



## Case Study of Frequent Leech application in Diabetes mellitus with special reference to Frozen Shoulder.

Chetan Agrawal\*<sup>1</sup>, Rashmi Kale<sup>2</sup>

1. M.S. (II year),
2. Professor,

Department Of Shalyatantra, Sumatibhai Shah Ayurved Mahavidyalaya,  
Hadapsar, Pune, Maharashtra

\*Corresponding Author: dr.chetanpagrawal@gmail.com

### ABSTRACT:

In Frozen Shoulder (adhesive capsulitis), there is stiffness, pain and limited range of movements. It may happen after an injury, overuse of joint, from a disease such as diabetes or a stroke. Diabetes mellitus is a group of metabolic disorder with involvement of musculoskeletal system. In which most common is frozen shoulder. In frozen shoulder raise sugar in blood stick to collagen and restrict the movements. In first stage of frozen shoulder, Inflammation of capsule is present with severe pain.

Various diseases like Shoulder Impingement, Frozen Shoulder, and Rotator cuff tendinitis have resembling symptoms under the umbrella of disease Avabahuka described in Ayurveda. In Avabahuka there is Vata-Kapha dushti still Leech application was carried out in first stage of Frozen Shoulder. Leech application is indicated in Pittaj Dushti and Hirudine present in saliva of Leech helpful in platelet aggregation inhibitor. Hence increase in blood supply to shoulder region may arrest fibrosis of capsule. **Aim-** Study the efficacy of Leech application in Frozen Shoulder in Diabetes Mellitus. **Objective-** To study the effect of Leech application in the management of pain and range of motion of shoulder joint in Diabetes Mellitus. **Hypothesis-** Leech application is effective in Frozen Shoulder caused by diabetes Mellitus.

**KEYWORD:** Diabetes Mellitus, Leech application, Frozen Shoulder

## INTRODUCTION:

The first recorded description of a frozen shoulder was reported by Duplay<sup>1</sup>. In 1872 in his description of peri-arthritis scapulohumeral though the term frozen shoulder was first used in 1934 by Codman<sup>2</sup>. Who also described the common feature of slow onset of pain felt near insertion of deltoid muscle, inability to sleep on affected side and restriction in both active and passive elevation and external rotation yet with normal radiological appearance. Many patients present with painful and restricted movements of shoulder with no underlying cause for their symptoms and many patients presents as secondary to underlying disease.

Frozen Shoulder is thought to have an incidence of 3% to 5% in general population and up to 20% in those with diabetes<sup>3</sup>. Its peak incidence in between the ages of 40 and 60 and is rare outside these age group<sup>4</sup>.

## Case Report

A female patient of age 60 years residing in Pune presented with complaints of severe pain over left shoulder and restricted movements. Patient has taken treatment in other hospital and visited

current hospital with reports and was previously diagnosed as frozen shoulder.

Patient has no history of any trauma, fracture or heavy weight lifting. Local examination include pain, range of motion of shoulder joint, restricted movements and painful external rotation. Patient has surgical history of tubectomy before 25 years. Patient having no history of any major illness but know case of diabetes mellitus since last 10 years and taking oral hypoglyasemic agent include tab. Glycomet 500mg 1BD.

Laboratory investigations shows 12.5 Hb% and normal leucocyte count with 1-2 pus cell and sugar 2+ in urine routine examination. Having HbA1c 6.7 and negative serological reports. X-ray shoulder joint does not show any obvious fracture or injury. Whenever patient had pain over any part of body she goes for Leech applicationat particular site. So for shoulder joint pain decided to go for Leech application.

On the basis of clinical examination patient was diagnosed as frozen shoulder as complication of diabetes mellitus. After regular Leech applicationit is observed that patient feel decreased pain and also increased range of motion of shoulder joint

## Case Discussion

Frozen shoulder having similar symptoms as that of Avabahuka in Ayurveda. In context of Ayurveda Acharya Shushrut has explained that there is narrowing of vessels that diminished vascularization at site<sup>5</sup>. Where as in frozen shoulder there is involvement of the entire tendinous rotator cuff. Which becomes thick and infiltrated with lymphocytes and plasma cells<sup>6</sup>. Low grade inflammatory process is also considered to be cause of condition. Gradually adhesions form, which turns into the dense bands of fibrous tissue. Due to these dense bands and thickness of cuff it leads to diminished blood flow to cuff leading to late healing and worsening the condition.

Acharya Shushrut described Siravedha in chikitsa of Avabahuka<sup>7</sup>. Which is one of the type of Raktamokshana.. In Avabahuka, all seeras and kandara of shoulder i.e. Ansa sandhi are involved which are updhātu of Rakta<sup>8</sup>. So decided to do Raktamokshana by Leech Application.

According to Acharya Charaka in Samprapti of Prameha there is involvement of all three Doshas and multiple Dhatus<sup>9</sup>. But in Tika of these Acharya Chakrapani Says that All Dhatus are involved but one by one i.e. Kramen. So first line of treatment should start for kapha and Pitta. Because of Kapha thickening of tendons

and because of Pitta inflammation start. Leech which contains Hirudin increases blood flow and decreases the thickening and inflammation leads to healing.

In Chikitsa of Prameha first Apatarpana is to be carried out and after that Santarpana<sup>10</sup>. But patient taking oral hypoglycemic agent i.e. Metformin since last 10 years which is from biguanides group having anorexia and weight loss is most common side effect<sup>11</sup>. So continuous Apatarpana without Santarpana is going on which leads to the Vata vyadhi like Avabahuka.

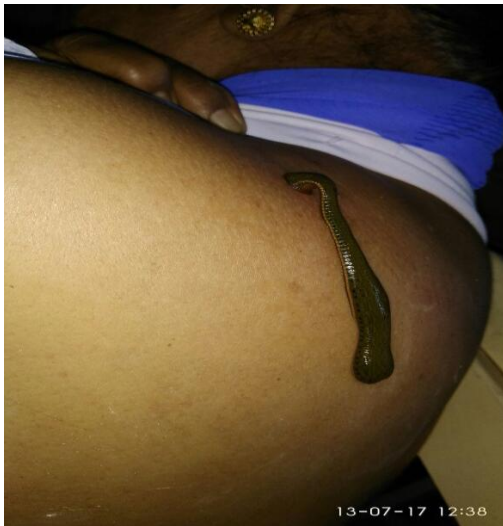


According to modern science, in long standing Diabetic patient when blood sugar level increases it stick to the collagen in joints. This leads to thickening of joint capsule. Collagen is major building block in ligaments that holds the bone together<sup>12</sup>. There are several species of leeches, but most commonly use 'Hirudo Medicinalis' is use for medicinal purposes. Medicinal leeches have been found to secrete saliva containing about 60 different proteins. Several of these secreted proteins serves as Anti-coagulant i.e. Hirudin, Platelet aggregation inhibitor i.e. Apyrase, collagenase, vasodilators and Anesthetic agents<sup>13</sup>.

## Conclusion

After regular Leech application it is observed that Range of motion of shoulder joint increases. Also there is considerably decrease in pain and restricted movements of shoulder. And pain during external rotation also decreases.

### Photographs



### References

1. Duplay E. De la periarthrits scapula-humerale et des raideurs de l epaule qui en sont la consequence. Arch Gen Med. 1872;20:513-542.

2. Codman EA. Tendinitis of the short Rotators. In: The Shoulder: Rupture of the Supraspinatus Tendon and other lesion in or about the Subacromial Bursa. Boston MA: Thomass Todd; 1934.
3. Manske RC, Prohaska D. Diagnosis and management of adhesive capsulitis. Curr Rev Musculoskelet Med.2008;1:180-189.
4. Robinson CM, Seah KT, Chee YH, Hindle P, Murray IR. Frozen Shoulder. J Bone Joint Surg Br. 2012; 94:1-9.
5. Vaidya. Anantaram sharma; Sushrut Samhita Vol-1 ,2013; Choukhamba Subharati Prakashana, ISBN-978-93-82443-51-3(Vol-1); Pg.number-470.
6. Vaidya vaishali motghare. NU/A5/9243 2007-2008. Thesis Avabahuka (FrozenShoulder) Vyadhi Me Agnikarma ka prayogig Adhyayana.
7. Vaidya. Anantaram sharma; Sushrut Samhita Vol-1 ,2013; Choukhamba Subharati Prakashana, ISBN-978-93-82443-52-0(Vol-2); Pg.number-113.

8. 8.Vaidya Acharya Vidyadhar Shukla (BAMS,MS);Prof.Ravidatta thripathi(BAMS,PhD); 2010; Choukhamba Sanskrit Prakashna (Vol-2); Pg. number 361
9. Vaidya Acharya Vidyadhar Shukla (BAMS, MS); Prof. Ravidatta thripathi (BAMS,PhD); 2010; Choukhamba Sanskrit Prakashna (Vol-2); Pg. number 168
10. Vaidya Acharya Vidyadhar Shukla; Prof. Ravidatta thripathi(BAMS,PhD);2010;Choukhamba Sanskrit Prakashna(Vol-2); Pg. number 171
11. KD Tripathi, MD Pharmacology; Essentials of Medical Pharmacology sixth edition 2006, Jaypee Brothers Medical Publishers (P) Ltd, Pg. number 269.
12. www. Healthline.com/diabetes and frozen shoulder
13. Baskova, I.P.; Z. Avalova, Basanova; Moshkovaskii, Zgoda (Nov 2004). “ Protein profiling of the medicinal leech salivary gland secretion by proteomic analytical method” Biochemistry 69(7):770-775.



***Cite this article:***

Case Study of Frequent Leech application in Diabetes mellitus  
with special reference to Frozen Shoulder.

Chetan Agrawal, Rashmi Kale

*Ayurlog: National Journal of Research in Ayurved Science-2018; 6(2): 1-5*