WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 13, Issue 11, 1914-1926. Case Study ISSN 2277–7105

CLINICAL APPROACH TO ABHIGHATAJA PANGU VATA (CAUDA EQUINA SYNDROME) THROUGH AYURVEDA- CASE STUDY

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Article Received on
18 April 2024,

Revised on 08 May 2024,
Accepted on 28 May 2024

DOI: 10.20959/wjpr202411-32678

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ABSTRACT

Cauda equina syndrome (CES) is a relatively rare clinical syndrome caused by compression of a collection of nerve roots called the cauda equina and can result in significant morbidity if not treated. The most common cause is a herniated lumbar disc. Other pathologic conditions associated with CES include tumors, trauma, spinal stenosis, spinal epidural hematoma, and epidural abscess. CES has been described as a complex of symptoms and signs—low back pain, unilateral or bilateral sciatica, motor weakness of lower extremities, sensory disturbance in saddle area, and loss of visceral function—resulting from compression of the cauda equina. In modern system of medicine, management includes Surgical procedures such as lumbar laminectomy, decompression and micro-discectomy which are costly and prognosis is being poor and all these modalities have their own limitations and complications. In Ayurveda, symptoms of CES can be correlated with Abhighātaja Pangu vāta. An effort has been made in the present study to evaluate the efficacy of Kāla vasti in the conservative management of CES. A case of CES with complaints of weakness of bilateral lower limbs along with numbness, Low back ache and walking difficulty, was treated with Vājigandhādi vasti in Kāla vasti format. Patient was observed for symptomatic improvements based on assessment of ASIA impairment scale, Barthel index score, walking time, and symptoms before and after treatment. Patient was observed for complications during whole course of treatment, no complications were seen. The therapy provided marked relief from weakness, numbness, pain and difficulty in walking. The Ayurvedic management is observed to be effective in Cauda equina syndrome.

KEY WORDS: Abhighātaja Pangu vāta., Cauda equina syndrome, Vājigandhādi Kāla Vasti

INTRODUCTION

Cauda equina syndrome (CES) is a rare but serious neurological condition affecting the bundle of nerve roots at the lower end of the spinal cord. The Cauda equina provides innervation to the lower limbs, and sphincter, controls the function of the bladder and distal bowel and sensation to the skin around the bottom and back passage.[1] The most common cause of compression in 45% of CES is a herniated lumbar intervertebral disc. Other causes include epidural abscess, spinal epidural hematoma, tumor, trauma, spinal stenosis and aortic obstruction.[2] Trauma is an obvious source. Blunt or direct spinal injury through the cauda equina can cause significant injury. Burst fracture of lumbar and/or sacral vertebral bodies with retropulsion of fractured fragments or vertebral subluxation may encroach on the spinal canal and compress cauda equina causing this syndrome.

Cauda equina syndrome (CES) is a relatively rare entity with a prevalence estimated by approximately 1 in 65,000 people. It affects males as equally as females. It is seen in around 3% of lumbar spine disc herniation. Cauda equina syndrome produces a characteristic set of clinical features-1. Lower back pain, 2.Unilateral or bilateral leg pain, 3.Unilateral or bilateral lower limb weakness, 4.Saddle anesthesia, 5.Bladder, bowel or sexual dysfunction. The surgical intervention is the only option for preventing further deterioration and for recovery, either open microdiscectomy or MIS.

CES according to its signs and symptoms can be correlated with Abhighātaja Pangu vāta. According to Ayurveda imbalance in the dosik equilibrium is termed as Roga[3] Among tridosās, Vāta is responsible for all cesta or motor functions. As having the property of locomotion, its dynamic entity, strongest ability to produce disease, worst mortality and majority of its specific disorders in number, more importance and attention is being given to Vāta. As Abhighātaja Pangu vāta is mentioned under 80 Nānātmaja type of Vāta vyādhi', so the provoking factors of Vāta[4] can also be taken as a cause of Pangu Vāta. Management included internal Samana (Pacifying) and Sodhana drugs (Eliminating) along with Vāta hara procedures comprising initial rookshana (Drying), Snehana (Oleation), Swedana(Sudation), Virechana, Vasthi (Medicated retention enema), Brimhana(Nourishing) and Rasāyana (Rejuvenation therapy). This is the case report of Abhighātaja Pangu vāta (Cauda equina syndrome) successfully managed with the principle of Vātavyādhi chikitsa.[5]

CASE REPORT

Patients information

A 55year, old male patient visited OPD No.19369 of Panchakarma department at S.V. Ayurvedic hospital, Tirupati having following complaints:

- Weakness of both lower limbs (R>L) since 9months.
- Low back ache radiating to Right lower limb since 9months.
- Numbness in both lower limbs since 9months.
- Walking difficulty since 9months.
- Bowel and Urinary incontinence since 9months.

History of present illness

Patient was apparently alright before 9months. One day he fallen from bicycle while riding 9months back, then he developed severe low back pain radiating to Right lower limb. Gradually the pain got aggravated, So, he went to an Allopathic hospital and necessary investigations were done. His MRI of LS spine showed disc bulge along with ligamentum flavum hypertrophy at L3-L4 & L4-L5 levels causing spinal canal stenosis with compression of cauda equina nerve roots and mild neural foramina compromise. Patient was evaluated as L3-L4, L4-L5 canal stenosis and planned for surgery. He underwent L3-L4 internal decompression L4-L5 Microscopic discectomy. After surgery, he found no relief from the symptoms. Patient developed Low back pain and weakness of both lower limbs (Rt > Lt) along with numbness. He felt walking difficulty in the form of imbalance and he lost control over bowel and bladder. He had taken Allopathic medication which brought no considerable relief. So, he came to S.V. Ayurvedic Hospital for better treatment.

Past history

H/o Fall from bicycle while riding 9months back.

No H/o HTN/DM/Thyroid /CAD/CVA/Respiratory diseases/etc.

Family history: NO

General examination

Vital signs: Pulse-72/min, RR– 16/min, BP – 120/70 mm hg, Temperature- Afebrile

Weight -75 kg

Height- 5’3”

Built – Well built

Pallor/Anemia-Mild

Investigations

Lab investigation: Hb– 12.7 mg%, ESR – 24 mm/hr, FBS- 92 mg/dl, PPBS-109 mg/dl

MRI lumbar spine

- Disc bulge along with ligamentum flavum hypertrophy at L3-L4, L4-L5 levels causing Spinal canal stenosis with compression of Cauda equina nerve roots and mild neural foramina compromise.

Post surgical

- L3-L4 internal decompression.
- L4-L5 microscopic discectomy was done.

Sapeksha nidana

1. Grdhrasi: In Khañja and Pańgu vāta, first and foremost symptom is paralysis of one or both the lower limbs[6] which may be present in sciatica as a late complication.
2. In Ürustambha patients feel heaviness in their thigh and difficulty in walking. Ürustambha is associated with Jvara, Chardi, Aruci, Agnimāndya, Pāda sadana etc. which are not usually found in Pangu vāta[7] which is common in Ürustambha.
3. In Khalli, the severity of pain is more than that of Grdhrasi. Pain in the pāda, jangha, üru and kara müla is the specific feature of Khalli[8] So, the involvement of upper limbs easily differentiates Khalli from Pangu vāta
4. In Pādaharşa, vitiated Vata along with Kapha produces tingling and numbness in the leg. But the radiating pain is absent here.[9]

Diagnosis

- Considering the symptoms and examinations, the condition was diagnosed as a case of Abhighātaja pangu vāta (Cauda equina syndrome). Written informed consent from patient was taken prior to treatment, Study was carried out by following the good clinical practice.

Assessment

- Walking time: Calculated in seconds per 10 meters on an average of 3 times with or without Support.

- ASIA impairment grading scale[10]
- Barthel index Score[11]

Plan of treatment

- Considering the Diagnosis, patient was treated on the line of treatment of Vāta vyādhi.

Shamana chikitsa given

- Trayodasānga guggulu 1 bid
- Aswagandha churnam 1/2tsp bid
- Balārishta 10ml bid
- Nirgundi tailam and Rheumasap for external application
- Cap. Mahārāja prasārini 21 āvartini 1bid
- Tab. Neurowin 1bid

Sodhana chikitsa given

- Deepana pāchana: Chitrakādi vati 1tid for 3 days
- Sneha pānam with Go ghritam in increasing dose according to Koshta and Agni:
  - 1st day: 30 ml
  - 2nd day: 60 ml
  - 3rd day: 90 ml
  - 4th day: 120 ml
- Sarvānga Abhyanga + Bāshpa swedam for 3days
- Virechana karma done with Payaseranda Tailam (Milk 30ml + Eranda Tailam 30ml)
  - Patient has achieved Madhyama Suddhi
  - Samsarjana krama has been done for 5days
- Mātrā vasthi with Nirgundi tailam– 7 days
- Vājeegandhādi vasti in Kāla vasti format-16days

Vājigandhadi vasti in Kāla vasti format

Table 1: Vājigandhadi Niruha vasti Ingredients.[12]

S. No.	Niruha vasti ingredients	Dose
1	Mākshika	100gms
2	Saindhava lavana	6 gm
3	Eranda Taila	50ml
4	Satapushpa kalka	20gm
5	Vājigandhadi kashāyam	400ml

Table 2: Vājigandhadi anuvāsana vasti ingredients.

S. No.	Anuvāsana vasti ingredients	Dose
1	Saindhava lavana	2 gms
2	Satapushpa	6 gms
3	Vājigandhadi taila	120 ml

Table No. 3: Ingredients of vājigandhādi taila for anuvāsana vasti.

The following medicines used for Taila pāka procedure in mentioned quantity.

S. No.	Ingredients	Quantity
1	Aswagandha	25 kg
2	Bala	25 kg
3	Bilva	25 kg
4	Daśamüla	25 kg
5	Eranda taila	24 litres

Niruha vasti procedure

Asthāpana vasti is done on empty stomach after the evacuation of bowel and bladder. Following the Abhyanga and Svedana, the patient is advised to lie down in left lateral position with folded right leg and extended left leg. After wearing gloves, anal area and enema nozzle are lubricated with oil, and then one-fourth of the enema nozzle is introduced into the anus slowly. Vasti putaka (Plastic bag) is placed on the left hand and compress it with right hand slowly to inject the contents in a single act preventing the entry of air inside the body. The nozzle is removed slowly from the anus and gentle strokes are given on the buttock region of the patient.

Anuvasana vasti procedure

Anuvāsana vasti is done after meal and the patient is advised to evacuate the bowel and bladder. Following the Abhyanga and Svedana, the patient is advised to lie down in left lateral position with folded right leg and extended left leg. Sneha should be heated in a warm water bath to make it lukewarm. Sneha in required quantity should be filled into sterile syringe, any air in the syringe is cleared by pushing piston and a sterilized rubber catheter is fixed to the nozzle of the syringe. After wearing gloves, the physician should lubricate the catheter with oil, also smear the anal area with oil. Then the catheter is introduced into the anal canal in the direction of spine for about 4 to 6 inches. The oil should be pushed into the rectum and catheter is gently pulled out and gentle strokes are given on the buttock region of the patient.

Table No. 4: Vājigandhādi kāla vasti schedule.

Day of treatment	Vasti	Retention time
1st day	Anuvasana	7 hours
2nd day	**Niruha**	15 mins
3rd day	Anuvasana	11 hours
4th day	**Niruha**	15 mins
5th day	Anuvasana	10 hours
6th day	**Niruha**	20 mins
7th day	Anuvasana	7 hours
8th day	**Niruha**	15 mins
9th day	Anuvasana	6 hours
10th day	**Niruha**	20 mins
11th day	Anuvasana	4 hours
12th day	**Niruha**	15 mins
13th day	Anuvasana	9 hrs
14th day	Anuvasana	8 hrs
15th day	Anuvasana	9hrs
16th day	Anuvasana	8 hours

OBSERVATIONS

Table 5: Walking time.

Before treatment (BT)	After treatment (AT)
22.65 secs/10 mts on an average of 3 times with support.	19.56 secs / 10 mts on an average of 3 times without support.

Table 6: Muscle power.

	Right (BT)	Right (AT)	Left (BT)	Left (AT)
Upper limb	5/5	5/5	5/5	5/5
Lower limb	1/5	5/5	1/5	5/5

Table 7: muscle tone.

	Right (BT)	Right (AT)	Left (BT)	Left (AT)
Upper limb	Normal	Normal	Normal	Normal
Lower limb	Hypo tonic	Normal	Hypo tonic	Normal

Table 8: Reflexes.

	Right (BT)	Right (AT)	Left (BT)	Left (AT)
Knee jerk	1+	2+	1+	2+
Ankle jerk	1+	2+	1+	2+
Plantar response	1+	2+	1+	2+

Table 9: Barthel index score.

Activity	Score	Before treatment	After treatment
Feeding	0 = unable	10	10

	5 = needs help cutting, spreading butter, etc., or requires modified diet		
	10 = independent		
Bathing	0 = dependent	0	5
	5 = independent (or in shower)		
Grooming	0 = needs to help with personal care	5	5
	5 = independent face/hair/teeth/shaving (implements provided)		
Dressing	0 = dependent	5	10
	5 = needs help but can do about half unaided		
	10 = independent (including buttons, zips, laces, etc.)		
Bowel	0 = incontinent (or needs to be given enemas)	0	10
	5 = occasional accident		
	10 = continent		
Bladder	0 = incontinent, or catheterized and unable to manage alone	0	10
	5 = occasional accident		
	10 = continent		
Toilet use	0 = dependent	0	10
	5 = needs some help, but can do something alone		
	10 = independent (on and off, dressing, wiping)		
Transfer	0 = unable, no sitting balance	5	15
	5 = major help (one or two people, physical), can sit		
	10 = minor help (verbal or physical)		
	15 = independent		
Mobility	0 = immobile or < 50 yards	5	15
	5 = wheelchair independent, including corners, > 50 yards		
	10 = walks with help of one person (verbal or physical) > 50 yards		
	15 = independent (but may use any aid; for example, stick) > 50 yards		
Stairs	0 = unable	0	5
	5 = needs help (verbal, physical, carrying aid)		
	10 = independent		
	Total score: 0-100	30	95

Table 10: Asia impairment grading.

ASIA impairment scale		
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

Table 11: ASIA impairment scale score.

Variables	Before treatment	After treatment
Motor	60	87
Light touch	80	108
Pin prick	80	108
ASIA- Grade	ASIA- B- Incomplete	ASIA- D- Incomplete

*Ranges for score categories are as follows. Motor: minimum 0, maximum 100; light touch: minimum 0, maximum 112; pinprick: minimum 0, maximum 112.

RESULTS

Patient underwent Ayurvedic IP treatment and he got significant improvement in bilateral lower limb weakness, numbness and wasting. patient got control over bowel habits and micturition completely. Patient was able to walk for the first few days with walker, then with a walking stick, and after that, Patient started to walk without any support.

DISCUSSION

Cauda equina syndrome (CES) is a relatively uncommon condition typically associated with a large, space-occupying lesion within the canal of the lumbosacral spine. This lower motor neuron condition occurs when there is dysfunction of cauda equina, usually occurs due to mechanical compression. The syndrome is characterized by varying patterns of low back pain, sciatica, lower extremity sensory motor loss, and bowel and bladder dysfunction. CES according to its symptoms can be correlated with Abhighātaja Pangu vāta in Ayurveda. Abhighātaja Pangu vāta being a Vāta vyādhi, the general principle of treatment of Vāta vyādhi can be applicable.[14] Pangu vāta can be treated when it is in the acute stage, by using purgative therapy, Enemas with decoctions and oils, hot fomentation and guggulu.[13]

Snehana: In Abhighātaja Pangu vāta, Snehana or oleation therapy is used externally and internally. Externally snehana may be used in the form of Abhyanga.[15]

Svedana: Süla and stambha in the lower extremities are the cardinal symptoms of Abhighätaja pangu väta and is best treated by Svedana cikitsā. Svedana also helps in the liquefaction of the dosa there by assisting clearing the srotas, or else rectifying the mārgāvarana. Among the different forms of svedana procedures, Nadi-sveda, may be efficiently performed in patients of Pangu vāta.

Virécana: Virécana has an important role in the management of Pangu vāta. Vātavyādhi most of the authors mentioned mridu Virécana.[16] Oral administration of Eranda taila along with

milk is ideal for the Virecana purpose. This may help in both Vātānulomana as well as smooth excretion of mala. The Sneha-Virecana clears obstruction in the srotas and relieves Vata vitiation very quickly.

Vasti: Pakvāsaya is the primary location of Vāta dosa. Vyāna and Apāna vāta are vitiated in Abhighātaja Pangu vāta. Mātrā vasti is recommended for daily use in persons afflicted with Vāta disorder.[17] Acārya Caraka mentioned that Kāla vasti includes 16 vasti out of which 10 Anuvāsana and 6 Niruha.[18] Niruha, if given alone without Anuvāsana may provoke Vāta due to its exclusive Sodhana property. Thus, to avoid this adverse effect, Nirüha Vastis are assembled in between Anuvāsana Vastis.[19] Since in case of Kāla vasti, the duration is of 16 days, it is anticipated that these vasti regimen can penetrate into the deeper tissues situated in the body and thus root out even the obstinate Vāta disorders.

In Present study, the Vājigandhādi taila is used for Anuvāsana vasti which contains ingredients having Vātahara properties. The drug used for Nirüha Vasti like Madhu, saindhava, Eranda taila, Satapuspa and Vājigandhādi Kwātha which are also having Vātahara properties. Hence due to Vātahara properties of Vasti drugs adopted in present study, it is effective to treat the Abhighātaja Pangu vāta. Vasti is the best treatment for Vāta dosha as said by Acārya Caraka.[20] By these facts, Vasti is most important among the Panchakarma in the treatment of Abhighātaja Pangu vāta. No other cikitsä has the capacity to pacify and regulate the force of Vata apart from Vasti.[21]

In this patient the main complaints are weakness in bilateral lower limbs associated with numbness and walking difficulty and Low back pain radiating to both lower limbs, which clearly indicated involvement of Vāta Dosa. So, Vasti was planned with Vājigandhādi Niruha and Anuvāsana with Vājigandhādi taila. At the end of treatment, patient found relief from symptoms and time duration of walking time reduced. His walking difficulty also relieved. ASIA impairment scale Grade changed from ASIA-B-Incomplete to ASIA-D-Incomplete and Barthel index score increases from 30 to 95 which is from severe dependency to slight dependency.

CONCLUSION

Cauda equina syndrome results from compression of the spinal cord and nerves/nerve roots arising from L1-L5 levels. The modern medical science has very limited remedies for its treatment. CES can be correlated with Abhighātaja Pangu vāta in Ayurveda. Abhighātaja

Pangu vāta is one of the crippling disorders commonly seen now a days and affecting a large group of the society. Abhighātaja Pangu vāta comes under 80 types of Nānātmaja Vātavyādhi. Due to Abhighāta it vitiates Vyāna Vāyu, The Prakupita vyāna vāyu is considered as the prime factor for the manifestation of Abhighātaja Pangu vāta.

Vājigandhādi taila and Kwātha mentioned in Vātavyādhi Adhikāra of Vangasena Samhita is selected for Kāla vasti in the present study to evaluate its efficacy in the management of Abhighātaja Pangu vāta. All ingredients of oil are having Vāta pacifying property, easily available and also cost effective. In this case, patient is successfully treated with Vājigandhādi vasti in Kāla vasti format. Ayurvedic management done by using Ayurvedic principles can effectively manage critical conditions such as Cauda equina syndrome by improving Patients quality of life. However, this is a single case study, similar studies are needed to be done on a large scale to establish statistical significance of the present line of treatment.

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