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Evaluation of the effect of *Marma Chikitsa* in the management of Frozen Shoulder (*Avabahuka*) - A Pilot Study

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ABSTRACT

Frozen shoulder (adhesive capsulitis - capsule thickens and tightens around the shoulder joint, restricting its movement) is a condition characterized by stiffness and pain in the shoulder joint, consists. Movement of the shoulder joint is restricted, with loss of active and passive range of motion, and leads to lack of use due to pain. Stiffness is also present there. *Avabahuka* is one such disease that hampers the day-to-day activity of an individual. *Acharya Sushruta* has classified *Avabahuka*, a disease of the *Amsa Sandhi* (shoulder joint), under the eighty varieties of *Vata Vyadhi*. *Amsa Shosha* (wasting of the shoulder) can be considered the preliminary stage of the disease, where loss or dryness of *Sleshaka Kapha* from *Amsa Sandhi* occurs. Its growing prevalence in today's world necessitates efficient management with quick and long-lasting effects. Therefore, in such cases, *Marma Chikitsa*, an alternate *Ayurvedic* therapy, can be recommended. Multiple sittings are required for better results. *Avabahuka* can be treated with improvements, regardless of its severity or duration. In present pilot study, emphasis is laid upon eight specific *Marma Sthan* (or energy points) for the management of *Avabahuka* by considering the related literature, and an attempt is made to treat the patient of Frozen Shoulder (*Avabahuka*) by *Marma Chikitsa*.

Key words: *Avabahuka*, Frozen shoulder, *Marma Chikitsa*, *Vata Vyadhi*

INTRODUCTION

The term "frozen shoulder" was first introduced by Codman in 1934. The three hallmarks of this disease are insidious shoulder stiffness, severe global pain even at night and near complete loss of passive and active external and internal rotation of the shoulder joint. It presents usually in the sixth decade of life, and onset

before the age of 40 is very uncommon. The peak age is 56, and the condition occurs slightly more often in women than men. In 6-17 % of patients, the other shoulder becomes affected, usually within five years, and after the first has resolved. The non-dominant shoulder is slightly more likely to be affected. A patient with frozen shoulder traditionally progresses through three overlapping phases.^[1]

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- **Painfull / Freezing Phase** - Inflammation in the shoulder joint capsule causes pain, which worsens when the shoulder is moved. When there is a shoulder pain that is aggravated by motion there is tenderness while using that shoulder. At this stage pain is the main problem not stiffness. It lasts for 6-12 weeks.
- **Frozen Stage** - Inflammation damages tissues & as it heals scar tissue forms. The normally loose capsule thickens & shrinks. Pain gradually subsides but stiffness worsens. Pain often reduces during

this stage, range of motion decreases significantly. It can last for 4-12 months.

- **Thawing stage** - A year or more of physical therapy may be needed to “thaw” (restore the mobility). The progress is gradual. Mean duration from onset of frozen shoulder to the greatest resolution is over 30 months. It lasts for 12-42 months.

Frozen Shoulder is closely resembles to *Avabahuka*. *Avabahuka* is one such disease that hampers the day-to-day activity of an individual like ability to carry out daily activities like dressing, eating, personal hygiene and work. *Acharyas* mentioned *Avabahuka* in *Vatavyadhi* chapter.^[2] *Vatavyadhi* is one among *Astamahagada*^[3] is itself explanatory with regard to the consequence caused by *Avabahuka*.^[4] It is considered to be a disease that usually affects the shoulder joint. Modern medical science has no such long term effective modality for frozen shoulder. The side effects of steroids and anti-inflammatory drugs are well known. Moreover, surgery is not advised if the symptoms don't create more hurdles in daily life activities. As *Avabahuka* is a self-limiting disorder, *Ayurveda* treatment can give a better life style with reduced symptoms. In present pilot study an attempt is made to treat the patient of Frozen Shoulder (*Avabahuka*) by *Marma Chikitsa*.

AIM AND OBJECTIVES

To evaluate the effect of *Marma Chikitsa* in the management of Frozen Shoulder (*Avabahuka*)

MATERIALS AND METHODS

Source of patient

The patients suffering from Frozen Shoulder (*Avabahuka*) attending the OPD of Pt. Khushilal Sharma Govt. *Ayurvedic* Hospital Bhopal was screened and allocated to the study. Overall, 10 patients were included in the study fulfilling the diagnostic, inclusion, and exclusion criteria. A detailed history taking and physical examination were carried out in these patients. The clinical data along with the elaborated assessment of the condition were recorded in specially designed case proforma. Among 10 patients, 7

completed the treatment 3 patients did not complete the whole treatment due to unknown causes.

Study design

The present study is a pilot clinical study conducted in the department of *Rachna Sharir* of Pt. Khushilal Sharma Govt. *Ayurvedic* College and Institute Bhopal.

Study period - 10 days

Inclusion Criteria

- Patient of either sex presenting with symptoms of Frozen Shoulder (*Avabahuka*) as mentioned in diagnostic criteria.
- Patient age between 20-70 years.
- Patients who wish to sign the written consent to participate in the study

Exclusion Criteria

- Pregnant women and lactating mothers.
- Patients suffering from Shoulder Joint Arthritis.
- Patients with uncontrolled Blood Sugar Level.
- Patients who need Surgical Care or have undergone any Surgical Intervention.
- Patients having Fracture and Dislocation in the Shoulder Joint.
- Patients having chronic systemic illness.
- Patients having any history of Malignancy, Tuberculosis, HIV, etc.

Criteria for assessment

The assessment of the effect of treatment will be based on subjective and objective parameters of disease which will be recorded before and after treatment. The symptoms will be graded on the basis of the scoring system to be adopted below -

The special scoring system for Frozen Shoulder (*Avabahuka*), used in the Shalya Tantra Department of I.P.G.T. and R.A. will be adopted for the statistical analysis of the overall effect of *Marma Chikitsa*.^[5]

1. Pain

SN	Pain	Grade
1.	VAS range in between 0-2	0
2.	VAS range in between 2-4	1
3.	VAS ranges in between 4-6	2
4.	VAS ranges in between 6-8	3
5.	VAS ranges in between 8-10	4

2. Stiffness

SN	Stiffness	Grade
1.	No stiffness	0
2.	Stiffness, no medication	1
3.	Stiffness, relieved by external application	2
4.	Stiffness, relived by oral medication	3
5.	Stiffness not responded by medicine	4

3. Flexion

SN	Flexion	Grade
1.	161° - 180°	0
2.	121° - 160°	1
3.	81° - 120°	2
4.	41° - 80°	3
5.	0° - 40°	4

4. Extension

SN	Extension	Grade
1.	41° - 60°	0
2.	31° - 40°	1
3.	21° - 30°	2
4.	11° - 20°	3
5.	0° - 10°	4

5. External Rotation

SN	External Rotation	Grade
1.	81° - 90°	0
2.	61° - 80°	1
3.	41° - 60°	2
4.	21° - 40°	3
5.	0° - 20°	4

6. Abduction

SN	Abduction	Grade
1.	161° -.180°	0
2.	121° -.160°	1
3.	81° -.120°	2
4.	41° -.80°	3
5.	0° -.40°	4

7. Tenderness

SN	Tenderness	Grade
1.	On pressing patient does not feel any pain	0
2.	On pressing patient feels pain, but no sign on the face (wincing)	1
3.	On pressing pain appears on the face of the patient (wincing)	2
4.	Wincing of the face and withdrawal of the affected part on pressure	3
5.	Patient does not allowed to touch	4

8. Sleep

SN	Sleep	Grade
1.	More than 8 hours	0
2.	6-8 hours	1
3.	3-6 hours	2
4.	Less than 3 hours	3

5.	No sleep	4
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Overall assessment criteria

An overall assessment of *Marma Chikitsa* will be done based on improvement in the symptoms.

1.	Cured	100% improvement in symptoms and no recurrence during the follow-up period.
2.	Marked Improvement	>75 - <100%
3.	Moderate Improvement	>50 - ≤75%
4.	Mild Improvement	>25 - ≤50%
5.	No Improvement	≤25%

Treatment protocol

The treatment involved the administration of *Marma Chikitsa*. The present pilot study includes stimulation of 8 Marma points that is *Kshipra, Kurpar, Ani, Urvi, Kakshadhara, Amsa, Amsaphalaka, and Brihati Marma* & these will be stimulated 15 -18 times on average in a single sitting.^[6] The details of the administration are as follows.

Duration - 10 days

Follow-up - 07 days

SN	Marma point	Stimulation time	Frequency	Duration
1.	<i>Kshipra</i>	0.8	15-18 Times	Twice a day
2.	<i>Kurpar</i>	0.8	15-18 Times	Twice a day
3.	<i>Ani</i>	0.8	15-18 Times	Twice a day
4.	<i>Urvi</i>	0.8	15-18 Times	Twice a day
5.	<i>Kakshadhara</i>	0.8	15-18 Times	Twice a day
6.	<i>Amsa</i>	0.8	15-18 Times	Twice a day

7.	<i>Amsaphalaka</i>	0.8	15-18 Times	Twice a day
8.	<i>Brihati</i>	0.8	15-18 Times	Twice a day

- Steady and moderate pressure will be applied slowly and gently.
- Pressure will be increased gradually depending upon pressure strength.

Statistical Analysis

For assessing the improvement of symptomatic relief and to analyze it statistically, the observations were recorded before and after treatment. The mean, mean difference, SD, SE, and Wilcoxon sign rank test were calculated from the observations recorded.

Symp toms	Mea n BT	Mea n AT	Mea n Diffe rence	S D	SE	% of relief	t valu e	P valu e	Resu lt
Pain	2.71	1	1.71	0.82	0.31	63.09%	3.2863	0.0065	Very significant
Stiffness	2.57	1.29	1.29	1.11	0.42	50.19%	2.2984	0.0403	significant
Flexion	2.43	1.00	1.43	1.00	0.38	58.84%	2.7050	0.0191	significant
Extension	2.57	1.14	1.43	0.90	0.34	55.64%	2.8475	0.0147	significant
External rotation	2.57	1.29	1.29	0.76	0.29	50.19%	2.7557	0.0174	significant
Abduction	2.14	1.00	1.14	0.82	0.31	53.27%	1.92	0.0787	Not significant
Tenderness	2.71	0.86	1.86	0.90	0.34	68.63%	3.433	0.0050	Very significant
Sleep	2.43	1.00	1.43	0.58	0.22	58.84%	3.3330	0.0060	Very significant

Pain - The mean score of Pain in this study, before treatment was 2.71 and after treatment, it was reduced to 1. So, the mean difference was 1.71, with a percentage relief of 63.09% which was statistically very significant (P=0.0065).

Stiffness - The mean score of Stiffness in this study, before treatment was 2.57 and after treatment it was reduced to 1.29. So, the mean difference was 1.29, with percentage relief of 50.194% which was statistically significant (P=0.0403).

Flexion - The mean score of Flexion in this study, before treatment was 2.43 and after treatment, it was reduced to 1.00. So, the mean difference was 1.43, with a percentage relief of 58.84% which was statistically significant (P=0.0191).

Extension - The mean score of Extension in this study, before treatment was 2.57 and after treatment, it was reduced to 1.14. So, the mean difference was 1.43, with a percentage relief of 55.642% which was statistically significant (P=0.0147).

External Rotation - The mean score of External rotation in this study, before treatment was 2.57 and after treatment, it was reduced to 1.29. So, the mean difference was 1.29, with a percentage relief of 50.194% which was statistically significant (P=0.0174).

Abduction - The mean score of Abduction in this study, before treatment was 2.14 and after treatment, it was reduced to 1.00. So, the mean difference was 1.14, with a percentage relief of 53.271% which was not statistically significant (P=0.0787).

Tenderness - The mean score of Tenderness in this study, before treatment was 2.71 and after treatment, it was reduced to 0.86. So, the mean difference was 1.86, with a percentage relief of 68.63% which was very statistically significant (P=0.0050).

Sleep - The mean score of Sleep in this study, before treatment was 2.43 and after treatment, it was reduced to 1.00. So, the mean difference was 1.43, with a percentage relief of 58.84% which was very statistically significant (P=0.0060).

Overall assessment of the intervention

SN	Overall Assessment	Percentage relief	No. of patients	Percentage
1.	Complete relief	100%	00	00
2.	Marked improvement	>75%	04	57%
3.	Moderate improvement	>50%	03	43%
4.	Mild improvement	>25%	00	00
5.	No improvement	00%	00	00

DISCUSSION

Due to disturbance of daily activities, patients become panics who are suffering from *Avabahuka*. There are many treatment protocols given in classics to treat *Avabahuka*. *Marma Chikitsa* is one of them. In modern science, *Avabahuka* can be correlated with Frozen Shoulder. Frozen shoulder is a common troublesome problem among the therapeutic disorders. Although the disease is not fatal but its duration and attack of pain at night makes the life of sufferer miserable and crippled. *Avabahuka* is a disease which hampers most of the functions of the hand. Among the category of diseases it is been considered *Vata* disorder as an important entity. *Vata* disorders are considered under the heading of *Ashta Maha Gadas*. *Avabahuka* is one among them and *Vata Kapha* dominant disease. It is affecting the *Amsa Moola* (root of shoulder girdle) exhibits the symptoms in hand. It is often said that "the pain is often severe enough to disturb the sleep". Losses of *Bahu Prasbandana* (movement of arm), *Stambha* (stiffness) and *Shoola* (pain) of the shoulder joint are the cardinal features of *Avabahuka*. The *Marmas* can be considered as the various points of nervous, vascular and muscular system, which plays a vital role in the normal functioning of the joints. In reference to etiopathogenesis of *Avabahuka*, *Sushruta* has clearly stated that aggravated *Vata* localised in the region of the shoulder causes wasting of local musculature (*Snayu*), ligaments (*Kandara*), constricts

the veins (*Sira*) present there and produces *Avabahuka*.

Probable mode of action of *Marma*

Marma Chikitsa is a traditional Indian therapy that offers various benefits such as relieving muscle tension, promoting better sleep, removing energy blockages, clearing obstructions of *Shrotas*, pacifying *Vata Dosha*, controlling *Vyana Vata*, balancing the functioning of the autonomic nervous system, and improving physical flexibility. This therapy is particularly beneficial for people who experience *Avabahuka*, a condition characterized by stiffness, rigidity, and degeneration caused by *Ama* and *Vata* aggravation. *Marma Chikitsa* can reduce the vitiation of *Vata* and relieve *Ama* aggravation, thus alleviating the symptoms of *Avabahuka*.

CONCLUSION

The results of a clinical trial on *Marma Chikitsa* have shown promise in improving the symptoms of *Avabahuka*, also known as Frozen Shoulder. No complications were observed in the patients at the end of the study, indicating that this treatment protocol could be a good option for managing a Frozen Shoulder. However, it's important to note that this was a pilot study with a very small sample size and a short follow-up period. As a result, drawing conclusions about the effectiveness and safety of the treatment may be challenging. A larger clinical trial with a longer follow-up period will be necessary to better understand the treatment's effectiveness and safety.

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