurveda therapies in managing the condition.

CONCLUSION: Pangu / paraplegia developed as a result of postsurgical excision of Intra medullary ependymoma was treated successfully. This case highlights the potential of Ayurveda Panchakarma therapies and internal medications, as effective interventions in managing Pangu.

INTRODUCTION:

Pangu is a disease caused by vitiated Vata. It is described among 80 *Nanatmaja Vata rogas*⁽¹⁾. The disease originates in the *Kati* region, possibly involving *Katyasrita Vata* and affecting *Apana Vayu*⁽²⁾. *Apana Vayu* in the *Kati* region along with *Vyana Vayu* affects *Snayu*

Kandara of lower limbs causing weakness. If weakness or paralysis develops in one leg it is called *Khanja* where as in both is called as *Pangu*⁽³⁾. Paraplegia involves the paralysis of the lower extremities. In adults, intramedullary spinal tumors comprise 5-10% of all spinal tumors and the most commonly encountered



intramedullary spinal tumors are Ependymomas, Astrocytomas, and Hemangioblastomas. Ependymoma is a common primary glial neoplasm of the spinal cord and filum terminale constituting 50-60% of intramedullary cord neoplasms. Intramedullary spinal cord ependymomas (IMSCEs) are rare, mostly benign tumours that arise from the ependyma of the ventricular system. IMSCEs develop with a peak incidence in adults in their fourth decade of life. Macroscopically, IMSCEs may contain cystic, haemorrhagic, necrotic, or calcified areas, while microscopically they appear as a sharply demarcated tumour and perivascular pseudo rosettes; tumours are positive for S100, glial fibrillary acidic protein, and vimentin. The 2021 World Health Organization (WHO) classification of central nervous system (CNS) tumours divides ependymomas into 3 grades based on the degree of microscopic malignancy as follows: grade I, comprising sub ependymomas; grade II, comprising myxopapillary ependymomas, which lack anaplastic features, and classic, cellular, papillary, clear cell, tanyctic, and giant cell ependymomas; and grade III, comprising anaplastic ependymomas.

The clinical presentation of patients with IMSCEs largely depends on the tumour's location, size, and progression patterns; the most common symptoms include pain, weakness, sensory impairments, gait abnormality, and sphincter dysfunction, which may also be debilitating. Prompt clinical evaluation with magnetic resonance imaging (MRI) allows early treatment planning that correlates with optimal outcomes. Surgical resection or biopsy is often needed for confirmation of diagnosis and relief of symptoms, as well as guiding adjuvant systemic therapeutic approaches to improve the patient's prognosis and quality of life⁽⁴⁾. In this case, patient developed Paraplegia after surgical removal of the tumor, which in *Ayurveda* can be contemplated to *Pangu* and was treated under the lines of *Vatavyadhi Chikitsa*.

CASE DESCRIPTION

A 45year old female patient approached JSS Ayurveda Hospital on 9/07/23 with complaints of pain in lower back region associated with weakness in both lower limbs and difficulty in walking without support since 2 weeks.

HISTORY OF PRESENT ILLNESS:

A female patient aged 45years, presented with complaints of pain in lower back region associated with weakness in both lower limbs and difficulty to walk without support approached Panchakarma OPD of JSSAMC&H, Mysuru on 09/07/23. Patient gives H/O pain in lower back region radiating to both lower limbs, she consulted allopathic physician and underwent necessary investigation and was diagnosed with INTRA MEDULLARY EPENDYMOMA. Underwent surgery of D9-D10 Laminectomy and total excision of Space Occupying Lesion before 2 weeks. Post surgery ambulation not achieved completely & had presented with above complaints.

HISTORY OF PAST ILLNESS:

N/K/C/O Diabetes mellitus or Hypertension.

H/O D9-D10 laminectomy and total excision of Space Occupying Lesion before 2 weeks.

PERSONAL HISTORY:

Bowel: Constipated once in 2 days

Micturition: 3-4/1-2 times D/N

Sleep: Disturbed

Diet: Mixed diet

GENERAL EXAMINATION:

BP - 130/80mm Hg

PR - 78 bpm

RR - 20times/min

Height - 182 cm

Weight - 74 kgs

ASHTA STHANA PARIKSHA:

NADI- 78bpm, *Vatapitta*

MALA- Constipated once in 2 days

MUTRA- 3-4/1-2 times D/N

JIHVA- *Lipta*

SHABDA- *Prakruta*

SPARSHA- Detailed in examination

DRIK - *Prakruta*



AKRITI-Madyama

ANKLE JERK: +2

NERVOUS SYSTEM EXAMINATION:

BABINSKI'S SIGN: Positive.

HIGHER MENTAL FUNCTION:

SENSORY SYSTEM EXAMINATION:

- Consciousness - Conscious
- Orientation - Well oriented to time, place and person
- Behavior - Cooperative
- Attentiveness - Attentive
- Memory - Intact

- LIGHT TOUCH: absent
- SUPERFICIAL PAIN: Intact
- JOINT POSITION SENSE: Intact
- VIBRATION: Intact
- TEMPERATURE: Intact.

CRANIAL NERVE EXAMINATION: Intact.

Gastrointestinal system examination-normal.

CO-ORDINATION TEST:

Respiratory system examination-normal.

Finger to nose test: Possible.

Cardiovascular system examination -normal.

Heal to knee test: Not possible.

Table No:01 Time line of the case

MOTOR EXAMINATIONS:

- Tropical changes: Scar present, no bed sores
- Atrophy and Hypertrophy: Absent
- Fasciculation and irritability: Absent
- Contraction and contracture: Absent
- Involuntary movements: Absent
- MUSCLE POWER: RIGHT LEFT
- UPPER LIMB 5/5 5/5
- LOWER LIMB 3/5 3/5
- MUSCLE TONE:
- UPPER LIMB: Normotonic B/L.
- LOWER LIMB: Mild spastic (+)
- MUSCLE BULK:
- UPPER LIMB: Normal.
- LOWER LIMB: Normal.
- DEEP TENDON REFLEXES:
- BICEP'S: +1
- TRICEP'S: +1
- SUPINATOR: +1
- KNEE JERK: +3

Time line	Events occurred
May-23	Complaints of back pain
Jun-23	Investigation done and was diagnosed with INTRA MEDULLARY EPENDYMOMA.
22-Jun-23	Underwent surgery of D9-D10 Laminectomy and total excision of Space Occupying Lesion
09-Jul-23	Approached Panchakarma OPD of JSSAMC&H. for complaints of pain in lower back region associated with weakness in both lower limbs and difficulty to walk without support (1 st sitting)
9 th to 16 th July 2023	<i>Koshta Shodana and Anulomana</i>
9 th to 13 th July	<i>Ruksha Sweda by Churna Pinda Sweda</i>
14 th to 18 th July	<i>Ruksha Sweda by Dhanyamla Seka</i>
19 th to 26 th July	<i>Vata hara by Abhyanga</i>
27 th July to 7 th August	<i>Brhumana by Shashtikasali Pinda Sweda</i>
17 th July to 7 th August	<i>Vatahara by Matrabasti, Fine stance</i> Smooth walking elicited- steps (heel strike & toe off) was observed. Discharged with prescribed oral medications.



22 nd August	Came for 2 nd sitting, slight weakness in the lower limbs and complains of back pain.
22 nd to 29 th august	<i>Koshta Shodana</i> and <i>Anulomana</i>
22 nd to 24 th august	<i>Ruksha Sweda</i> by <i>Dhanyamla Seka</i>
25 th to 29 th august	<i>Vatahara</i> by <i>Abhyanga</i>
30 th august to 5 th September	<i>Bruhmana</i> by <i>Shashtika Shali Pinda Sweda</i>
30 th august to 5 th september	<i>Vatahara</i> by <i>Matara Basti</i> , discharged with prescribed oral medication and reduction in the complaints and with fine stance and gait improved & able to walk without support. NOTE- <i>Rasa Aushadhis</i> were given for first 1 MONTH. After that, dose tapered to 1 OD & remitted

(12 days)		<i>Mahavisagarba taila</i>
Day1-day7 (7 days)	<i>Koshta shodana & Anulomana</i>	By <i>Gandharvahastadi Eranda Taila</i> 0-0-15ml
Day08-day30 (23 days)	<i>Matra Basti</i>	<i>Dhanwantara Kuzumbu</i> [40ml] <i>Gandarvahastadi Taila</i> [20ml].

Table No:03 Externa therapies of 2nd sitting

NO. OF DAYS	TREATMENT	MEDICINE
Day1-day8 (8 days)	<i>Koshta Shodhana & Anulomana</i>	<i>Gandharvahastadi Eranda Taila</i> 0-0-15ml
Day1-day3 (3 days)	<i>Sarvanga Dhanyamla Seka</i>	<i>Dhanyamla</i>
Day4-day8 (5 days)	<i>Sarvanga Abyanga</i> followed by <i>Nadi Sweda</i>	<i>Ksheera Bala Tailam</i>
Day9-day15 (7 days)	<i>Sarvanga Sastika Shali Pinda Sweda</i>	With application of <i>Mahavisagarba Taila</i>
Day9-day15 (7 days)	<i>Matra Basti</i>	<i>Dhanwantara Taila</i> -30ml <i>Ashwagandha Ghrita</i> -30ml

THERAPEUTIC INTERVATIONS:

Line of treatment adopted is *Samsrista Vata Chikitsa* followed by *Kevala Vata Chikitsa* along with *Shamanoushadis*.

Table no:2 External therapies of 1st sitting

NO. OF DAYS	TREATMENT	MEDICINE
Day1-day5 (5 days)	<i>Sarvanga Churnapinda Sweda</i>	<i>Kolakulathadi Churna</i> + <i>Triphala churna</i>
Day06-day10 (5 days)	<i>Sarvanga Dhanyamla Seka</i>	<i>Dhanyamla</i>
Day11-day18 (8 days)	<i>Sarvanga Abyanga</i> followed by <i>Nadi Sweda</i>	<i>Ksheera Bala Tailam</i>
Day19-day30	<i>Sarvanga Sastika Shali Pinda Sweda</i>	With application of



Table No:04 INTERNAL MEDICATIONS:

SL NO.	MEDICATIONS	DOSE	TIME
1	TAB. BRIHATVAT CHINTAMANI RASA	1-0-1	After food for 50 days
2	TAB. RASARAJA RASA	1-0-1	After food for 50 days
3	MASHATMAGUPTADI KASHAYA	50ml- 0-50ml	After food for 3 months

The primary focus of *Ayurveda* is a personalized approach to *Pangu* on the basis of age of the patient, degree of *Dosha* vitiation, duration of illness, the severity of the disease and strength of the patient. In the first visit initially started with *Koshta Shodana* and *Anulomana* for ama hara by administering *Gandharvahastadi Eranda Taila* internally and externally *Rukshasweda* by *Churna Pinda Sweda* and *Dhanyamla Seka* for 5 days each then once the ama conditions get reduced then treated the *Vata* by *Abhyanga* and *Nadi Sweda* for 8 days, *Bhrumana* by *Shastika Shali Pinda Sweda* for 12 days and *Matrabasti* was given for 23 days for *Vatahara* purpose (drug, dosage, duration given in table no:02). Outcome and improvement assessment based on ASIA scoring mentioned in Table no:8

After 15 days of gap patient readmitted for the mentioned complaints, same protocol was followed for total 15 days. *Koshtashodana* and *Anulomana* done for 8 days, *Amahara* and *Kaphara* by *Ruksha Sweda* by *Dhanyamla* for 3 days, 5 days of *Abhyanga* and *Nadi Sweda* and 5 days of *Bhrumana* by *Shastikasali Pinda Sweda* for 7 days and, *Matra Basti* given for 7 days for *Vataharapurpose* (drug, dosage, duration given in table no:03). Oral and discharge medicines given in Table no:4&5. Outcome of both sittings mentioned in Table

no:6&7. Assessment done according to ASIA scale mentioned in Table No:08

Table No:05 DISCHARGE MEDICATIONS:

SL NO.	MEDICATIONS	DOSE	TIME
1	SUKUMARA GRITA	10ml- 0-10ml	Before Food for one month
2	MASHATMAGUPTADI KASHAYA	50ml- 0-50ml	After food for 1 months

OUTCOME:Table No:06 Outcome of 1st sitting

SL.NO	NO. OF DAYS	OBSERVATION
1	ON 10 th DAY	• Was able to walk with support
2	ON 18 th DAY	• Was able to Stand with support for more than 10 minutes • Fine stance and walk steps (heel strike & toe off)
3	ON 30 th DAY	Fine stance Smooth walking elicited- steps (heel strike & toe off)

Table No:07 Outcome of 2nd sitting

SL NO.	NO. OF DAYS	OBSERVATION
1	ON 3 rd DAY	Pain in lower back region reduced slightly
2	ON 9 th DAY	Muscle power improved in both lower limbs Able to stand without support more than 10min No back pain.
3	ON 18 th day	Fine stance and gait improved & able to walk without support

**ASIA:**

**INTERNATIONAL STANDARDS FOR
NEUROLOGICAL CLASSIFICATION OF SPINAL
CORD INJURY (ISNCSCI)**

Table No:08

ASIA impairment grading

A	Complete	No motor, no sensory, no sacral sparing
B	Incomplete	No motor, sensory only
C	Incomplete	50% of muscles LESS than grade 3 (can't raise arms or legs off bed)
D	Incomplete	50% of muscles more than Grade 3 (Can raise arms or legs off bed)
E	Normal	Motor and Sensory function are normal

SENSORY SUB SCORES: NORMAL

MOTOR SUB SCORES:

Table No:08 Assessment of motor sub scores

	BT	After 1st sitting	After 2nd sitting
ASIA GRADING	A	D	E

RESULTS:

- Significant improvement was observed in complaints of weakness of both lower limbs and reduction in low back pain. Initially patient was in Grade C, after 1st sitting of treatment, she was improved to Grade D and after 2nd sitting of treatment, she got improved to Grade E as per ASIA impairment grading.

- Initially Muscle power was 3/5 in bilateral lower limbs and at the time of discharge it was 5/5.
- At the time of discharge pt was able to walk without support.

MRI REPORTS

1st SCAN-IMPRESSION: (Before laminectomy)

Well defined intradural intramedullary lesion with few tiny intralaminar cystic areas at d9-d10 level as described- ? ependymoma. Lumbar and cervical spondylotic changes with disc bulges as mentioned.(JUNE-2023)

2ND SCAN-IMPRESSION: **D8 to D9 status post laminectomy**

> Focal short segment thinning of dorsal spinal cord opposite to D9 vertebral level with intradural intramedullary enhancing lesion with cystic spaces along the posterior aspect of spinal cord - Likely residual lesion.

> Enhancing thickening in the paraspinous operative bed. (Sept 2023)

3RD SCAN-IMPRESSION(After recovery)

Focal thinning of cord with myelomalacia is noted adjacent to D9 vertebra with adhesion of dura and cord at same level. Otherwise **no significant abnormality noted in present study.** (April 2025)

DISCUSSION:

Line of treatment adopted is *Samsrista Vata chikitsa* followed by *Kevala Vata chikitsa* along with *Shamanoushadis*- various *Ruksha & Snighdha* procedures are adopted alternatively to avoid *Kriya Sankarya*. Initially, *Ruksha Karmas* to remove *Kapha or ama* to reduce stiffness. Further, *Vatasya Upakrama* was adopted with procedures like *Basti, Seka, Abhyanga*. In due course, *Mrudu Koshta Shodhana* with *Eranda Taila* ⁽⁵⁾ was given. Later, *Brumhana* therapies like *shashtika Shalipinda Sweda, Shamanasneha along with Pathya Ahara* improved strength and muscle power. *Dhanwanatra Khuzumbu* ⁽⁶⁾ is *Vishesh Vatahara* consist of *Bala Shatavari Dashamoola Yava Kola Gogrita* etc helps in neurological conditions and *Ashwagandha Ghrita* ⁽⁷⁾ is *Balya*. Thus, this *Yamaka Sneha* was chosen for *Matra Basti*.



Internal Medications like *Bruhatvata Chintamni Rasa*⁽⁸⁾, *Rasaraja Rasa*⁽⁹⁾, *Mashaatmaguptadi Kashaya*⁽¹⁰⁾, *Brihat Vata Chintamani Rasa* is the best *Vatahara Brahmana* drug especially in neurological debilities. It contains *Swarnabhasma*, *Roupya bhasma*, *Abhraka Bhasma*, *Louha Bhasma*, *Pravala Bhasma*, *Muktabhasma*, *Rasasindhura*, *Kumariswarasa* which is *Balya*, *Uttejaka*, *Medya*, *Hrudya*.

Rasaraja Rasa is a *Rasa* preparation mainly having *Parada Bhasma* and *Abhraka Bhasma* which is indicated in all *Vatavyadhi*'s specially indicated in *Pakshaghata* and *Arditha* and is *Balya*. *Mashaatmaguptadi kashayam* explained by Chakradatta is *Vishesha yoga* for *Pakshaghata*. It contains *Masha* which has properties of *Ushna Brumhana*, *Earndamoola* is *Vatakaphashamaka*, *Balamula* is *Balya* and *Vatahara* and *Kapikachu* is *Vatahara*, *Brumhana* property and the *Prakshepaka Dravyas Saindava* and *Hingu* are *Deepana Pachana* and *Vataanulomana*, well suited in the treatment of paralysis.

Sukumara Ghrita⁽¹¹⁾ is a *Ghrita* based formulation, it contains castor oil, milk, and jaggery and *Punarnava*, *Bilva*, *Aagnimanta*, *Patala*, *Gambari*, *Brihati*, *Ashwaganda*, *Eranda*, *Shatavari*, *Nagara* etc are nourishing, strengthening and aphrodisiac in potency. *Sukumara Ghrita* is one of the examples for *Yamaka* type of *Sneha* which contains *Ghrita* and *Eranda Taila* (castor oil) as ingredient. So, it was given during the discharge for *Vathanulomana*, *Rasayana*, *Brahmana Snehana*, *Deepana* effect.

CONCLUSION:

This case study demonstrates the successful management of a case of *Pangu* [Paraplegia] using Ayurvedic treatment. Improvement in muscle power and mobility was observed. On the basis of results observed in this case; it is inferred that, by considering the *Dosha*, *Dushya*, *ama* etc., methodical administration of *Panchakarma* procedure like *Dhanyamla Seka*, *Kasayaseka*, *Shastika Shali Pinda Sweda*, *Anulomana & Matra Basti* along with oral Ayurveda medication are highly effective in the management of *Pangu*.

PATIENT PERSPECTIVE

Patient was satisfied with the given treatment.

PATIENT CONSENT

Written permission for publication of this case study has been obtained from the patient.

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DECLARATION OF GENERATIVE AI IN SCIENTIFIC WRITING

During the preparation of this work the author did not use any AI tool for writing, evaluation or analysis. The author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

CONFLICT OF INTEREST

No conflict of interest in any manner is there to be declared by the author.

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