

## AYURVEDIC MANAGEMENT OF BROCA'S APHASIA – A SINGLE CASE STUDY

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### ABSTRACT

Aphasia is a condition that robs you of the ability to communicate. It can affect your ability to speak, write and understand. Aphasia typically occurs suddenly after a stroke or head injury. The signs and symptoms of Aphasia may be correlated with diseases such as *Jihwasthamba* and *Ardhita* in Ayurveda. According to Acharya Yogaratanakara, the same principles and methods explained in *Ardhita Chikitsa* have to be followed in *Jihwasthamba*. The present article deals with a diagnosed case of Broca's Aphasia and its management through Ayurveda. Here the line of treatment was not completely on the classical *Ardhita Chikitsa*, prime importance was given to the condition Aphasia. Assessments were taken as before treatment, after treatment, and follow up. Marked relief was noted in symptoms like Aphasia, Higher mental function, Dysarthria and memory. The recovery was promising and worth documenting.

**Keywords:** Broca's aphasia, *Ardhita*, *Jihwa stamba*.

### 1. INTRODUCTION

Aphasia is an impairment of language, affecting the production or comprehension of speech and the ability to read or write. It can be so severe as to make communication with the patient almost impossible, or it can be very mild.<sup>1</sup> Speech impairments especially aphasia syndromes, usually occurs in post-stroke patients. Aphasia affects a person's ability to express and understand written and spoken language. Aphasia is classified regarding the fluency of speech and comprehension. Aphasia with non-fluent speech includes global aphasia, Broca's aphasia and Transcortical motor aphasia. In this Broca's aphasia and Transcortical

motor aphasia is having comprehension and Broca's aphasia lacks repetition. The signs and symptoms of Aphasia can be correlated with diseases such as *Jihwasthamba*<sup>2,3</sup> and *Ardhita*<sup>4</sup> in Ayurveda.

The *Jihwasthamba* is the disorder brought about by aggravated *Kapha* which encircles the *Vata* lodged in the channels of tongue (*Vagvahini sira*) and as a consequence, produces dysfunction of motor activities (like speech defect, aphasia, Dysarthria, Dysphasia, Dysphonia etc) of tongue and difficulty for mastication, drinking, deglutition etc.

According to Acharya Yogaratnakara<sup>5</sup>, *Jihwastamba* chikitsa can follow the same principles and treatment of *Ardhita*, which includes *Nasya*, *Murdhnitaila* etc. Acharya Charaka advocates *Navana*, *Shiro Abhyanga*, *Upanaha*, *Sirovasti*, *Utharabhaktika* *Gritapana* for the management of *Ardhita*. *Jihwastamba* may or may not be a presenting complaint in *Ardhita*. So, in *Jihwastamba Sneha Gandusha Dharanam*, *Pratisarana*, *Nadi Sweda* etc are beneficial.

## 2. MATERIALS AND METHODS

### 2.1. Case Study:

A 61year old male patient came to our OPD with complaints of slurred speech and loss of memory since 10 years. He was a K/C/O CAD and CKD since 3 years and was K/C/O HTN, T2DM, and DL since 6 years under control with medication. He was quite normal before 10 days. That day morning his relatives noticed changes in behavioural pattern such as taking bath several times but with no signs of vomiting, giddiness or other symptoms. Patient also complained of dribbling of food, tea etc while taking breakfast. Immediately he was taken to nearby allopathic hospital, was in ICU for 4 days and took medication for the same. For further treatment he got admitted to our

hospital. A CT scan after 2 days of admission showed hyper intense lesions in left basal ganglia and frontal subcortical areas on T2 weighted and flair images which are hypo intense on T1 weighted images and showing no diffusion restriction also showing areas of blooming within the lesion. Left frontal horn was minimally compressed. The impression was a possibility of subacute Infarct with areas of haemorrhage. On admission he was described as oriented to name and place and not with time. He had non fluent speech with preserved comprehension and no repetition associated with mild dysphonia and dysarthria. This was presented as the main complaint and minimum symptoms of fascial palsy and no other symptoms of post stroke were revealed on preliminary screening.

### 2.2. Personal history:

Bowel- once/day  
Appetite- less  
Micturition- 5-6 / day, 2-3/night  
Sleep- sound  
Diet- mixed  
Exercise- nil  
Addictions- alcoholic, smoking

### 2.3. Dasavidha Pareeksha:

Table 1 Dasavidha Pareeksha

1	<i>Dooshyam</i>	<i>Vata dosha, Rasa rakta dhatu</i>	6	<i>Prakriti</i>	<i>Kapha vatam</i>
2	<i>Desa</i>	<i>Sadharana</i>	7	<i>Vaya</i>	<i>Vardhakyam</i>
3	<i>Bala</i>	<i>Madhyama</i>	8	<i>Satwa</i>	<i>Madhyamam</i>
4	<i>Kala</i>	<i>Varsham</i>	9	<i>Sathmya</i>	<i>Sarvarasam</i>
5	<i>Analam</i>	<i>Mandam</i>	10	<i>Ahara</i>	<i>Madhyamam</i>

### 2.4. Treatment history:

1. T. Ecospirin 15mg 0-1-0
2. T.Amlo2.5mg 1-0-0
3. T.Clopilet75mg 0-1-0
4. T.Febocet40mg
5. T.NephrosaneFort 0-0-5
6. T.Aztor20mg 0-0-1
7. T.Deriphyllin150mg 0-0-1
8. Inj.H Mixtard[30/70] 14-0-8

Patient was advised to continue these medicines during the treatment course.

### 2.5. CNS Examination:

#### I. Speech

- A. Aphasia: preserved comprehension, non-fluent speech, no repetition score: 4/5; dyslexia-absent; Dysgraphia- absent.
- B. Dysphonia: coughing was bovine
- C. Dysarthria: found spastic with lingual sounds affected (T, S) and labial sounds spelt clearly.

#### II. Higher mental functions

Appearance and behaviour : normal  
Attention -4/5

Orientation -2/5  
 Registration -1/3  
 Attention and calculation - 1/5  
 Recall - 1/3  
 Language - 6/9  
 Total score - 15/30  
 Memory: Immediate- intact, short term- impaired, long term- impaired

**III. Gait- Normal**

**IV. Cranial nerves:**

Olfactory, Optic, Oculomotor, Trochlear, Abducens- intact

Trigeminal-

- Clenching- NAD
- Opening of Jaw- NAD
- Side to side movement of jaw- NAD
- Jaw Jerk- NAD
- Corneal reflex- NAD

**VI. Motor system**

Table 2: Motor system examination

		Right	Left
Power	Upper limb	4+	5
	Lower limb	5	5
Tone	Arms	Slight flaccidity	Normal
	Hip	Normal	Normal
	Knee	Normal	Normal
	Ankle	Normal	Normal
ROM	Arms	Possible within limits	Possible within limits
	Legs	Possible within limits	Possible within limits
Reflexes	All reflexes intact		

**VII. Coordination**

All tests were possible.

**VIII. Investigation**

Hyper intense lesions in left basal ganglia and frontal subcortical areas on T2 weighted and flair images which are Hypo intense on T1 weighted images and

- Facial-
- Nasolabial fold- not obliterated
  - Angle of mouth- lower on right side
  - Wrinkles of forehead- not clear
  - Closing eyes against resistance- NAD
  - Showing teeth- angle of mouth towards right less
  - Purse lips- against resistance
  - Blow out cheeks- affected( on tapping of side)
  - Sensory- taste
  - Glabellar tap- intact
- Vestibulocochlear, Glossopharyngeal, Vagus, Accessory, Hypoglossal- NAD

**V. Sensory system**

- Vibration - NAD  
 Joint position sense - NAD  
 Light -NAD  
 Pin prick -NAD  
 Temperature -NAD

showing no diffusion restriction and showing areas of blooming within it.

Possibility: Subacute Infarct with area of Haemorrhage.

BP chart was maintained during the period of treatment:

Table 3: BP Chart

DATE	8AM	2PM	6PM	9PM
9/8/18	160/100mmhg	160/100mmhg	170/100mmhg	190/110mmhg
10/8/18	160/100mmhg	170/100mmhg	160/100mmhg	170/110mmhg
11/8/18	160/100mmhg	170/100mmhg	150/80mmhg	170/100mmhg
12/8/18	140/100mmhg	160/100mmhg	170/100mmhg	170/100mmhg

13/8/18	190/110mmhg	170/100mmhg	160/110mmhg	160/100mmhg
14/8/18	160/100mmhg	170/100mmhg	190/120mmhg	180/100mmhg
15/8/18	190/110mmhg	170/100mmhg	130/80mmhg	150/100mmhg
16/8/18	140/90mmhg	170/100mmhg	170/100mmhg	160/110mmhg
17/8/18	140/100mmhg	180/110mmhg	-	

## 2.6. INTERVENTION:

### 2.6.1. Internal:

1. *Dhanadanayanadi Kashayam*
2. *Tab Ekanga Veera Rasa*
3. *Gokshura Panakam*
4. *Ksheera Kashayam with Palasa Twak, Bala, Gokshura, Laghu Pancamula, Durva, Vasa, Punar-nava*

### 2.6.2. External:

1. *Valuka Sweda* for 1 day (on 08/8/18)
2. *Sarvanga Utsadana* with *Kolakulathadi Choorna* and *Dhanyamla* for 7 days.
3. *Thala Pothichil* with *Amalaki, Jadamansi, Ksheerabala* 101 for 7 days.
4. *Jihwa Lepa* with *Vacha Rudrakshadi Choornam* for 9 days.
5. *Shirothalam* with *Kachooradi Choornam* and *Usheerasavam* for 3hours for 4 days.
6. *Sarvanga Abhyanga* with *Ksheerabala taila* for 1 day.

7. *Mrudu Nadi Sweda* for 1 day.

8. Exercise

### 2.6.3. Exercise chart:

1. Weight exercise(1kg) twice daily  
Upper limb 10 times (B/L)  
Lower limb 10 times (B/L)
2. Face exercise
  - i) Blowing balloon
  - ii) Gargling exercise 5 times
  - iii) Raise eyebrows 20 rounds

### 2.7. Discharge medicine:

- 1) *Gokshura Panakam*
- 2) *Brihat Vatachintamani Rasa*
- 3) *Shirothalam* with *Kachooradi choornam* and *Ksheerabala*101
- 4) *Rasna Tailam* for external application
- 5) *Ksheeradhooma* with *Balamoola Ksheera Kashaya* once per day
- 6) *Sp.Triphala Choornam*
- 7) It was advised to continue exercise and diet plan.

2.8. Follow up: After 3 weeks.

## 3. ASSESSMENT:

**Table 4 :** Assessment with grade:

		BT	AT	FU
Speech	Aphasia	Preserved comprehension, Non-fluent speech	Preserved comprehension, Clear speech	Preserved comprehension, Clear speech
	Dysphonia	Sound was not clear	Sound was clear	Sound was clear
	Dysarthria	Found spastic Lingual sounds affected Labial sounds clear	Spasticity relieved Lingual and labial sounds clear	No Spasticity, Lingual and labial sounds clear
HMF		15/30	17/30	23/30
Memory	Immediate	Not affected	Not affected	Not affected
	Short term	Impaired	improved	improved
	Long term	Impaired	impaired	improved
	Nasolabial fold	Not obliterated	Not obliterated	Not obliterated
	Angle of mouth	Lower on right side	Lower on right side	Lower on right side
	Wrinkles	Not clear	Clear	Clear

<b>Facial nerve test</b>	Closing eyes against resistance	NAD	NAD	NAD
	Blow out cheeks	Affected	NAD	NAD
	Showing teeth	Right side affected	Improved	Improved
<b>Muscle power</b>	Upper limb	Right side affected	Bilateral	Bilateral
	Lower limb	Bilateral	Bilateral	Bilateral
<b>Muscle tone</b>	Upper limb	Flaccid	Normal	Normal
	Lower limb	Normal	Normal	Normal

**Table 5:** Assessment with grade

	BT	AT	Follow up
Aphasia	4/5	5/5	5/5
Dysarthria	4/6	6/6	6/6
HMF	15/30	17/30	23/30
Immediate memory	5/5	5/5	5/5
Short term memory	2/5	4/5	4/5
Long term memory	0/5	2/5	2/5
Muscle power(UL)	4/5	5/5	5/5
Muscle power(L/L)	5/5	5/5	5/5

#### 4. DISCUSSION:

*Ardhita Chikitsa* in Ayurveda includes *Nasya*, *Murdhnitaila* and *Tarpana*<sup>6</sup>. In this case, more than a facial palsy patient was presented with symptoms of Brocas aphasia. Hence the line of treatment was not completely on the classical *Ardhita Chikitsa*. Here number of internal medicine opted was very few and he was constantly observed to avoid complication since he was a chronic CKD patient with high creatinine level.

Internal medicines:

*Dhanadanayanadi Kashayam*: It is indicated in the *Ardhita* and *Akshepa Vata*. It is always an option in cases such as Epilepsy, Bell's palsy, stroke due to infarction, trigeminal neuralgia etc. It has a *Kapha-Vata Samana* action, and is *Deepana*, *Pachana*, *Lekhana*,

*Ruksha* and *Ushna*. It is mentioned in *Sahasrayoga Vata Roga Chikitsa*.

*Ekanga veera rasa* is mentioned in *Pakshaghata*, *Ardhita*, *Dhanurvata* and *Sarva Vata roga*. It can be given in hemiplegic recovery. It is *Vata-Kapha hara*, *Balya*, *Rasayana*, *Deepana*, *Akshepa hara*, and *Atyantha Teekshna*.

*Gokshura pana* was included in the internal medicine considering its *Mootrala* property. This was given with the theory of diuretics in hypertension. *Gokshura Pana* helped to maintain the BP along with his allopathic medication for hypertension.

*Ksheera kashayam*: The drugs were chosen according to its *Dosha* and *Dhatu karma*, and considering his past illness like CKD, CAD, T2DM, HTN, HLP.

**Table 6**

Drug	Latin name <sup>7</sup>	Part used	Dosha karma	Dhatu karma
<i>Palasa twak</i>	<i>Buteamonosperma</i>	Stem bark	<i>KV hara</i>	<i>Grahi, Krimigna, Deepana, Rasayana</i>
<i>Bala</i>	<i>Sida cordifolia</i>	Root	<i>VP hara</i>	<i>Balya, Brhmana, Vrishya, indicated in Raktapitta, Vatavyadhi.</i>
<i>Gokshura</i>	<i>Tribulus terrestris</i>	Fruit	<i>VP hara</i>	<i>Vrsya, mutrala, Rasayana</i>
<i>Durva</i>	<i>Cynodon dactylon</i>	Whole	<i>KP hara</i>	<i>Raktapita hara</i>

		plant		
Vasa	Adhathoda vasica	leaf	KP hara	Rasayana, hrdaya, svarya, raktapita jit.
Punarnava	Boerhavia diffusa	Root	KV hara	Sothahara, Vayasthapana, deepana

### Panchakarma procedure:

Valuka Swedana for 1 day and Sarvanga Utsadana with Kolakulathadi and Dhanyamla for 7 days were done. Valuka sweda and Utsadana are Rukshana procedures and it was performed in the beginning of treatment to bring Nirama Avastha from Saamavastha in Pakshagata patients.

Thalapothishil with amalaki and Jadamansi with Ksheerabala 101 for 7 days were performed. In siraseka vidhi it is explained that it cures the diseases like Klama, Apaci etc. imparts strength to sight and induces sound sleep. It has the effect similar to the Takradhara. Benefits are it cures Doshakopa, Siroruk, Ojakshaya, Hrudayaruk, aversion to food and decreased appetite and pacifies the disease afflicting head, eyes and ears.

Jihwa lepa with Vacharudrakshadi Choornam for 9 days was opted. It has actions such as Svaryam. This preparation is effectively administered in conditions like Ardhitia, Jihvasthamba etc.

Shirotalam with Kachooradi Choornam and Usheerasavam (3 hours) was done for 4 days. Shirotalam is a variant of Murdhni Tailam. In the initial stage of Ardhitia Navneetham is indicated in classics. Here in this case Usheerasavam was chosen as the medium as it has the qualities like Raktapitta Nasanam. Since he had possibility of subacute infarct with area of haemorrhage this medicine was opted.

Sarvanga Abhyanga and Nadi sweda for done on last 1 day. Both internal and external treatment was decided in an idea that it should not increase intracranial pressure and to avoid the complications due to high blood pressure.

## 5. CONCLUSION

From the present case study it can be concluded that, Ayurvedic management can produce significant results in the signs and symptoms of diseases such as aphasia, thereby improving quality of day to day life of the sufferer. All therapies done in this case had given a combined effect to control the vitiated doshas in the body and there by nourishing the sense organs. Moreover the internal medicines opted; exercises given and diet maintained are having additional effect in relieving the signs and symptoms.

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