Management of Avabahuka (Frozen Shoulder) with Ayurveda Therapeutic Regimen: A Case Study

Savita Sharma¹, Pradnya J Bhagat², R Govind Reddy³

ABSTRACT

Avabahuka (frozen shoulder) is a type of Vata Vyadhi caused by vitiated Vata Dosha with Anubhandho of Kapha Dosha. The symptoms of Avabahuka can be correlated with the symptoms of adhesive capsulitis, which is commonly known as frozen shoulder. Being a disease of shoulder joint, which has the greatest range of motion, it seriously affects the routine day to day activities. A 47-year-old female presented to the OPD of Regional Ayurveda Research Institute for Mother and Child Health (RARIMCH), Nagpur, Maharashtra, with pain and restricted movement in the right shoulder since 6 months, having undergone conventional treatment without any significant improvement. As Asma-Sandhi (shoulder joint) is a seat of Kapha Dosha and considering Vata-Kapha Dushhti in Avabahuka, the Vata-Kapha pacifying management was planned for the present case. Comprehensive Ayurvedic modalities consisting of Balataila Snehana, Sarvanga Bashpa Swedana, Patrapinda Sweda, and Anutaila Nasya along with Mahayograj Guggulu and Maharasnadi Kwatha, were administered for 2 months. The range of movements improved gradually from 50° to 100° for abduction, 70° to 110° for flexion, and 15° to 50° for extension. VAS score for pain in the right shoulder was 7 before treatment, which came down to 4 after first course of treatment regimen and gradually to 3 after completion of the treatment.

Keywords: Avabahuka, Ayurvedic modalities, Frozen shoulder, Nasya, Patrapinda Sweda.

INTRODUCTION

Vata is the Dosha responsible for controlling all the neurological and neuromuscular activities in the body. It is responsible for all the movements in the body. Vata in its vitiated form gets filled the movements in the body. Under the term Nanatmaja Vyadhi of Vata, 80 diseases have been included. Charaka has stated that causes of all these Vatavyadhi can be divided as two types, i.e., Dhatushoshajanya (caused by depletion of tissues) and Margavrodhajanya (caused by obstruction of Vata Dosha by others).²

Avabahuka is considered to be a disease that affects the Amsa Sandhi (shoulder joint) and is caused by the Vata Dosha. Even though the term Avabahuka is not mentioned in the Nanatmaja Vata Vyadhi, Acharya Sushruta and others have considered Avabahuka as a Vata Vyadhi.³ Amsa Shosha can be considered as the preliminary stage of the disease where loss or dryness of the Shleshaka Kapha (one of the type Kapha) within the shoulder joints occurs. The next stage, that is, Avabahuka, occurs due to the loss of Shleshaka Kapha and symptoms like pain during movement and restricted movement are manifested. This is commented in the Madhukosha Teeka that Amsa Shosha is produced by Dhatushoshya, that is, Shuddha Vatajanya, and Avabahuka is Vata-Kaphajanya.⁴

The symptoms of Avabahuka are often compared with the symptoms of adhesive capsulitis, which is commonly referred to as frozen shoulder.⁵ Adhesive capsulitis refers to a mysterious fibrosis of the glenohumeral joint capsule, manifested by diffuse, dull, aching pain within the shoulder and progressive restriction of motion, but usually no localized tenderness.⁶ In early stages, the pain is worst at the hours of darkness and therefore the stiffness is limited to abduction and internal rotation of the shoulder. The pain is present most of the time with limited movements of the shoulder joint.⁷ The prevalence rate is two to five for general population.⁸

A number of treatment approaches are recommended for the management of frozen shoulder. These include pain management through analgesics, anti-inflammatory, steroid injections⁹¹⁰ and various treatment modalities like physiotherapy, which commonly involves active and passive stretching and joint mobilizations.¹¹ In severe cases of restriction, orthographic distension,¹² surgical capsular release,¹³ or manipulation under anesthetics¹⁴ have been advocated. In spite of the variety of approaches, there is lack of substantial evidence to prove that treatment speeds recovery.¹⁵ In the present case, a patient with frozen shoulder was assessed and treated with a Panchakarma therapeutic regime, that included Balataila Snehana (oleation), Sarvanga Bashpa Swedana (sudation), local Patrapinda Sweda, Anutaila Nasya along with Mahayograj Guggulu and Maharasnadi Kwatha, to determine if therapeutic intervention resulted in a measurable improvement in shoulder pain and range of motion.

CASE DESCRIPTION

A 47-year-old lady consulted the outpatient department (OPD) at Regional Ayurveda Research Institute for Mother and Child Health (RARIMCH), Nagpur, with the complaint of dull aching
pain with restricted movement of her right shoulder joint since 15 days. The patient experienced pain in the right upper limb thrice in the 6 months. Pain was severe, agonizing, and of pricking nature associated with numbness. So, she consulted a physician who treated her with diclofenac sodium and serratiopeptidase, aluminium hydroxide or magnesium hydroxide (antacids), and diclofenac gel for topical application but did not get any remarkable relief. Then she was to an orthopedician who diagnosed it as a case of frozen shoulder. She was again prescribed with the same treatment of NSAIDs, antacids, and suggested extensive daily physiotherapy. No apparent cause or triggering factor could be elicited. The patient subsequently consulted Ayurvedic OPD at RARIMCH, Nagpur, for Ayurvedic management (Table 1).

**Past History**

The patient does not have history of diabetes mellitus, hypertension or of any physical injury or trauma to the right shoulder. There is no family history of musculo-skeletal illnesses. The patient practiced mixed diet.

**Physical Examination**

Weight: 68 kg; height: 156 cm; and BMI: 27.98 kg/m²; blood pressure = 130/90 mm Hg; pulse rate = 74 minute; pallor, icterus, cyanosis, clubbing, and edema were absent; cardiovascular system (CVS): normal; respiratory system (RS): clear no added sound; central nervous system (CNS): consciousness, attention, orientation, memory, and speech are normal; Reflexes in both upper and lower limbs were in the normal level and muscle power was elicited as 5/5 in all limbs; muscle power: 3/5 in the right upper limb, 5/5 in the left upper limb, 5/5 in both lower limbs; Prakriti: Vata pradhana Kaphaja.

- Shoulder joint examination: right side is as follows. Left side is normal.
- Swelling: absent
- Tenderness: present
- The lift-off test (patient was asked to lift hand off her lower back) and drop arm tests were positive
- Range of movements-Restricted: active ROM (AROM) abduction 50, flexion 70, extension 15°
- Vas score for pain in right shoulder was 7.

**Investigations**

Both hematological and biochemical investigations carried out were found within the physiological limit. One month old Xray of Shoulder joint was apparently normal.

**Therapeutic Intervention**

The line of treatment mentioned for Vatavyadhi in Ayurvedic classics includes Snehana (oleation), Swedana (sudation).16 Basti (therapeutic emema), Shiro-basti, Nasya (nasal instillation), and all Vatashamaka (alleviating Vata) Ayurveda preparations. Sushrutacharya advised Vatavyadhichi Chikitsa for Avabahuka, except Siravyadh. Chikitsa-Sara-Sangraha advised Nasya, Uttarabhatika Snehapana, and Sweda for the treatment of Avabahuka. Anuta lai is the commonly used Sneha Nasya with many benefits.17,18

**Samprapti Ghataka (Factors of Pathogenesis as per Ayurveda)**

Dosha: Vyana Vata, Shleshaka Kapha; Dushya: Sira, Snayu, Mamsha, Kandara, Asthi; Srotas: Mamsavaha, Asthivaha; Srotu Dushti: Sang, Vimargagamana Roga; Marga: Madhyama; Udbhava Sthana: Pakwasha; Vyakta Sthana: Bahu; Adhishthana: Amsa Pradesha; Vyadhi Swabhava: Chirakari.

By considering these references, the line of treatment chosen for this patient was according to Dosha-Dushti and Shiro-Dushti as above, which included Abhyanga (external oleation) with Balataila, Sarvanga Swedana with Bashpasveda, Patrapinda Sweda with Nirgundipatra (leaves of Vitex negundo L.) on right shoulder, and Pratimarshana Nasya with Anu Taila and two Ayurvedic medicines—Mahayograj Guggulu 500 mg twice a day and Maharasna Kwashta 20 mL twice a day with lukewarm water after meals. Total treatment given was for 60 days. The treatment regimen at the in-patient department (IPD) level was given for 30 days in two divided courses of 15 days each with an interval of 15 days.

The patient was admitted in the female ward. Abhyanga with Balataila was done for 25 minutes followed by Sarvanga Swedana with Bashpa Sweda for 10 minutes. Patrapinda Swedana was done with Nirgundipatra on the right shoulder for 15 minutes by gently rubbing around the shoulder.

**Table 1: Timeline of case**

<table>
<thead>
<tr>
<th>S. no.</th>
<th>Period</th>
<th>Clinical events</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>July 2018</td>
<td>Patient started complaints of gradual onset of severe, agonizing, pricking pain associated with numbness in the right shoulder for which she consulted physician and got temporary relief.</td>
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<tr>
<td>2</td>
<td>August 2018</td>
<td>Above complaints worsened at the end of month for which she got referred to orthopedic by physician.</td>
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<tr>
<td>3</td>
<td>Oct 2018</td>
<td>Consulted orthopedic physician and was advised physiotherapy.</td>
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<tr>
<td>4</td>
<td>Nov 2018</td>
<td>X-ray of right shoulder found normal.</td>
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<tr>
<td>5</td>
<td>Dec 2018</td>
<td>Patient visited RARIMCH, Nagpur, OPD with complaints of dull aching pain with restriction in the movement of her right shoulder since 15 days.</td>
</tr>
<tr>
<td>6</td>
<td>Dec 2018</td>
<td>Ayurvedic treatment regimen at IPD for 15 days given. First assessment done before starting IPD treatment and second assessment done after 15 days. The range of restricted movements improved gradually from 50° to 80° for abduction, 70° to 90° for flexion, and 15° to 30° for extension.</td>
</tr>
<tr>
<td>7</td>
<td>Jan 2019</td>
<td>Second course of Ayurvedic treatment regimen at IPD for 15 days given. Third and fourth assessments done. On fourth visit, range of shoulder movement came to 100° for abduction, 100° for flexion, and 50° for extension. Pain on VAS scale changed from 7 to 3.</td>
</tr>
<tr>
<td>8</td>
<td>Feb 2019</td>
<td>Fifth assessment results were same as of fourth assessment and patient obtained relief.</td>
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Preparation of Patrapinda Pottali
Fresh Nirgundi leaves were finely chopped into small pieces and taken in a vessel with a round bottom. About 100 mL of Tila Taila (sesame oil) was added to this. The leaves were then cooked with continuous stirring. These cooked leaves were placed on the cotton cloth. Four edges of the cloth were tied in such a way that it can easily be hold in hand with round pack. Total 100 mL of Tila Taila was taken and heated. The packs of herbal leaves were dipped in the oil. When the pack is properly heated, it was taken out of the vessel and applied in motion on the affected part.

Pratimarsha Nasya with Anutaila was done after slight lukewarm Bala Tail massage on forehead, sinus triangle, and neck. Internally, Mahayograj Guggulu 500 mg and Maharasnadi Kwatha 20 mL were given twice a day with lukewarm water after meals. Assessment was done at the time of discharge on 15th day. The internal medicines were continued for next 15 days. The second course of same treatment regimen was given in next month at the IPD level. On discharge, she was advised for five times at the interval of 15 days. Details of clinical assessment and treatment schedule are given in Flowchart 1.

Outcomes
A significant change in the range of movement was observed on goniometry after first course of 15 days of the therapeutic regimen (Fig. 1), facilitating good active and passive movements of the right shoulder joint. The range of restricted movements improved gradually from 50° to 80° for abduction, 70° to 90° for flexion, and 15° to 30° for extension. After completion of the second course of the Ayurvedic treatment regimen at IPD, excellent relief was observed in range of restricted from 50° to 100° for abduction, 70° to 110° for flexion, and 15° to 50° for extension. Visual analog scale (VAS) score for pain in the right shoulder was 7 before treatment, which came down to 4 after the first course of treatment regimen and gradually 3 after completion of the treatment. After 2 months of the Ayurvedic treatment regimen, the patient had marked relief in pain and stiffness in the right shoulder joint. There was full range of shoulder movement (Fig. 1) and marked relief in pain on VAS (Fig. 2).

Discussion
In the present case, Hetu (causes) like Vatakarak Ahara (Vata aggravating diet), Ativyayam (excess exercise) and menopausal age, vitiated Vata Dosh (Vata dosha), and Aam produced due to Agnimandhya got accumulated in the Amsa Sandhi. This along with the depletion of lubrication of Sandhi resulting from Vata Prakopa, produced restriction in joint movement causing Shool (pain) and Stambha (stiffness) that are the main symptoms of Avabahuka and are the characteristic of Vata and Kapha, respectively. Also, Amsa Sandhi is seat of Kapha. So, the treatment regimen was designed with the aim to pacify the Vata-Kapha Dushti both internally and externally and to address the Kha Vaigunya by strengthening the joint. Abhyanga has Snigdha (unctuous), Guru (heavy), and Mridu (soft) properties, which reduce the vitiation of Vata thus addressing the Kshaya (decay) in the Dhatus. The main content of Balataila is Bala (Sida cordifolia L.), which possess Snigdha Guna (unctuous property) and Vatahara (alleviates vitiated Vata) properties. This might have helped in controlling the vitiated Vata resulting in relieving of joint pain and improving the movements of the right shoulder joint. Pharmacological studies have demonstrated that Bala possesses vasicine, vasicinone, vasicol, and vasicinolone, which are having anti-inflammatory and analgesic activities.19–21 Swedana is specially indicated in symptoms like Sankocha (contraction or flexion), Ayama (extension), Shula (pain), Stambha (stiffness), Gaurava (heaviness), and Supti (numbness).22 Swedana relieves Stambha (stiffness), Gaurava (heaviness), seeta (coldness) and induces Sweda (sweating),

Flowchart 1: Treatment schedule timeline

Patient consent
General examination
Shoulder joint examination

Balataila Abhyanga for 25 min,
Sarvanga Bashpa Swedana for 10 min,
Nirgundi Patrapinda Swedana locally for 15 min,
Pratimarsha Nasya with Anutaila 2 drops in each nostril,
Mahayograj Guggulu 500 mg twice a day
Maharasnadi Kwatha 20 mL twice a day
with lukewarm water after meals.

Mahayograj Guggulu 500 mg twice a day
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Balataila Abhyanga for 25 min,
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Flowchart 1: Treatment schedule timeline
thus relieving the stiffness of joints and making them more flexible. Swedana also clears obstruction of channels (Srotorodha).23

In this case of Avabahuka, Balataila Snehana and Bashpa Swedana together might have produced Vatashamana (pacification of Vata), Balya (strengthening), and Pachana (tissue metabolism) effect resulting in marked relief in pain and improvement in the range of movements of the right shoulder joint.

Nirgundi (V. negundo) possesses Vedanasthapana (analgesic) and Shothahara (anti-inflammatory) properties.24 In most of the Nighantu literatures, it has been used for treating disorders characterized by Shopha (swelling) and Shula (pain),25 and other references are also available about Vataghna properties of Nirgundi Patrapinda Sweda.26 Heat applied during Nirgundi Patrapinda Sweda increases local circulation and thus the rate of drug absorption resulting in reduction of pain and stiffness. Ancient Acharyas, while explaining the indication for Nasya, have emphasized that the Nasya drug usually acts through absorption through the Shringataka Marma and alleviates the diseases of Skandhama, Amsa, and Greeva (neck).27,28 So Anutaila Nasya performed might have helped in balancing Doshas and achieving Vatashamana in this case. The polyherbal formulation of Maharasnadi Kwatha contains Rasna (Pluchea lanceolata (DC.) C. B. Clarke), Eranda (Ricinus communis L.), Devadaru (Cedrus deodar Roxb.), Shati (Hedychium spicatum Sm.), Vocha (Acorus calamus L.), Vasa (Justicia adhatoda L.), Shunthi (Zingiber officinale Roscoe), Harda (Terminalia chebula Retz.), Bala (S. cordifolia), Chavya (Piper retrofractum Vahl), Musta (Cyperus rotundus L.), Punarnava (Boerhavia diffusa L.), Guhadhi (Tinospora cordifolia Miers), Vriddhdaru (Argyrea nervosa (Burm. f.) Bojer), Shatpushpa (Anethum sowa Roxb. ex Fleming), Gokshura (Tribulus terrestris L.), Aswagandha (Withania somnifera (L.) Dunal), Shatavari (Asparagus racemosus Willd.), Ativisha (Aconitum heterophyllum Wall. ex Royle), Kritamala (Cassia fistula L.), Pippali (Piper longum L.), Sahachara (Barleria prionitis L.), Dhanyaka (Coriandrum sativum L.), Brihati (Solanum indicum L.), Kantakari (Solanum surattense Burm. f.), and Dhamasa (Fagonia arabica L.). This formulation proved to be safe and showed antioxidant and antiarthritic activities.29 A study on ethanolic extract of Rasna exhibited significant anti-inflammatory activity.30,31 Decoction of these drugs has resulted in reduction of inflammation and pain in the right shoulder of this case. Extensive research work that has been carried out on Guggulu [oleoresin of Commiphora mukul (Hook. ex Stocks) Engl.] provides evidence that it is a potent anti-inflammatory and analgesic drug. It also helps in prevention against degenerative changes that may occur in bones and joints due to arthritis and it is recommended for the management of all Vata Rogas.32 Guggulu reduces inflammation and joint stiffness as well as pain associated with arthritis and increases
joint mobility.\textsuperscript{33} Mahayogaraja Guggulu is known to possess a Vata-hara and Kapha-hara property,\textsuperscript{34} which has taken care of the two specific etiological factors in Avabahuka (frozen shoulder) resulting in good relief. The combination of Abhyanga, Swedana, and Nasya might have helped in normalizing the Dosh imbalance in the shoulder joint by Vatanulomana, Stabdahara, Rujahara, and Shothahara properties.

**Conclusion**

Ayurveda treatment therapy with Balatalia Sneahan, Sarvanga Bashpa Swedana, Anuitala Nasya along with Mahayogaraja Guggulu and Maharasnadi Kwatha is effective in reducing pain and improving flexibility of the affected shoulder joint in Avabahuka (frozen shoulder).

**References**

हिन्दी सारांश

अवबाहुक की आयुर्विदीय चिकित्सा - एक केस रिपोर्ट

सविता शर्मा, प्रज्ञा जे भगत, गोविंद आर रेखी

अवबाहुक यह वातसूक्ती थथ शक्ति के अनुसंधान से होनेवाला एक वातसूक्ती है। अवबाहुक के लक्षण अर्द्ध्य या पुरस्कृति के समान होते हैं, जिसे वेदांत शास्त्र में कहा जाता है। अंसि एक फिगरीक अंश में है, इस संगी का रोग होने के कारण तैलमंडल कार्य में इसका अन्यथा महत्व है। एक 47 वर्षीय महिला क्षेत्रीय आयुर्विदीय मात्र एक शिशु रूप स्वास्थ्य अनुसंधान संस्थान, नागपुर, महाराष्ट्र के आयुर्विद्या में 6 महीने से दार्द्द अंसि में लैंडोर और सकल क्रिया की शिकायत लेकर प्रस्तुत हुई। महिलाओं में आपने इस पीड़ा के लिये पारंपरिक अधिकांश उपचार लिये परंतु असमाधान कारक रोगानुपम मिले। अवबाहुक में वातसूक्ती दृष्टी होती है, तथा अंसि का शक्ति संघ ने इस रोग की शास्त्र के चिकित्सा का प्रयोग इस रोग में किया गया। आयुर्विदिक रूप से आयुर्विदीय चिकित्सा के अधिक उद्देश्य के बाद घरेलू की चिकित्सा बना तेज सर्वोच्च अभ्यंग, सर्वोच्च अध्यात्म वेन्द्र, परिप्रेक्ष्य, अभ्यंग मस्त नस्त की गई तथा आयुर्विदिक चिकित्सा में महाराष्ट्र गुरुध्दुर और महाराष्ट्रीय रूप से उपयोग किया गया। इस 2 मह के समय से सार्वजनिक अवबाहुक उपचार के उपरांत शुद्ध एवं सकल क्रिया इन लक्षणों में उत्साह लाम देखा गया।