



## EFFECT OF *SUCHIVEDHAN* IN FROZEN SHOULDER (*AVABAHUK*)- A RESEARCH ARTICLE

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### ABSTRACT

Frozen shoulder, also known as Peri-arthritis or Adhesive capsulitis, causes a significant loss of motion. This typically occurs in cycle of 3 stages, painful phase, stiff phase and thawing phase. Pain is the most common symptom that brings the patient to a physician's attention, because it is universally understood as a signal of disease.<sup>[1]</sup> There are several remedies in the form of drugs or injections in the modern science for relieving pain. Such remedies are induced generally NSAIDs and Steroids. They irritate gastric mucosa and produce hyperacidity and even peptic ulcer disorder. In textual references of Ayurveda, the disease Frozen Shoulder is closely related to *Avabahuka*. In this condition, the vitiated humour *Vata* is localized in

the shoulder region. When *Vata* gets vitiated, it dries up the ligaments of the shoulders and constricts the *Snayu* present there and causes *Avabahuka*.<sup>[2]</sup> Actually, *Suchivedha* can be considered as modified form of *Siravedha* in cases where *Sira* is not clearly visible.<sup>[3]</sup> So, *Suchivedhan* to the maximum tenderness points of shoulder may release the *Vataavrodha* and ultimately, pain will be decreased. So, it was decided to evaluate the efficacy of not-so-

evaluated *Suchivedhan karma chikitsa* against a frozen shoulder and to evaluate its scientific parameters.

**KEYWORDS:** *Avabahuka*, Frozen shoulder, *Suchivedhan*, Adhesive capsulitis, pain.

## INTRODUCTION

Frozen shoulder syndrome causing stiff and painful shoulder is a common disability in the middle aged population. The diagnosis is often used for any painful shoulder condition associated with a loss of motion, but it is important to understand the cause of the symptoms in order for treatment to proceed effectively. In 1934, Codman first described the term 'Frozen Shoulder', as an idiopathic painful restriction in the range of shoulder joint movement, in the presence of normal plane radiograph.<sup>[4]</sup> Then Naviaser noted the pathology of this condition. He noted that pathology was present in the capsule of the shoulder joint and therefore called it 'Adhesive capsulitis'.<sup>[5]</sup>

Human shoulder is the most mobile joint in the body. It is a synovial joint of the ball and socket variety. The shoulder joint enjoys a great freedom of mobility at the cost of stability. There is no other joint in the body which is more mobile than the shoulder. This wide range of mobility is due to laxity of its fibrous capsule, and the large size of the head of the humerus as compared with the shallow glenoid cavity.

The condition *Avabahuka* is named so, as it affects *Amsa Sandhi*. The condition resembling frozen shoulder is *Avabahuka*. According to *Acharya Sushruta*, when *Vata* gets vitiated at *Amsa Sandhi*, it causes wasting of the *Amsa bandhana* and *Sira Aakunchana*. Such condition is called as *Avabahuka*.<sup>[6]</sup> In *Sushruta Samhita*, there is a conflict regarding treatment of *Avabahuka* as in *Sharira Sthana* there is indication of *Siravedha* but in *Chikitsa Sthana*, *Sushruta* stated that all the procedures indicated in *Vata Vyadhi chikitsa* can be done except *Siravedha*. So, it is a matter of thinking that whether *Siravedha* can be done in *Avabahuka* or not. That's why; *Suchivedhan* seems to be better in this condition.

**AIM-** Effect of *Suchivedhan* in Frozen shoulder (*Avabahuk*).

## OBJECTIVES

1. To evaluate the efficacy of *Suchivedhan* in frozen shoulder.
2. To achieve immediate relief of pain in frozen shoulder.
3. To evaluate the improvement in the movements of arm and shoulder.

4. To reduce the cost of management of frozen shoulder.
5. To avoid the adverse effects of modern medicines (e.g. steroids and NSAIDs).
6. To avoid the modern surgical operative in its management.

## MATERIALS AND METHODS

**Instruments** - Disposable Needle 26 number, Goniometer, Nadi sweda yantra, Spirit swab, Dry gauge piece, Til tail.

**Place of study-** Patients who report in the OPD and IPD of the hospital, were carefully selected on the basis of diagnostic, inclusive criteria.

**Study design-** Open clinical trial study in the comparative manner containing following two groups-

**Group A-** [Experimental Group]- *Snehana* and *Swedana* and *Suchivedhan karma*.

**Group B-** [Control group]- *Snehana*, *Swedana*.

**Sample size-** Total 60 patients, 30 patients for each group mentioned above.

### Inclusive Criteria

1. Patients diagnosed as frozen shoulder.(adhesive capsulitis)
2. Patients of either sex.
3. Patients of age group 20-60 years.
4. Patients irrespective of caste, religion, economical status.
5. IPD and OPD patients of Hospital, in this institution.
6. All patients having pain and restricted movements at shoulder joint in presence of normal plane radiograph.

### Exclusive Criteria

1. All the patients less than 20 years of age and more than 60 years of age are excluded.
2. All pregnant women.
3. Patient suffering from major trauma having dislocation or fracture at the shoulder region findings in plane radiograph.
4. Patient suffering from any major systemic disorders e.g. HTN, IHD and rheumatoid arthritis.
5. Those patients who need other emergency interventions like surgery and other means are excluded.

6. HIV, HBsAg reactive patients are also excluded.
7. Malignant and Immuno-compromised patients are also excluded.
8. Patients with uncontrolled Diabetes mellitus.

### Criteria for Assessment

#### Subjective Criteria

#### Mobility Gradation Chart

|         |  |
|---------|--|
| Grade1  | Normal movement with no pain               |
| Grade 2 | Restriction of movement with mild pain     |
| Grade 3 | Restriction of movement with moderate pain |
| Grade 4 | Restriction of movement with severe pain   |

#### Pain

Severity of pain as per VAS (Visual analogue scale).

|   |   |   |   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|---|---|---|----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|

#### Gradings of Pain

| VAS scale | PAIN          |
|-----------|---------------|
| 0         | No pain       |
| 1-3       | Mild pain     |
| 4-6       | Moderate pain |
| 7-10      | Severe pain   |

The movements will be assessed measuring the angles using **Goniometer**.

#### Investigations

Blood- Hb%,

BSL ®,

BT, CT

HIV,

HBsAg.

ECG

X-ray - Affected shoulder joint- AP view and lateral view.

#### Procedure

The disposable needle was used only once on the patient and was discarded after it was used once.

DURATION OF TREATMENT-7 days

FREQUENCY- 7 times, once per day.

FOLLOW UP- 0 and 7th day

### Hypothesis

NULL HYPOTHESIS- H<sub>0</sub>- There is no significant difference before and after treatment between group A and group B.

ALTERNATE HYPOTHESIS- H<sub>1</sub>- There is significant difference in results before and after treatment between group A and group B.

### OBSERVATIONS AND RESULTS

**Table 1: Mann Whitney U test for subjective criteria between group A and group B.**

| Subjective criteria | sum of ranks col. a | sum of ranks col. b | Mann Whitney- u | p- value | one/two tailed | median col. a (n=30) | median col. b (n=30) |
|---------------------|---------------------|---------------------|-----------------|----------|----------------|----------------------|----------------------|
| Flexion             | 694                 | 1136                | 229             | 0.0007   | TWO TAILED     | 2                    | 3                    |
| Extension           | 730.5               | 1100                | 265.5           | 0.0049   | TWO TAILED     | 2.5                  | 3                    |
| Abduction           | 667                 | 1163                | 202             | 0.0001   | TWO TAILED     | 2                    | 2.5                  |
| Adduction           | 653.5               | 1177                | 188.5           | <0.0001  | TWO TAILED     | 1                    | 2                    |
| Internal Rotation   | 639                 | 1191                | 174             | <0.0001  | TWO TAILED     | 1                    | 2                    |
| External Rotation   | 643.5               | 1187                | 178.5           | <0.0001  | TWO TAILED     | 1                    | 2                    |

Since p value is <0.001, the level of significance for all factors, there is strong evidence to reject the null hypothesis for all the factors stated above.

**Table 2: Mean, standard deviation and standard error of mean of both groups.**

| OBJECTIVE CRITERIA | GROUPS  | N  | MEAN   | SD     | SEM    |
|--------------------|---------|----|--------|--------|--------|
| PAIN               | GROUP A | 30 | -5.867 | 0.9732 | 0.1777 |
|                    | GROUP B | 30 | -1.133 | 0.5713 | 0.1043 |
| ANGLE              | GROUP A | 30 | 93.33  | 22.02  | 4.021  |
|                    | GROUP B | 30 | 14     | 6.747  | 1.232  |

Test used for objective criteria between both groups – Unpaired t-test.

| Unpaired T- Test   |       |    |                |          |
|--------------------|-------|----|----------------|----------|
| Objective Criteria | t     | df | One/two tailed | p- value |
| PAIN               | 6.355 | 58 | Two tailed     | <0.0001  |
| ANGLE              | 7.95  | 58 | Two tailed     | <0.0001  |

Since p value is  $<0.001$ , the level of significance for all factors, there is strong evidence to reject the null hypothesis for all the factors stated above.

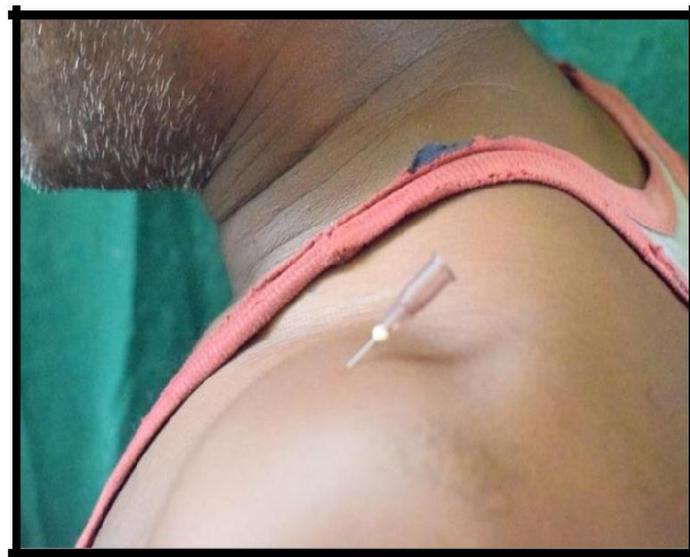
There is highly significant difference between group A and group B on an average if the above factors are considered.

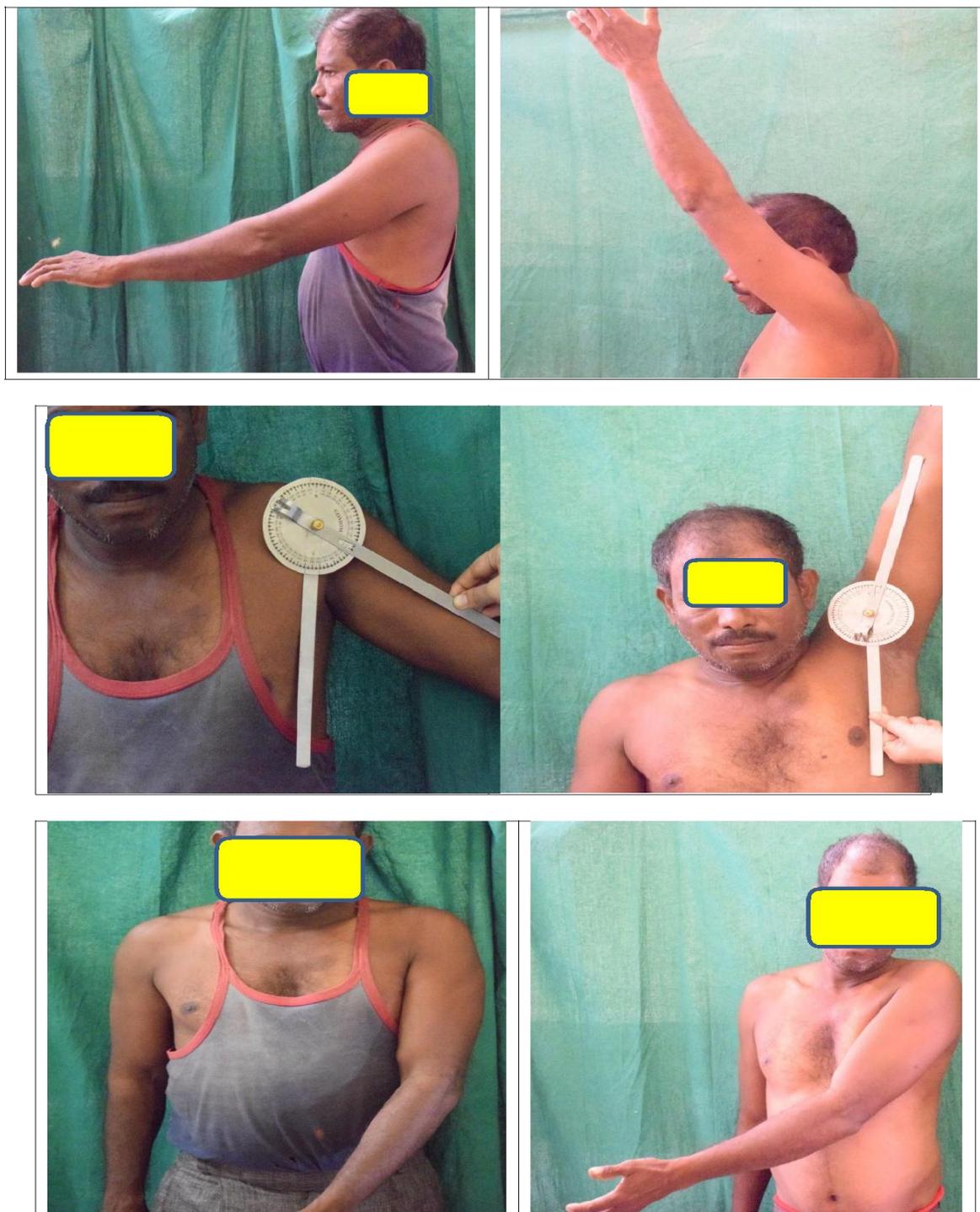


**Spirit Swab + Needle No. 26**



**Goniometer**





## DISCUSSION

The control group was given *Snehana-Swedana* for seven days consequently. The classical treatment of *Vata Vyadi* is utilized here for the management of the condition. In all *Samhitas*, it has been well described and proved for many such conditions. It definitely gives soothing effect at least immediately. The analgesics and physiotherapy being the mainstay of the modern treatment, *Snehana-Swedana* was considered best for the control group.

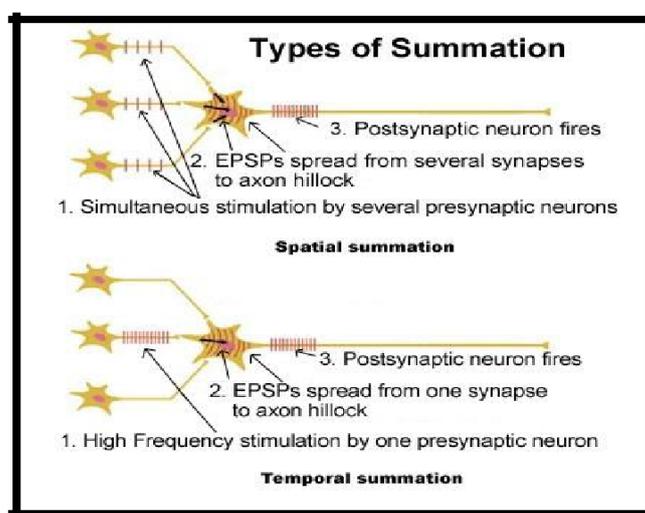
To understand *Suchivedhan*, we must have cleared the concept in our mind that *Sira* always carry all *Doshas* i.e *Vata*, *Pitta* and *Kapha*, along with *Rakta*.<sup>[7]</sup> When *Siravedha* is performed, the most *Vitiated dosha* is expelled out first as explained by *Sushruta*.<sup>[8]</sup> The same mechanism can be applied in *Suchivedhan*. In *Suchivedhan*, very minute quantity of blood oozes out. Though the quantity of the oozing blood is very low, yet it may be sufficient to expel out the most vitiated *Doshas*. So, in *Avabahuka*, the vitiated *Doshas*- *Vata* along with *Kapha* may be released out after *Suchivedhan*, resulting in *Vednashanti* and relaxation of *Amsabandhana*.

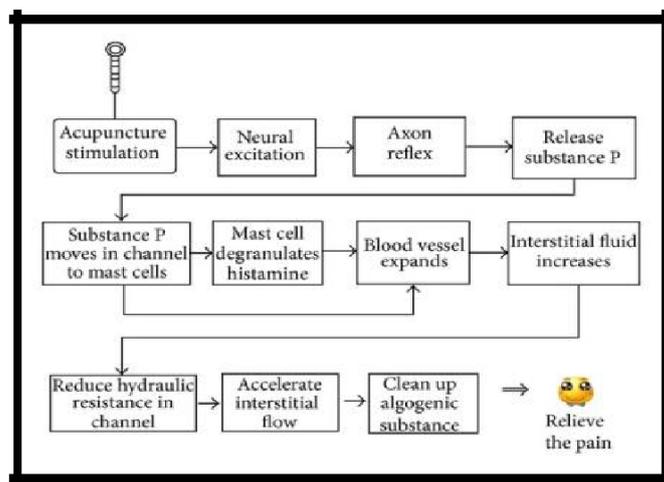
Mechanism of receptor adaptation is interesting in case of pain signals. Single intensity can be transmitted by using increasing number of parallel fibers i.e. spatial stimulation.

Spatial summation- By using progressively greater number of fibers increasing signal strength is transmitted. Hundreds of minute free nerve endings serve as the pain receptor in the skin. Entire cluster of fibers from one pain fiber frequently covers an area of the skin as large as 5 cm in diameter. The area is called receptor field of that fiber. The number of endings is large in the field center than in periphery. Also, the arborizing pain fibers overlap other pain fibers. Thus, the strong impulse (signal) spread to more and more fibers.

Temporal summation- signals of increasing strength are transferred by increasing the frequency of nerve impulses in each fiber.

#### (EPSP- Excitatory postsynaptic potential)





Now it is clear from the above physiology that damaging the nociceptive fibers can be a treatment for relieving the pain. The same is done in the *Suchivedhan* of Ayurveda.

We chose tender points for *Suchivedhan*. It is the position of the central fiber which is the most responsible for transmitting the pain impulse. And here, we actually disturb the channel which is producing pain in the joint.

### Chemical theory

Endogenous opioid peptides (EOPs)- these hormones are produced by CNS and pituitary gland. These are also called as Endorphins, a short form of Endogenous Morphine. Endorphins word is comprised of two parts- 'Endo' and 'Orphine'. Endo stands for Endogenous and Orphine means Morphine. It means morphine like substance produced within the body. Its principal function is to inhibit the flow of pain pathway. When needling or *Suchivedhan* is done, these endorphins are produced in the body, inhibiting the communication of pain signals thus reducing pain. It also produces a feeling of Euphoria.

The probable mode of action of *Suchivedhan karma* is tried to explain by the above hypothesizes according to modern science as well as according to Ayurveda.

### CONCLUSION

The patients respond well towards the treatment by *Suchivedhan karma*, provided good patient counseling is done prior. One needs to explain the procedure and its outcomes to the patient prior to the procedure. *Snehana-swedana* alone is not much enough in this particular condition as patients reported no significant relief even after 7 days of the treatment. The *Suchivedhan karma* is used today in very few cities of India. The procedure is best explained

as chemical stimulation i.e. the production of endogenous morphine, which blocks the pathway of pain by blocking nociceptors. It works very fast as the relief was significant even after one to two days of the treatment. This is a great achievement of Ayurveda that patients can say that Ayurveda also has fast acting procedures. It is cost –effective and gives immediate relief.

## REFERENCES

1. Phil Page. 2010 Dec; Adhesive capsulitis: use the evidence to integrate your interventions. North American Journal of Sports Physical Therapy: NAJSPT, 5(4): 266-273.
2. Ambika Dutt Shastri. Sushruta samhita, Volume 1, Varanasi; Choukhamba Sanskrit sansthan; 2011 (Nidana 1/82), p. 304.
3. Dr. R. B. Gogate. Viddha and Agnikarma Chikitsa, third edition, 2017, Pune; Gogate Padmanabh Ramchandra 102, Ramprasad chambers; p. 12.
4. Reeves B. The Natural history of the frozen shoulder syndrome. Scand J Rheumatol, 1976; 4: 193-6.
5. Neviasser RJ and Navieser TJ. The frozen shoulder-diagnosis and management. Clin Orthop Relat Res., 1987; (223): 59-64.
6. Ambika Dutt Shastri. Sushruta samhita, Volume 1, Varanasi; Choukhamba Sanskrit sansthan, 2011 (Nidana 1/27), p. 298.
7. Ambika Dutt Shastri. Sushruta samhita, Volume 1, Varanasi; Choukhamba Sanskrit sansthan; 2011 (Sharira 7/17), p. 81.
8. Ambika Dutt Shastri. Sushruta samhita, Volume 1, Varanasi; Choukhamba Sanskrit sansthan; 2011 (Sharira 8/12), p. 87.