A CLINICAL STUDY ON THE ROLE OF NASYA KARMA IN THE MANAGEMENT OF AVABAHUKA (FROZEN SHOULDER) WITH VATADA TAILA

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ABSTRACT

Avabahuka was first introduced by Susruta (500 B.C) where pain and stiffness of shoulder joint leads to severely restricted movement of hand. It is correlated with frozen shoulder in modern also known as adhesive capsulitis which carries the similar complains of avabahuka. It is the 3rd most common cause of musculoskeletal consultation in primary care. Ayurveda has explicitly mentioned that avabahuka is caused by vata dosa and sosana of sle-samaka kapha, so vatanasana and slesamaka kapha posana should be the aim of samprapti vighatana towards the cure of the disease. As the disease is purely caused by affliction of vayu and the symptoms come due to the aggravation of vayu so vatanasaka therapy may be advocated as remedy of the same. There are several vata nasaka drug and vata nasaka therapies but in present study vatada taila (almond oil) has been taken as a trial drug in the form of nasya (pratimarsha). The present study is an effort towards elimination of the disease avabahuka (frozen shoulder) with safe and effective measure.

Keywords: avabahuka, frozen shoulder, vatada oil, etc.

INTRODUCTION

There is a proverb in Hindi “Apna Hath Jagannath” means all the works or creations mainly dependent over the Hands. Susruta also mentioned that Hasta is Pradhan Yantra. Hand should be powerful, strengthful and free. But in some diseases movement of this hand become restricted, painful which causes obstruction towards creation. Among all the joints of the human body the shoulder has the greatest range of motion. This allows complex movements and functions to be carried out, and is of vital importance to the activity of daily living and work. Avabahuka an ailment first introduced by Susruta (500 B.C.) where pain and stiffness of shoulder joint leads to severely restricted movement of the hand. Frozen shoulder, a term coined by Codeman in 1934, which is also called as adhesive capsulitis which carries the similar complains of avabahuka. This problem puts a huge amount of strength on patients interfering productivity of the life.¹
Avabahuka is a condition caused by vitiated vata dosa, localizes in amsapradesh (shoulder region) and does the samkoca of siras leading to the manifestation of sirasamkocha and bahu praspadana haratvam which is intimately same to the features of frozen shoulder. Frozen shoulder affects patient aged 35 years to 70 years and it is estimated that 3% of people develop the disease over their lifetime. Self reported prevalence of shoulder pain is estimated to be between 16% and 26%. It is the third most common cause of musculoskeletal consultation in primary care. Males tend to be affected less frequently than female and there is predilection for race. In modern medicine several anti inflammatory analgesics are being used. Some major exercises advised and some local application of analgesic ointments is used. But no such effective results found.

As Ayurveda has clearly mentioned that the disease is caused by purely Vata dosa and sosana of Slesmaka kapha so vatanasana and slesmaka kapha posana should be the aim of the samprapti vighatana towards the cure of the disease. Taila is the best vatanasaka dravya (pacifies vata) and it is snehad-ravya, so it is kaphaposaka (nourishes kapha). Nasya karma is one of the important procedures of classical panchakarma, particularly to the diseases of urdhajatru. And this karma or therapy is employed to the diseases of Sira, Skandha and Baksha. So considering Guna karma visesa, nasya karma has been taken as a therapy in present study. As Vatadaa taila is a nutritious agent contains the properties of sneha like Guru, sara, snigdha, drava, mridu etc. so it has been taken as an weapon to cure Avabahuka (frozen shoulder)through the nasal route application in an ethical manner (nasya karma). The therapies which are easily available, easily applicable, painless, cost effective as well as safe called the unique one. Considering all these factors like genesis of the disease samprapti bighatana (breaking of the pathogenesis), ethical support in selection of the drug and therapy vatadaa taila nasya has been selected as a remedy towards cure of the ailment avabahuka.

The present study is an effort towards elimination of the disease Avabahuka (frozen shoulder) with safe and effective measure.

NIRUKTI (DERIVATIVE SIGNIFICANCE) OF AVABAHUKA / APABAHUKA
Apabahuka is composed of two words “Apa” and “Vahuka”. The very word Apa means ‘Viyoga’ ‘Vikrutau’ which means dysfunction or separation. And the very word ‘Vahuka’ portrays the following meaning: ‘Vahu’ meaning the upper limb which is one among the sadangas. According to Sanskrit literature the word Apabahuka means as bad stiffness and muscle spasm in the arm. The prefix ‘Aba’ is used instead of ‘Apa’ of the words Apabahuka. Apabahuka and Ababahuka literally bear the same meaning.

PARIBHASA OF APABAHUKA (DEFINITION)
Apabhuka is a disease caused by kupita vata dosa localizing around the amsa pradesa causing the shosana of amsa sandhis, thereby leading to akunchana of sira at that site and giving rise to bahu praspandana haratwam.

AIM & OBJECTIVES:
- To assess the role of snehana nasya/ vatadaa taila on Avabahuka.
- To prove its treatment safe, effective and unique.

MATERIALS AND METHODS:
A single group study over samples with drug.

SELECTION OF THE SAMPLES:
Initially fifty six patients have been selected in outpatient department (OPD) of IPGAE & R at SVSP Hospital, APC road, kol -09 for the clinical study of this research program. The following subjective criteria and exclusion criteria have been followed during selection of the patients.

IAMJ: Volume 6, Issue 4, April, 2018 804
in this trial. Finally thirty (30) patients included in trial programme and they all continued the scheduled trial therapy for consecutive fifteen (15) days.

INCLUSION CRITERIA
The patients taken in this trial were according to the following inclusion criteria-

A randomized clinical study
- Patients were randomly selected irrespective of sex, occupation, caste etc.
- The patients between ages of 30 to 70 years
- Patients fit for nasya karma
- The clinically diagnosed patients of frozen shoulder with confirmatory tests for shoulder joint (pain, stiffness, restriction of movement) were included in this study.

EXCLUSUION CRITERIA
- Prolonged shoulder immobility –
  1. Trauma
  2. Overuse injury
  3. Surgery
- Systemic diseases as
  (a) Hyperthyroid
  (b) Hypothyroid
  (c) Cardiovascular diseases
  (d) Parkinson’s disease or MND etc

Discontinuation Criteria -
- Any adverse effect of the therapy if seen.
- Any acute or severe illness.
- Patient not willing to continue the treatment.

ASSESSMENT CRITERIA:
Assessment on the basis of subjective and objective parameters –

(A) Subjective parameters
- Pain in the shoulder joint
- Stiffness of the shoulder joint

(B) Objective parameters
- Range of shoulder movements (Goniometer examination)
- Along with some Laboratory investigations also performed for diagnosis and differential diagnosis
- Blood – Hb%, TC, DC, ESR, FBS, Lipid profile (If possible)
- Radiological – X – ray shoulder joint AP and Lat view

DESIGN
In this present study only one group that is trial group is taken, no division or category maintained.

RECIPES
Vatadaa taila has been taken as the trial drug introduced through the nostril ethically which is designated as ‘Nasyakarma’ (Pratimarsa nasya or snehana nasya). The vatadaa taila (Almond oil) procured from the bazaar after certification of specialist ayurvedic personnels and keeping view on the R & D clearance of the company made oil.

ASSESSMENT OF RESULTS:
Assessment of results has been done after the course of therapy. It is mentioned earlier that the improvement in clinical sign and symptoms have been taken into considerations as the parameter of the assessment of results. Besides these parameters certain laboratory investigations have been performed before treatment and after treatment.

THE SUBJECTIVE PARAMETER:
Clinical improvement or relief of signs and symptoms has been taken into consideration. Scoring system as per opinion of Carolyn M Hicks 1999 have been followed in this study to evaluate the effectiveness of the therapy in comparison to before and after treatment.
Table 1: Scoring system followed the two major symptoms pain and stiffness.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Finding</th>
<th>Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>No pain</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Mild pain – particularly on moving the shoulder, able to continue routine work with difficulty.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Moderate Pain – pain felt on movement, at rest, interfering with routine work.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Severe Pain – felt on movement and also at rest, disturbing sleep unable to carry out most of the routine work.</td>
<td>3</td>
</tr>
<tr>
<td>Stiffness</td>
<td>No stiffness</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Mild stiffness – particularly on moving the shoulder, able to continue routine work with difficulty</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Moderate stiffness – pain felt on movement, at rest, interfering with routine work</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Severe stiffness – felt on movement and also at rest, disturbing sleep unable to carry out most of the routine work</td>
<td>3</td>
</tr>
</tbody>
</table>

The range of movement of arm also been estimated before treatment and after treatment as follows:

**OBJECTIVE PARAMETERS:**
X-ray shoulder joint, blood for complete blood count, sugar estimation was done. But these parameters have been estimated neither statistically nor mathematically because of their less importance in connection with frozen shoulder.

**GROSS EFFECT OF THERAPY**
Gross effect of therapy has been assessed in terms of complete remission, marked improvement, moderate improvement and mild improvement which are as follows –
- Mild improvement: below 25% in relief of pain and stiffness, simultaneously improvement of range of motion below 25%.
- Good improvement: 25% - 50% improvement in symptoms like pain and stiffness as well as range of motion.
- Very good: 51% to 75% remission as well as improvement in range of motion.
- Excellent: 76% to 100% relief of symptoms have been taken into consideration as excellent.

**FOLLOW UP**
All the patients were followed and the observations of subjective and objective parameters were recorded after 15 days of the study.

**CLINICAL STUDY**
As the Avabahuka of ayurvedic medicine is close similar to the disease ‘frozen shoulder’ of modern medicine also a lifestyle disorder mainly caused by ‘Ajatha Balamarambha’ (work beyond capability) like heavy weight lifting, excessive pulling, pushing etc. Therefore in present project work an effort has been taken through clinical study to assess the role of snehana nasya or pratimarsa nasya with Vatadaa/Vatada taila in the case of avabahuka. So, present clinical study may be called as a hope towards the suffering humanity of this very ailment.

**ANALYSIS OF DATA:**
The data achieved before and after treatment from the scoring system of pain and stiffness and from the range of motion assessment have been calculated statistically in students ‘t’ test method to establish the result whether significant or not.
OBSERVATION AND RESULT:

Table 2: Showing effect of therapy on major sign and symptoms (N=30)

<table>
<thead>
<tr>
<th>S.no</th>
<th>Major Complaints/ Sign and Symptoms</th>
<th>Means Scoring</th>
<th>% of Relief</th>
<th>SD±</th>
<th>SE±</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>B.T</td>
<td>A.T</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Pain</td>
<td>1.70</td>
<td>0.70</td>
<td>58.82</td>
<td>1.26</td>
<td>0.231</td>
<td>4.329</td>
</tr>
<tr>
<td>2</td>
<td>Stiffness</td>
<td>1.73</td>
<td>0.63</td>
<td>63.58</td>
<td>1.27</td>
<td>0.230</td>
<td>4.780</td>
</tr>
<tr>
<td>3</td>
<td>Flexion</td>
<td>162.33</td>
<td>166.33</td>
<td>2.46</td>
<td>6.830</td>
<td>1.247</td>
<td>3.200</td>
</tr>
<tr>
<td>4</td>
<td>Extension</td>
<td>43.33</td>
<td>48.00</td>
<td>10.785</td>
<td>7.071</td>
<td>1.290</td>
<td>3.620</td>
</tr>
<tr>
<td>5</td>
<td>Internal rotation</td>
<td>43.16</td>
<td>47.33</td>
<td>9.66</td>
<td>5.08</td>
<td>0.92</td>
<td>4.53</td>
</tr>
<tr>
<td>6</td>
<td>External rotation</td>
<td>68.00</td>
<td>73.83</td>
<td>8.57</td>
<td>7.245</td>
<td>1.324</td>
<td>4.41</td>
</tr>
<tr>
<td>7</td>
<td>Abduction</td>
<td>152.83</td>
<td>156.66</td>
<td>2.50</td>
<td>5.24</td>
<td>0.96</td>
<td>3.98</td>
</tr>
</tbody>
</table>

Table 3: Showing on over all response of therapy (N=30)

<table>
<thead>
<tr>
<th>S.no</th>
<th>On Over All Response</th>
<th>No. of Patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Excellent</td>
<td>4</td>
<td>13.30</td>
</tr>
<tr>
<td>2</td>
<td>Very Good</td>
<td>5</td>
<td>16.70</td>
</tr>
<tr>
<td>3</td>
<td>Good</td>
<td>8</td>
<td>26.70</td>
</tr>
<tr>
<td>4</td>
<td>Poor</td>
<td>13</td>
<td>43.30</td>
</tr>
</tbody>
</table>

DISCUSSION AND SUMMARY

Decay, Degeneration and Death are inevitable. Birth, gradual grown up, later death are the usual phenomenon of the life cycle. Several health hazards must have to be faced all over the life. It is a great truth of the living being. In Ayurveda vatavyadhi are maximum in number among nanatmaja vyadhi, so Vayu may be called as the pivot of the cycle which carrying the life towards the extreme. Avabahuka is such a disease mentioned in Ayurveda not vividly or descriptively, but it is a great health hazards to the human being. The disease frozen shoulder/Adhesive capsulitis of western medicine is carrying the similar features of Avabahuka of Ayurvedic medicine. So in present study frozen shoulder has been taken as a modern correlation of avabahuka. The present research work dealt with this problem and its remedies. The term first found in Susruta Samhita (500 BC), later other classics like Bagbhatta, Madhavakar, Sarangadhara and Bhavmisra have mentioned the term avabahuka in their respective texts. During review of the literatures and going through the derivation it might be defined as a disease caused by kupita vata dosa localizing around the amsa pradesa causing the soshana of amsasandhis, thereby leading to akunchana of sira at that site and giving rise to bahupraspandana haratwam. In consideration to the ayurvedic etiopathogenesis of the disease it reveals that the vata prakopaka etiology in general is mainly responsible for the genesis of the disease.

The specific etiology like weight lifting, excessive movements of the hands, Dukkhasajjya (mal sleeping posture) particularly hand under the head during sleeping are the main causative factors. Aggravate vata spreads all over the body(prasara) but it takes place specially at the area of amsasandhi (sthanasamsraya) due to the prior ‘khabaigunya’ and leads to dosa dusya sammurchana at the said place caused by abhighata or other etiologies mentioned earlier.

In modern literature review the etiology of frozen shoulder are more or less same to the view of ayurveda but conceptually immune complexes have been also taken as an etiology in modern medicine. Some diseases like pneumonia, diabetes come in association with this ailment. The symptomatology
in ayurvedic medicine is soshana, samkochana and ruyia which are also similar to the symptomatology like pain, stiffness around the shoulder, mentioned in western medicine.

The line of management of modern medicine is not so satisfactory. Some exercises and analgesics are advised and is said to be self limiting one. In ayurveda there are several medications as well as purificatory therapy(shodhana) and rasayana therapy (posana/brumhana) are indicated in vata predominant diseases in general. As the disease is purely caused by affliction of vayu and the symptoms come due to the aggravation of vayu so vatanasak therapy may be advocated as a remedy of the same. The reduction of flexion, extension, internal rotation, external rotation and abduction, these are the usual findings and as pain and stiffness are the intensive features, so aims and object of the treatment is to provide relief to the patient by reducing the complaints. The line of management in the ayurvedic therapy is Brumhana nasya, paschadbbhaka ghrutapana, swedana, abhyanga etc.

The second part of this work is an important part that is the selection of drug. There are several vata nasak drug and vata nasak therapies but in present study vatada taila (almond oil) has been taken as a trial drug in the form of nasya (pratimarsha). It is known that taila is the best remedy for the vata afflicted diseases7.

[Why this oil (VATADA TAILA) selected:
According to Acharya Bagbhatta, vrumhaniya nasya is indicated in apavahuka. Vruhatravis and Nighantas advocated that Vadama / Vatada is a vrumhaniya dravya.

According to Bhavamisra/ Bagbhatta the Guna of the oil and the Guna of the original dravya (sway-soni) are same. (Bhavaprakash, tailavarga). So it can easily be inferred that the Vatada taila is also vrumhaniya. That is why this Vadama oil is chosen for the present study.]

Vatada is a sneha dravya and vrumhaniya dravya having guru, snigdha, sara, manda, drava properties which are called as posakaguna, so vataadha taila may pacify vata by its posaka and snehana guna. As Avabahuka takes place in shoulder region (amsasandhi) so vyana vayu is mainly responsible for the genesis of the disease. So nasyakarma could pacify vata by reducing rukshaguna.

The ethical division procedures doses, indication, contraindication and the utility have been tried to furnish in a methodical manner. The clinical trial where fifty five patients irrespective of sex, religion, occupation, educational status have been chosen to undergo the clinical trial. The trial conducted at IPGAE&R at SVSP hospital 294/3/1,Acharya Prafulla Chandra Road , Kolkata 700 009, West Bengal and selection of patients done after following the certain selection criteria as well as exclusion criteria.

Almond oil of good quality procured from the bazaar by the certification of expert ayurvedic personnel all the patients taken their therapy by instilling three drops of vatada oil into each nostril daily as per ethical manner following local snehana and mridu sweden for consecutive fifteen days.

The data and records before treatment as well as after treatment have been kept and follow up have been met every week.

Assessment of results done purely on the basis of remission of features like pain, stiffness, flexion, extension, external rotation, internal rotation, abduction.

On the basis of percentage of relief as well as statistical analysis, results have been assessed. It have been revealed that the features like pain and stiffness have reduced markedly that is about 58.82% and 68.58% respectively having p value less than 0.001 that is highly significant. On the other hand the objective parameters like flexion, extension, external rotation, internal rotation, abduction showed improvement with enhancement of their respective angles with percentage of relief by 2.46%, 10.78%, 9.66%, 8.57%, 2.50% where p values found <
0.01,<0.001,<0.001,<0.001,<0.001 respectively and the average response of therapy found excellent 13.3%, very good 16.7%, good 26.7%, poor 43.3%. In above findings it is clear that the curative value of trial therapy and the drug i.e. *nasya* with *vatada taila* is highly significant. No such adverse effect has been observed during the therapy even in routine examination of blood, LFT, urea and creatinine. So the therapy may be declared as safe and effective one. Though the mode of action of the drug and therapy already been discussed earlier yet at last it could be stated that *vatada taila* (almond oil) is a good *vrumhaniya vatanasak dravya* can cure the disease *avavahuka* in its application through nasal route.

**CONCLUSION**

- *Avabahuka* of *ayurvedic* medicine may be correlated with the frozen shoulder/adhesive capsulitis of modern medicine
- Aggravated *vata* spreads all over the body (*prasara*), but it takes place especially at the area of *Amsasandhi* (*sthanasamsraya*) due to the prior “*khabaigunya*” and leads to the *dosa dusya sammurchana* at the staid place caused by *abhighata* or other etiologies.
- *Vatadaa taila* is a potent *vatanasak* and *rasayana dravya* that have the property of pacifying *vatika* disorders.
- *Nasya karma* specially *pratimarsa nasya* with *vatada taila* could cure *avabahuka* in a dose of 3 drops twice into each nostril, and might be effective to the other *urdhajatrugata vatika vikara*.
- *Vatadaa taila* reduces pain and stiffness significantly. The pain and stiffness may be reduced up to about 59% and 69% respectively. Statistically these could show highly significant with *p*<0.001.
- It may enhance range of motion like flexion, extension, external rotation, internal rotation, abduction and significant with *p* < 0.01, <0.001, <0.001, <0.001, <0.001, <0.001 respectively.
- Average curative effect of *vatada taila* as *nasya* in a dose of 3 drops twice daily in both nostril for fifteen consecutive days are excellent 13.3%, very good 16.7%, good 26.7% and poor 43.3%. And the therapy may be declared as safe and effective.

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**Source of Support:** Nil

**Conflict Of Interest:** None Declared