



Management of *Avabahuka* (Frozen Shoulder) with Ayurveda and Traditional Medication: A Case Study

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ABSTRACT

Avabahuka is considered to be an *Urdhva-chatrugata Vata vikara* caused by vitiation of *Vata dosha* in *Ansa Pradesha* or *Ansa Sandhi* (shoulder joint) by Acharya Sushruta under 80 types of *Vatavyadhi*. *Avabahuka* can correlate with Frozen Shoulder which affects the glenohumeral joint, possibly involving a non-specific chronic inflammatory reaction. The onset of frozen shoulder is usually gradual and idiopathic. Causative factors for *Avabahuka* are not mentioned separately in Ayurveda texts but mainly *Aharaja*, *Viharana* and *Abhighataja* are three main groups. *Samprapti* of *Avabahuka* is caused by purely *Vata dosa* and *soshana* of *Sleshaka kapha*. In Ayurveda, there are many methods of treatments for *Avabahuka* as *Siravedha*, *Agnikarma*, *Vasti chikitsa*, *Nasya*, *Snehana*, *Swedana* and oral medication. Here, the case of 58 years old female patient, diagnosed as *Avabahuka* and managed successfully according to Ayurveda principles using Ayurveda and Traditional medicines. Initially, the patient was having severe pain, restricted movements of the right shoulder joint and stiffness, and after this treatment regimen, all symptoms reduced and returned to almost normal. This case study shows that Ayurveda and Traditional medicines used in Sri Lanka have effective treatments to cure the chronic disease *Avabauka*.

Keywords: *Avabahuka*, *Vatavyadhi*, Ayurveda treatments, Traditional recipes

INTRODUCTION

The word *Avabahuka* is formed by two components namely, *Ava+Bahuka*. “*Apa*” is used as an alternate for “*Ava*” which gives the following meaning: *Viyoga*, *Vikratau* means dysfunction^[1]. “*Bahuka*” is the second part of the compound word *Avabahuka* and implies the following meaning.

Bahu- meaning upper limb and is one among *Shadanga*^[2].

Avabahuka is considered to be an *Urdhva-chatrugata vata vikara* caused by vitiation of *Vata dosha* in *Ansa Pradesha* or *Ansa Sandhi* (shoulder joint) by Acharya Sushruta under 80 types of *Vatavyadhis*^[3]. *Amsa Sandhi* has clinical importance because of its wide range of motion. *Avabahuka* causes pain and restricted movements which hampers the daily activity of the patient.

According to Susruta, vitiated *Vata* in and around the shoulder causes *Shosha* (dryness) of *Ansabandhana* (shoulder ligaments, tendons, connective tissue or capsule leading to pain and stiffness) and *Akunchana* (constriction) of blood vessels (reduced blood supply) resulting in *Avabahuka*.

Charaka Acharya used the word *Bahushosha*, *Bahu-sheersha gata vata* under *Vata nanatmaja vyadhi* [4].

According to Acharya Madhava, *Avabahuka* is *Dwandaja* which means that it involves two *Dosha Vata* and *Kapha*. Acharya Madhava was the first who differentiates *Ansa shosha* from *Avbahuka* and so considered them two different diseases [5]. In *Madhukosha teeka*, it is said that *Amsa shosha* is produced by *Dhatu kshaya*: which means *Shuddha vata janya* and *Avabahuka* is *Vata kapha janya*.

Ashtanga Hridaya has described *Avabahuka* under *Vatavyadhi adhikara*.

“Ansamulasthito vaayu sira sankochaya tatranga bahupraspanditaharam janayatvavabahukam”

Condition in which the *Vata* gets lodged at the root of the shoulder, subsequently constricting the veins and producing the loss of movements of the shoulder has been identified as *Avabahuka*.

Doshik impairment of *Avabahuka* is mainly *Vata dosha*, as it is described under *Vatavyadhi* and in later stage *Kapha dosha* is also associated with *Vata dosha*.

The authors have attempted to explain the cause of *Avabahuka*. The causes of *Avabahuka* may be classified into three groups such as,

- 1) *Abhighataja* (truma to the joint): injury to *Ansa marma* (shoulder region) leads to stiffness of the shoulder.
- 2) *Aaharaja* (food habits): *Tikta* (bitter), *Ushana* (hot), *Kashaya* (astringent), *Alpa ahara* (less amount), *Ruksha* (rough) quality of food cause vitiation of the *Vata dosha*.
- 3) *Viharaja* (behaviours and practices within lifestyle): due to overindulgence in things like triggers with excessive physical exercise, *Dukha shayya* (improper posture in bed), *Plavana* (excess swimming).
- 4) As a result of *Pakshaghata* (hemiplegia), *Kampa Vata* (Parkinson's disease) - where the patient is having less pain.

Avabahuka might co-exist with other local shoulder disorders, such as *Greeva-sandhigata vata* (cervical spondylosis), chronic arthritis, recent thoracic surgery, *Medovruddhi* (hypercholesterolemia), and *Hridroga* (coronary artery) disease.

Avabahuka can correlate with Frozen Shoulder which affects the glenohumeral joint, possibly involving a non-specific chronic inflammatory reaction, mainly of the sub-synovial tissue, resulting in capsular and synovial thickening. The onset of Frozen Shoulder is usually gradual and idiopathic.

According to *Samprapti* of *Avabahuka*, the disease is caused by purely *Vata dosa* and *soshana*

of *Sleshaka kapha*. Hence, *Vatanashana* and *Sleshaka kapha posana* should be the aim of the *Samprapti vighatana* towards the cure of the disease.

In Ayurveda, there are many methods of treatments for *Avabahuka* as *Siravedha*, *Agnikarma*, *Vasti chikitsa*, *Nasya*, *Snehana*, *Swedana* and oral medication. Acharya Sushruta talked about the treatment of *Avabahuka* in *Shareersthana*.

A list of references to *Avabahuka* in different texts is mentioned in Table 1.

Table 1: List of references of *Avabahuka* in different texts

Madhava Nidana ^[6]	Poorva Khanda	Vata Vyadhi Nidana	Lakshana (symptoms) of <i>Avabahuka</i>
Chakradatta ^[7]		Vata Vyadhi Chikitsa	Chikitsa(treatment) of <i>Avabahuka</i>
Sharangdhara Samhita ^[8]	Uttara Khanda		Chikitsa of <i>Avabahuka</i>
Bhavprakash ^[9]	Madhya Khanda	Vata Vyadhi Adhikara	Lakshana and chikitsa of <i>Avabahuka</i>
Gada Nigraha ^[10]		Vata Vyadhi Chikitsa	Lakshana and chikitsa of <i>Avabahuka</i>
Yogarajnanakara ^[11]		Vata Vyadhi Chikitsa	Lakshana and chikitsa of <i>Avabahuka</i>
Bhaishajya Ratnavali ^[12]			Chikitsa of <i>Avabahuka</i>
Vangasena ^[13]		Vata Vyadhi Adhikara	Nidana, Lakshana and Chikitsa of <i>Avabahuka</i>

CASE STUDY

Patient

A 58-year-old housewife, presented with a three-year history of right shoulder joint pain, stiffness and reduced movement range with insidious onset. Later, it increased, and the patient felt severe pain even in resting. Patient was depressed, and according to her, she has developed suicidal thoughts due to severe pain.

Aggravating Factors

Pain was aggravated during sleeping in any position at night while raising and moving the hand. Patient felt severe pain even wearing clothes and reaching for cupboards. Hence, she has stopped all day-to-day activities due to unbearable pain.

Treatment History

During the last three years, she was treated with Ayurveda medicine and Acupuncture treatment in National Ayurveda Hospital, Colombo 08, Sri Lanka, and Allopathic treatments from private medical centres from time to time. But there was no improvement during the treatment.

Personal History

Appetite - Loss of appetite (*Mandagni*)

Sleep - Disturbed due to pain

Micturition - Normal
Bowel habits -Normal
Addiction - Not found

General Examination

Pulse and blood pressure were in normal range.
The patient was having unhealthy face but was not anaemic.
Lymphadenopathy-Not found

Systemic Examination

Respiratory System: Lungs clear Cardio Vascular System: Heart sounds are normal
Central Nerves System- Conscious and Oriented

Local Examination

Muscle tone – Normal
Deep tendon reflexes of biceps and Triceps muscles in both hands – Normal
Muscle power in both hands - Normal
Deformity of right shoulder joint - Absent
Muscular atrophy- Wasting in the scapular region in right shoulder (Fig. 1) but not in the right arm.
Tenderness - Severe tenderness (Grade 3 according to numerical scale) and stiffness
Tremor - Slight tremor in right hand due to Parkinsonism
Local temperature - Normal
Restriction range of Movements (Gati Kriya) in shoulder joint: Flexion, extension, abduction, adduction, internal rotation, external rotation - Zero (0) at the initial stage of the treatment (fig.1).
Appley's test – Positive

Investigations

Hb% - 13.2 gm%
Blood sugar level (fasting) - 104 mg/dl
Rheumatoid factor – Negative
ESR - 11 mm/hr
X-ray (AP) in right shoulder joint - Normal

Diagnosis:

Avabahuka in right shoulder joint

Treatment Protocol for Management

After careful assessment and examination, the patient was managed according to Ayurveda treatment principles using Ayurveda and Sri Lankan traditional recipes. Internal treatments such as decoctions (*Kashaya*), pastes (*Kalka*), pills (*Vati*), powders (*Churna*) and external application of oils with sudation therapy were done using traditional and Keraliya recipes. Treatments were selected considering *Dosha* and *Ama* state. Initial treatment was aimed at *Ama pacana* [purify *Ama* (toxins)] and pacify *Vata dosha* which helps to reduce the *Guruta* (heaviness), *Sthabdata* (stiffness) and increases the range of motion in the shoulder joint.

Further, physical therapies such as massage, heat application, stretching and 10 minutes of exercise in the morning and afternoon are routinely prescribed.

The assessment was done on the subjective and objective parameters before and after treatment. A special scoring pattern was prepared for the assessment of subjective parameters. Pain, shoulder joint stiffness, and Internal and external rotation were assessed by a Visual Analogue scale (0-3 scale). Other symptoms like *Bahu sosha* (wasting) or *Sopha* due to involvement of *Kapha dosha* (swelling) were measured by assessing arm circumference.

Effects before and after treatments were evaluated according to the following numerical scale: Table 2. *Amsa sandhi shula* (Shoulder pain), Table 3. *Bahu-prapandithahara* (shoulder stiffness), Table 4. Range of movement of the shoulder joint and Table 5. Internal and external rotation.

Table 2. *Amsa sandhi shula* (Shoulder pain)

0	No pain at all
1	Mild pain can do strenuous work with difficulty
2	Moderate pain can do normal work with support
3	Severe pain, unable to do any work at all

Table 3. *Bahu-prapandithahara* (Shoulder Stiffness)

0	No stiffness
1	Mild has difficulty in moving the joint without support
2	Moderate has difficulty in moving and can lift only with the support
3	Severe, unable to lift

Table 4. Range of Movement (ROM) of the Shoulder Joint

Movement of the Shoulder Joint	ROM (in degree)			
Grade	0	1	2	3
Flexion	135-180	90-135	45-90	0-45
Abduction	135-180	90-135	45-90	0-45
Extension	45-60	30-45	15-30	0-15

Table 5. Internal and External Rotation

ROM (Range of motion) in degree	Grade
0	3
Up to 30	2
Up to 60	1
Up to 90	0

All internal medicines were given morning and night after meals within the dose range of Ayurveda and traditional medicine practices. Some market-available medicines (from India) were also given to the patient according to the needful. Oil applications and sudation were done twice a day around 20-30 minutes, morning and evening. External pastes were applied to the painful sites at night and removed it using lukewarm water the following day morning. The treatment regimen was completed in eight weeks according to Table 6.

Table 6. Internal and External Treatments

Treatment (Week)	Internal treatments	External treatments
First week	Decoction: <i>Rasna shigru punarnawa</i> Other medicines with the dosage: <i>Navarathna Kalka</i> - 5g <i>Gokshuradi guggulu</i> 2 pills <i>Hingwashtaka churna</i> 3g <i>Artilon</i> 01 capsule (from market)	<i>Nikadi pottali sweda</i> for sudation therapy <i>Nirgundyadi taila</i> 30ml <i>Shothahara lepa</i> 30g for application at the painful sites at night
Second week	Decoction: <i>Dashamulan pancakolam</i> Other medicines with the dosage: <i>Navarathna Kalka</i> - 5g <i>Gokshuradi guggulu</i> 2 pills <i>Hingwashtaka churna</i> 3g <i>Artilon</i> 01capsule (from market)	<i>Shothahara lepa</i> 30g <i>Nirgundyadi taila</i> 30ml <i>Eta ata pottali sweda</i> (sudation therapy)
Third week	<i>Nelli, Rasakinda, Kollu kashya</i> <i>Mayostal forte</i> 01 tablet <i>Navarathna Kalka</i> - 5g <i>Artilon</i> 01 capsule (from market) <i>Rasnadi guggulu</i> 2 pills	<i>Narayana taila</i> 30ml <i>Eta ata pottali sweda</i> (sudation therapy)
Forth week	<i>Lasunam dashamulan ca Kashaya</i> <i>Mayostal forte</i> 01 tablet (from market) <i>Navarathna Kalka</i> - 5g <i>Rasnadi guggulu</i> 2 pills	<i>Patra pottala pinda sweda</i> (according to Keraliya <i>pancakarma</i>) <i>Narayana taila</i> 30ml
Fifth week	<i>Lasunam dashamulanca Kashaya</i> <i>Vataroga kalka</i> 5g <i>Rasnadi guggulu</i> 2 pills	<i>Patra pottala pinda sweda</i> <i>Narayana taila</i> 30ml
Sixth week	<i>Rasna</i> 9 <i>Kaishora guggulu</i> 2 pills <i>Vataroga kalka</i> 5 g	<i>Patra pottala pinda sweda</i> <i>Narayana taila</i> 30ml
Seventh week	<i>Maharasnadi Kashaya</i> <i>Kaishora guggulu</i> 2 pills <i>Vataroga kalka</i> 5g	<i>Shashika shali pinda sweda</i> (according to Keraliya <i>pancakarma</i>) <i>Ashvagandha taila</i> 30ml
Eight week	<i>Maharasnadi Kashaya</i> <i>Kaishora guggulu</i> 2 pills <i>Vataroga kalka</i> 5g	<i>Shashika shali pinda sweda</i> <i>Ashvagandha taila</i> 30ml

Ingredients in Traditional preparations are as follows:

Navarathna Kalka ^[14]: *Ajamoda* (*Trachyspermum ammi*), *Pippali* (*Piper longum*), *Jeeraka* (*Cuminum cyminum*), *Krushna jeeraka* (*Carum carvi*), *Karkataka srungi* (*Pistacia integerrima*), *Madhuka* (*Glycerrhiza glabra*), *Devduru*, *Jatiphala* (*Myristica fragrans*), *Shunthi* (*Zingiber officinale*), *Sanninayam*, *Lavanga phala* (*Syzygium aromaticum*), *Nutmeg mace* (*Myristica fragrans*), *Kulurena* (*Picrorrhiza kurroa*), *Aralu* (*Terminalia chebula*), *Bulu* (*Terminalia bellirica*), *Bees' honey*.

Vataroga kalka:

Yakshakshi seed (Caesalpinia bonduc), Lasuna (Allium sativum), Pippali (Piper longum), Shunti (Zigiber oofficinale), Sahindawa (Rock salt), Hingu (Ferula assa-foetida), Eranda taila (oil of Ricinus communis).

Nikadi pottani: *Nirgundi leaves (Vitex negundo), Eranda seeds (Ricinus communis), Ardaka (Zigiber officinale), Lasuna (Allium sativum), dried coconut*

Eta ata pottaniya (Seven types of medicinal seeds and dried coconut): *Mee seeds (Madhuca longifolia), Eranda seeds (Ricinus communis), Kumburu seeds (Caesalpinia bonduc), Karanja seeds, (Milletia pinnata), Domba seeds (Calophyllum inophyllum), Tila (Sesamum indicum), Musturd (Sarshapa) seeds (Brassica nigra), dried coconut kernel.*

Nelli, Rasakinda, Kollu kashya: *Nelli (Phyllanthus emblica), Rasakinda (Tinospora cordifolia), Kollu (Macrotyloma uniflorum) decoction.*

Other Ayurveda decoctions and the prepared medicines can be cited in Ayurveda texts.

OBSERVATION AND RESULTS

The results showed some significant changes after treatment and were recorded in table 7.

Table 7: Results Before and After treatment

		BT	After Treatment (AT) at the end of each week							
			1 st week	2 nd week	3 rd week	4 th week	5 th week	6 th week	7 th week	8 th week
<i>Amsa sandhi shula</i>		3	3	3	2	2	2	2	1	1
<i>Bahu prapanditha hara</i>		3	3	2	2	1	1	1	0	0
Movement of shoulder joint	Flexion	3	3	2	2	2	1	1	0	0
	Abduction	3	3	2	2	2	1	1	0	0
	Extension	3	3	3	2	2	1	1	0	0
Internal and External rotation		3	3	3	2	2	2	2	1	1

BT- Before Treatment.

AT – After Treatment

Initially, the patient was having pain and stiffness, restricted movement and tightness in the right shoulder. After three weeks of treatment, gradually started, reducing pain at night and when exercising. At the end of treatment, the patient had a significant reduction in pain (*Amsa sandhi shula*), and stiffness of the right shoulder joint (*Bahu-prapandithahara*). The range of movement of the right shoulder joint was improved well allowing him to perform his daily activities with ease, pain significantly reduced in sleeping at night, comfortable at work and movement restriction. Stiffness was reduced from severe to mild which does not affect in routine work. Symptoms were gradually reduced, and the patient was in a pleasant mood. The patient was able to do her routine work without taking any medicine. Further, all serum biochemical and haematological parameters before and after treatments are within normal levels after two months of treatment.



Fig.1. Muscle wasting in the scapular region in the right shoulder, and zero movements of the shoulder joint before treatment



Fig. 2. Three weeks after the treatment-movements are slightly improved



Fig. 3. Four weeks after the treatment-movements are better than 02 weeks treatment



Fig.4. Eight weeks after the treatment-movements are much better than the pre-treatment

DISCUSSION

Etiological factors such as heavy weightlifting, old age, severe exercises, trauma and other common *Vata dosha* (*Vyana vayu*) vitiation factors and *Ama* or toxin or undigested metabolic waste in the blood due to indigestion (*Agni-mandhyata*) cause to start the disease. Vitiating *Vata dosha* circulates in the whole body and get accumulates mainly in shoulder joints (*Amsa sandhi*) which causes the depletion of *Shleshka kapha* and due to which lubrication of joint i.e., free movement of joint get restricted.

Treatment started with *Agni deepana* (improving digestive power) and *Ama pachana* [to purify *Ama* (toxins)] medicines in the first two weeks. Further, add some medicines to *Vata shamana* medicines. Mainly, *Navarathna kalka* and *Hinuashtaka churna* help to increase digestive power and reduction of pain due to compelled toxins (*Ama pacana*) from blood and pacifying *Vata dosha*. These medicines increase the digestive power and cleanse the channels throughout the body (*Stroto-shodhana*). Later, *Vata shamaka* medicines such as *Rasnadi guggulu* and *Vataroga kalka* were used for *Vata shamaka* properties. When the disease become chronic, *Rasa* as well as *Rakta dhatu* were vitiated by *Vata dosha*. Hence, to purify *Rasa* and *Rakta dhatu*, *Kaishora guggulu* was given to the patient in the last three weeks. All the decoctions which were used in the early weeks have *Vata shamaka* properties. When considering the decoctions, all (*Lasunam dashamulan cha*, *Rasna 9* and *Nelli*, *Rasakinda*, *Kollu* decoction) are having mainly *Vata shamaka* properties. *Maharasnadi* decoction given in the last two weeks also has *Shamana properties* and it helps to improve strength in muscles and joints. It has *Vatahara*, *Srothoshodhaka* and *Shoolahara* properties which may help to relieve *Bahugata Sira Sankocha* and correct *Sira sankocha* pathology in *Avabahuka* [15]

External treatments such as *Swedana* (a treatment process in which sweat is induced by the application of heat warmth in the form of heat and the warmth of steam by medicaments) and local oil application (*sthanika taila abhyanga*) help for pain reduction (*Shulaghana*) and reducing other symptoms by *Vata dosha* (*Vata shamana*).

Nirgundyadi taila has mainly *Vata shamaka* properties and *Narayana* oil has *Vata shamana*, *Tarpana* (improves the functions of nervous system and muscular tone) properties and reduce muscle pain. *Ashwagandha* oil is a well-known muscle strength enhancer, and it helps to increase the muscle mass, nourishment of the muscle and reduce muscle weakness.

Nikadi pottali Sweda also plays an important role. It is a *Ruksha* type of *Sweda* and which reduce *Ama*. Later, *Swedana* was given by *Snighadha* type of *sweda* such as *Eta ata pottali sweda* which acts as *Vata shamaka* by decreasing *Shula*, *Sthambha* and *Bahu-prapandithahara*. *Patra pottala pinda sweda* is provided relief from pain, inflammation, swelling and stiffness associated with bone, joint and or musculoskeletal pains. *Shashtika shali pinda sweda* is an effective procedure of *Swedana* used in patients suffering from illness due to morbid *Vata Dosha*. It makes the body mobile, removes stiffness of joints, reduction of spasticity and facilitate free movement of joint preventing deformities and contractures. Cleans the microchannels of the body and improves circulation. It works as *Brimhana* and provide *Dhatu poshana* (nourishment) [16]. This treatment regimen successfully reduces the symptoms of stiffness, pain and restricted movements of right shoulder joint and patient has to be done day-to-day activities as usual.

CONCLUSION

Ayurveda and Traditional medicine have a long history of use in health maintenance and disease prevention and treatment, particularly for chronic diseases. This case study shows that Ayurveda and Traditional medicines in Sri Lanka have effective treatments for reducing pain and improving flexibility of the affected shoulder joint in the management of *Avabahuka*. It is a safe OPD-level procedure to manage the discomfort given by the disease.

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