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The Concept and Management of Medial Epicondyle Tendinopathy in Ayurveda

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ABSTRACT

The Medial Epicondyle Tendinopathy commonly known as Golfer's elbow develops due to repetitive injury and inflammation, as well as microscopic degenerative changes in the Flexor-pronator tendon. This is a very painful condition and may result in restriction and painful movements of the affected arm. Treatments such as NSAIDs, steroid injections, physiotherapy, and exercise are used for getting symptomatic relief. None of these, however, yield adequate results. After being used for a long time, NSAIDs and steroid injections might have adverse side effects. The Golfer's elbow, based on clinical appearance can be correlated to *Snayugata Vata* in *Ayurveda*. *Snayugata Vata* is a condition that is described under *Vatavyadhi* in *Ayurvedic* texts and it arises primarily due to vitiation of the *Vata Dosha* and there may also be *Anubandha* (association) of *Kaptha Dosha***.** Threfore, the *Ayurvedic* treatment principles such as *Agnikarma, Snehna, Swedana, Upnaha, Bastikarma, Mridushodhana* etc. described under *Vatavyadhi Chikitsa* can yield better results with minimal adverse effects. In this article, an attempt is made to review the concept and management principles of Medial Epicondyle Tendinopathy in *Ayurvedic* prospective.

Key Words *Golfer's elbow, Snayugata Vata, Medial Epicondylitis, Medial Epicondyle Tendinopathy*

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INTRODUCTION

Medial epicondyle tendinopathy or '**Golfer's Elbow**' is a type of tendinous overload injury affecting inside of the elbow. The pathology includes degeneration of Flexor-pronator tendon which occurs with repetitive forced wrist extension and forearm supination during activities involving wrist flexion and forearm pronation thus there is tendon degeneration instead of repair. Patient often experiences pain on the ulnar side of the forearm, the wrist and occasionally in the fingers. The term 'epicondylitis' has been abandoned by many researchers as it implies an ongoing inflammatory process. Studies of the histological nature of these conditions have shown that the condition on the lateral side of the elbow, and likely the medial side as well, is actually "a degenerative or failed healing tendon response characterized by the increased presence of fibroblasts, vascular hyperplasia, and disorganized collagen" [1]. In *Ayurveda* the nearest correlation of Tendons are *Snayu.* As a result of vitiation of *Vata* and involvement of *Snayu*

present in *Karpura Sandhi* the *Snayugata Vata* develops. Thus based on its clinical manifestation golfer elbow can be correlated with the *Snayugata Vata* in *Ayurveda*. The conservative methods are used to treat majority of cases, severe cases of prolonged duration (over 6 to 12 months) may require surgical consultation. There is no satisfactory treatment protocol for this disease yet. Here an attempt is made to review modern literature and its counterpart in Ayurveda and thus establishing its management protocol based on Ayurveda principles.

AIMS AND OBJECTIVES

- To review Literature of Medial epicondyle tendinopathy and its counterpart in *Ayurveda*.
- To review treatment Principles of Medial epicondyle tendinopathy in *Ayurveda*.

MATERIALS AND METHODS

This article is based on a review of medial epicondyle tendinopathy's modern literature and its concept, management principles available in *Ayurvedic* texts. Materials on Medial epicondyle tendinopathy and *Snayugata Vata* have been gathered from various *Ayurvedic* and modern publications. To acquire information on the important aspects, we also selected recent materials from internet sources such as PubMed, Google Scholar, DHARA etc.

GENERAL DESCRIPTION

COMMON NAME

Golfer's elbow, Baseball elbow, Pitcher's elbow, thrower's elbow, medial epicondylitis

PREVALENCE

The prevalence of medial epicondylar tendinopathy is smaller than that of lateral epicondylitis (tennis elbow). As per a study done on 4783 subjects the Prevalence of medial epicondylitis was found 0.4% but according to the review report incidences of Medial epicondyle tendinopathy are 10 to 20 % of all epicondylitis diagnosed[2]. The Prevalence is found higher in the following cases: age range of 45–64 years, high body mass index, larger waist circumference, higher waist to hip ratio, current and former smokers and type 2 diabetes[3].

AETIOLOGY

Golf, American football, tennis and other racquet sports, archery, bowling, weightlifting, and javelin throwing can all cause medial epicondylitis. Because of high energy valgus forces during the late cocking and acceleration phase, pitchers and overhead throwing athletes are more likely to acquire the condition. However, more than 90% of instances are unrelated to sports. Carpentry, plumbing etc. are examples of labor-intensive occupations that need forceful, repetitive activities and thus may result in development of medial epicondylitis[4].

CLINICAL PRESENTATION

- Elbow pain distal to the medial epicondyle of the humerus, radiating up and down the arm, most often on the ulnar side of the forearm, wrist, and fingers.

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- Local tenderness over the medial epicondyle and the flexor group's conjoined tendon, without swelling or erythema.
- Elbow stiffness.
- Hand and wrist weakness.
- Numbness or tingling sensation in the fingers (mostly ring and little finger).
- Triggering of pain by resisted wrist flexion and pronation.

CLINICAL EXAMINATION

To assess medial epicondylitis, it requires both a passive and active examination. The patient will complain of discomfort while actually shaking hands or pulling open a door in serious cases of epicondylitis. The patient can resist wrist flexion during the active resistance test. This must be done with the elbow extended and the forearm completely supinated. The therapist performs the passive examination by extending the wrist while keeping the elbow extended. The range of motion may be complete at the start of the disease, but it may decrease as the disease progresses.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis of medial epicondylitis includes following[5] -

A. Neuropathy

- C6 or C7 radiculopathy
- Cubital tunnel syndrome
- Ulnar or median neuropathy
- Ulnar neuritis,
- Anterior interosseous nerve entrapment

B. Ligamentous Injury

- Ulnar or medial collateral ligament instability
- Sprain or tear

C. Tendinopathy

- Lateral epicondylitis
- Triceps tendonitis
- Others

D. Others

- Adhesive capsulitis
- Arthrofibrosis or loose bodies
- Medial epicondyle avulsion fracture, or osteophytes
- Flexor or pronator strain
- Synovitis
- Valgus extension overload; or dermatologic concerns (e.g., herpes zoster).

DIAGNOSIS

As the diagnosis may easily be established clinically through history and physical examination thus additional diagnostic investigations are rarely required[6]. The Golfer's Elbow Test, an orthopedic test, is particularly useful in diagnosing medial epicondylitis. For the diagnosis and its differentiation from other causes Ultrasound has a good sensitivity, specificity, and positive and negative predictive value.

MODERN MEDICAL MANAGEMENT

a. Avoid repetitive stretch by not doing such activities which cause pain and discomfort till healing occurs. This is followed by gradual resumption of activities.

b. Anti-inflammatory drugs.

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c. Corticosteroid injections.

d. Ice packs for acute episode and heat therapy for chronic.

e. Wearing supportive splints and straps.

f. Exercise therapy and occupation therapy.

g. Generally surgery is not required. However, if the above conservative treatments fail to provide relief after 6 to 12 months, surgical intervention may be explored.

DISEASE IN AYURVEDA

Snayu resembles a fibrous structure. *Snayu* is a *Upadhatu* (subsidiary) of *Medhodhtu* that aids in the *Dharaa* (maintenance) of the body[7]. As per *Acharya Vagbhatta*, *Snayu* is one of the *Pratyanga* of the human body[8]. *Acharya Sharangdhara*, mentioned *Snayu* as a structure that connects the body's *Maansa*, *Asthi*, and Meda[9]. Thus *Snayu* may be considered as a fibrous tissue component, tendon, or ligament. There are four categories of *Snayu* based on their shape and location. *Pratanavati Snayu* (stretched out / branch), *Vrita Snayu* (round / cylindrical), *Vrita Snayu* also known as *kandara* (tendons), *Suhira Snayu* (hollow / porous / ring like), and *Prithula Snayu* (thick / flattened) [10]. Thus based on structure and position the *Vrita Snayu* are correlated with the tendons present in body.

Depending on its signs and symptoms, the golfer elbow may be correlated with the condition of *Snayugata Vata (S. Vata)* described in *Ayurvedic literature*. *S. Vata* develops when *Vata dosha* is increased (due to *Ati-Chesta*, *Ati-Vyayam*, etc.) and gets localized in *snayu* of *kurpara sandhi*[11]. The *Vayu* which is responsible for the normal activities of joints i.e. the *Vyanvayu* is ultimately unable to carry out the function of *Kurpara Sandhi* (elbow joint) and *Hasta Pradesha* (forearm) smoothly. As a result, features such as pain, stiffness, restricted movement, etc. develops in this region. These symptoms may also develop due to *Kaphavritta Vyana Vayu*[12]. Hence, it is also considered as an important causative factor for manifestation of *S. Vata*.

***NIDANA* (CAUSATIVE FACTORS)**

Acharyas described *Snayugata Vata* under *Vatavyadhi*. There are no specific *Nidana* mentioned for *Snayugata Vata* in *Ayurvedic* texts, therefore the *Nidana* of *Vata Vyadhi* are considered[13,14].

The *Nidana* (causative factors) of *Vatavyadhi* are generally classified into following 5 types-

1. *Aharaja Nidana* (Dietary factors) - *Sheeta*(cold), *Ruksha*(dry), *Alpa* (less quantity) *Laghu Guna*(light), *Katu*, *Tikta*, *Kashaya Rasa* and indulgence in *Anashana* (fasting), *Alpashana* (low eating), *Vishamashana* (irregular eating), *Adhyasana* (overeating).

2. *Viharaja Nidana* (Physical activities) - *Ativyavaya* (excessive sexual activites), *Ativyayama* (excessive exercise), *Atichesta* (Excessive physical exercises/movements), *Atiratriprajagrana* (excessive awaking at night), *Divaswapna* (day-sleep) *Vegasandharana* (suppression of the natural urges), *Palwana* (excessive swimming), *Atidhavana* (excessive running), *Atiucha Bhasanam* (loud speaking), *Atibhara Vahanam* (excessive weight bearing).

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3. *Abhighataja* (trauma) - *Marmabhighata* (injury in vital organs).

4. *Kalaja Nidana* (Seasonal and environmental) - *Varsha Ritu* (Rainy season), *Shishira Kala* etc.

5. *Manasika Nidana* (Psychological factors) - *Ati Chinta* (worry), *Shoka* (grief), *Krodha* (anger), *Bhaya* (fear).

ROOPA (CLINICAL PRESENTATION)

In general when the *Vata Dosha* located in *Snayu* is provoked, the conditions such as *Bhahya Aayam* (opisthotonous), *Abyantra Aayam* (emprostotonous), *Khalli*, *Kubjatvam* (hunch-back) and *Sarwang* (general) or *Ekang* (local) disorders arises[15].

The symptoms of *Vatavyadhi* mentioned in *Ayurvedic* text are *Sankocha* (contraction), *stambhana* (stiffness) of joints and *Shoola* (Pain) in the joints as well as in bones, *Lomaharsha* (horripilation), *Pralapa* (delirium), *Graham* (spasticity) of hands, back as well as head. *Khanja* (lameness) and *Pangulya* (total paralysis of leg), *Kubjta* (hunch- back), *Sosha* (atrophy) of the body parts, *Anidra* (insomnia), *Spandana* (trembling of body), *Gatrasuptata* (numbness), *Hundana* (shrinking) of head, nose, eyes, clavicular region and neck, *Bheda* (breakingpain), *Toda* (pricking pain), *Akshepaka* (convulsion),, *Karshya* (emaciation), *Karshnya* (blackishness of skin), *Usna Kamatva* (desire of hot substances) [16,17].

SAMPRAMPTI (PATHOGENESIS)

As there is no separate *Samprapti* of *Snayugata Vata* explained in *Ayurvedic* texts, so the general *Samprapti* of *Vatavyadhi* is considered[18].

Samprapti of *Snayugata Vata* can be explained in two possible ways-

A. On the basis of *Vataprakopaka Aharvihara Sevana (*Factors related to diet and physical activities)

B. On the basis of *Agantuja Nidana* (Due to trauma or injury)

Vataprakopaka Ahara Sevana i.e. regular practice of predisposing dietary factors for *Snayugata Vata* such as *Sheeta*(cold), *Ruksha*(dry), *Alpa* (less quantity) *Laghu Guna*(light), *Katu, Tikta, Kashaya Rasa etc,* and *Vihara Sevana* such as *Ativyayama* (excessive exercise), *Atichesta* (Excessive physical exercises/movements) etc. leads to *Chayaprakopa* of *Vata* i.e. aggravation and vitiation of *Vata Dosha* specifically *Vyana Vayu*[19]. This *Vyana Vayu* may also be in *Anubandha* (Associated) with *Kapha Dosha* if there is state of *Ama (*toxins) formation due to *Agnimandya* (decreased digestive power). This vitiated *Vata* accumulates in *Karpura Sandhi* (due to the presence of *Sroto Riktata*) and in turn leading to *Shooladi Lakshanas.* There is *Vikruti* in *Meda Dhatu* and *Meda Agni Vaishamya* (Impairment of *Agni*) which may lead to *Vikrata* (Impairment) and *Kshaya* (Degeneration) of *Snayu* (*Upadhatu*).

On the other side, *Agantuja Nidana* such as *Abhighata* (*Kurpara Marma Abhighata*) usually results in *Sthaniya Vata Dushti* with *Rakta* as the

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underlying *Dushya*. As a result of *Dhatuvaishamya*, the vitiated *Vata* moves in the body and settles down in *Snayu* (due to the presence of *Sroto Riktata*) and develops *Shoola, Stambhana, Kampa* etc[20].

Thus in modern terms excessive physical exercise, overuse or repetitive activities, carrying heavy hand held tools, and other etiological factors lead to *Vataprakopa* resulting in and *Dhatuvaishamya* (degenerative changes) and *Tadjanita Shoola* (Pain) in the tendons leading to structural alteration of the tendon (tendon tearing) and painful and restricted movements of elbow joint.

CHIKITSA (TREATMENT)

1. *Nidana parivarjana* (Avoiding causative factors)

The *Nidana parivarjana*, or avoidance of the causative factors, such as excessive physical activity, is the first thing that the patient is encouraged to do, and the same thing is mentioned in modern treatment of Golfer's elbow.

2. *Chikitsa Siddhanta* (Treatment Principles)

The treatment Principles of *Snayugata Vata* mentioned by different *Acharya* in *Ayurveda* literature are following-

***Chikitsa Siddhanta* as per *Acharya Sushruta*[21]**

- *Snehana, Upanaha, Agnikarma, Bandhana, Mardana*

***Chikitsa Siddhanta* as per *Acharya Vagbhata*[22]**

- *Snehana, Daha, Upanaha*

***Chikitsa Siddhanta* as per *Yogaratnakar*[23]**

- *Swedana, Upanaha, Mardan, Snehana*

***Chikitsa Siddhanta* as per *Acharya Charaka*[24]**

- *Acharya Charaka* has not mentioned the specific treatment modality for *Snayugata Vata*. So, the *Chikitsa* according to the *Lakshana (Symptoms)* of *Snayugata Vata* is to be considered.

Aushadha Yoga (Oral Drugs) mention in the *Ayurvedic* Texts for the management of *Snayugata Vata*

- *Trayodashanga Guggulu*[25]
- *Abhadi Churna*[26]

Shodhana chikitsa as per Ayurvedic Texts:

1. *Agnikarma*

In *Ayurvedic* texts various treatment modalities such as *Snehana, Swedana, Upanaha, Agnikarma,* and *Bandhana* etc. are described in the management of *S. Vata*[27]. *Agnikarma* appears to be the most efficient in delivering immediate relief. The disease does not recur if this procedure is done perfectly[28].

2. *Panchakarma Procedures*

The basic *Panchakarma Procedures* adopted for the treatment of *Vatavyadhi* such as *Snayugata Vata* are following-

Snehana

- *Abyantra Snehana* - In *Vatavyadhi* with degenerative changes such as *Snayugata Vata* the oral administration of *Sneha* i.e. *Ghee* (Clarified butter), *Taila* (oil) etc. is found very useful for *Shamana* (Palliative treatment) and preparation of Patient for *Mridushodhna*.

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- *Bhahya Snehana* – After completion of *Internal Snehapan*, Patient should subjected to *Bahaya Sneha* i.e. *Abhayang* (external massage by oil or sneha).The *Bhahya Snehana (*external massage) can also be performed separately as *Pradhana Karma* in the elbow area for local relief of symptoms.

Swedana

- When the patient is oleated internally and externally, he should be subjected to *Sarvanga Swedana* (whole body sudation therapy) before *Mridushodhna*. The *Swedana* procedure like *Snehana* therapy can also be used as *Pradhana Karma* i.e. independent therapy for the quick management of symptoms such as *Toda* (pricking pain aches), *Ruka (Pain), Aayam, Shoth* (extensive swelling), *Stambha* (stiffness) and *Graha* (spasticity).
- According to *Acharya Charaka*, through oleation and sudation processes, even a deformed and rigid limb can be gradually restored to normal, just as it is possible to bend a dried piece of wood according to one's desires.

Mridu Shodhana

- In case oleation and sudation therapy are unable do palliation of *Vata*, *Mridushodhna* (mild purification) should be performed with mild *Snehayukta* medicines. Castor oil with milk and medicated ghee made with *Tilwak* or *Satala* are both useful in expelling the morbid *Doshas*.

Basti (Medicated Enema) -

- *Acharya charaka* described *Basti* as the best therapeutic procedure to treat all types of *Vatavyadhi*. In degenerative conditions such as *Snayugata Vata* the *Yapna Basti* and *Matra Basti* can be very useful. In case the patient is *Durbal* (weak) or purgation is contra-indicated, the *Niruh Basti* (enema) should be administered followed by a diet having *Pachaniya* (digestive) and *Deepniya* (appetizer) drugs as ingredients.

3. Vyayayma

- The *Yogasana* and *Physiotherapy* techniques are also useful in providing symptomatic relief in *Snayugata Vata.*

DISCUSSION

The *Viharaja Nidana* (Physical activities related factors) such as *Ativyayama* (excessive exercise), *Atichesta* (Excessive physical exercises/movements) etc. and *Agantuja Nidana* such as *Abhighata* (external trauma or injury) are mentioned as causative factors in both *Ayurveda* as well as modern literature. Repetitive practise of these factors leads to angiofibroblastic alterations in the wrist flexors and pronator teres, due to chronic repetitive concentric or eccentric loading of the wrist flexors and pronator teres. Repetitive exercise causes microtears in the tendon, which leads to tendononosis. Even though the pronator teres and flexor carpi radialis were thought to be the most usually affected muscles, the literature reveals that all muscles are affected equally, with the exception of the palmaris longus. There is no inflammation of the bones. The collagen fibres remodel and the mucoid ground

substance increases as the Flexor-pronator tendon undergoes repeated micro tears[29]. The vitiation of *Vata*, specifically *Vyana Vayu* according to *Ayurveda*, is the cause of all such structural changes and degeneration. Thus the management of *Vata* includes the oral medicines and *Panchakarma* procedures that targets vitiated *Vyana Vayu* and helps in its Palliation.

According to *Ayurvedic principles*, this disease might also arise from *Vata* vitiation along with *Kapha Dosha Anubandha*. *Agnikarma Chikitsa* is recommended as the best therapy option for such a problem. *Agnikarma* pacifies the *Vitiated Vata* and *Kapha Dosha* thus helping in diminishing symptoms such as *Shola*, *Stambha*, *Shotha* etc. because of its *Ushna* (hot), *Tikshna* (sharp), *Sukshma* (finest), and *Ashukari* (quick acting) properties[30].

When *Snehana* is used as an independent therapy locally as *Abhyanga* its opposite properties (*Guna*) to *Vata Dosha* provides *Vatashamaka* effect and thus helping in relieving the symptoms such as Pain, Stiffness present in Golfer's elbow[31]. The *Swedana* (steam therapy) due to its *Ushna* property relieves symptoms such as *Stambha* (stiffness), *Gauravata* (heaviness) etc. thus providing symptomatic relief in Golfer's elbow[32]. The process of *Snehana* and *Swedana* dilates the blood vessels of the skin, increasing local blood circulation. Thus there is quick removal of toxins and improvement in nutrition supply to the affected local area. The medicine that is applied locally is absorbed by the skin and has local effects.

Basti therapy is acknowledged as one of the most effective therapeutic *Panchakarma* procedures, especially for the treatment of *Vatavyadhies*. This therapy is best for pacifying *Vata Dosha* and providing nutrition to the body. Thus *Basti* therapy may also be very beneficial in dealing with degenerative disorders such as Golfer's elbow.

CONCLUSION

After reviewing the literature, it can be concluded that Golfer's elbow is a degenerative condition of Flexor-pronator tendon, mainly caused by mechanical overload occurring during sports participation or work involving repetitive activity. In *Ayurveda* the condition may be correlated to *Snayugata Vata* which is a disorder of *Vatavyadhi* spectrum. There is no specific treatment protocol for Golfer's elbow in modern science and the treatment principles of *Vatavyadhi* such as *Agnikarma*, *Snehna*, *Swedana etc.* may prove beneficial in treating this condition. As there are only a few clinical studies on golfers elbow in *Ayurveda*, thus this literary knowledge should be applied more therapeutically in order to establish a better treatment protocol.

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REFERENCES

1. Hudes K. (2011). Conservative management of a case of medial epicondylosis in a recreational squash player. *The Journal of the Canadian Chiropractic Association*, *55*(1), 26–31.

2. Shiri, R., Viikari-Juntura, E., Varonen, H., & Heliövaara, M. (2006). Prevalence and determinants of lateral and medial epicondylitis: a population study. *American journal of epidemiology*, *164*(11), 1065–1074. https://doi.org/10.1093/aje/kwj325

3. Kiel, J., & Kaiser, K. (2021). Golfers Elbow. In *StatPearls*. StatPearls Publishing.

4. Shiri, R., Viikari-Juntura, E., Varonen, H., & Heliövaara, M. (2006). Prevalence and determinants of lateral and medial epicondylitis: a population study. *American journal of epidemiology*, *164*(11), 1065–1074. https://doi.org/10.1093/aje/kwj325

5. Kiel, J., & Kaiser, K. (2021). Golfers Elbow. In *StatPearls*. StatPearls Publishing.

6. Amin, N. H., Kumar, N. S., & Schickendantz, M. S. (2015). Medial epicondylitis: evaluation and management. *The Journal of the American Academy of Orthopaedic Surgeons*, *23*(6), 348–355. https://doi.org/10.5435/JAAOS-D-14-00145

7. Acharya Yadavji trikamji. Charaka Samhita edited with “Ayurveda Deepika” commentary of Chakrapani Datta. Reprint: Chaukhamba Surbharati Prakashan; Varanasi. Chikitsa sthan, 2014; 15/17: 514.

8. Sharma SP. Astanga sangraha with Sasilekha Sanskrit commentary of Indu.2nd ed. Varanasi (India): Chaukambha Orientalia, 2008; 278.

9. Parasurama Sastri Vidyasagar,Sarngdhara Samhita edited with “Deepika” commentery of Adamalla and “Gudarthadipika” of Kashirama.5th ed.Varanasi(India): Chaukambha Orientalia, 2002; 40: 52.

10. Acharya vaidya yadavji Trikamji, Sushruta Samhita edited with Nibandhasamgraha, Chaukhamba Sanskrita Sansthana, Varanasi-221001, reprint Sharir Sthana, 2009; 5(30): 367.

11. Tripathi B. Chikitsasthan 28 chapter Sloka No 16. Vol. 2. Varanasi: Chaukhamba Surabharati Publication; 2009. Carak Samhita; p. 937.

12. Tripathi B. Chikitsasthan 28 chapter Sloka No. 228. Vol. 2. Varanasi: Chaukhamba Surabharati Publication; 2009. Carak Samhita; p. 979.

13. Sastri K,Chaturvedi GN, Sastri R Upadhyaya Y, Pandeya GS,Gupta B, Vata Vyadhi Chikitsa, Caraka Samhita of Agnivesa with elaborated vidyotini Hindi Commentry, Reprinted ed.Varanasi: Chaukhambha Visvabharti; 2012.Vol.2.Verse-15-18.p.779.

14. Brahmasankara misra, Bhavaprakasa, Madhyamkhanda, edition 12 2018, Chaukambha Sanskrit Bhawan, Varanasi,vol 2, Vatavyadhiadhikara,chapter 4,verse 1-3,Page no.2

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15. Pandey Gangasahay, editor. Pt. Kashinath Sastri Vidyotini Hindi commentary on Charaka Samhita of Agnivesha- 2 nd volume, Chikitsa Sthana Vatavyadhi Chikitsadhayay chapter 28 verse 35. Varanasi: Chaukumba Bharti Academy; Reprint: 2016. P. 783

16. Pandey Gangasahay, editor. Pt. Kashinath Sastri Vidyotini Hindi commentary on Charaka Samhita of Agnivesha- 2 nd volume, Chikitsa Sthana Vatavyadhi Chikitsadhayay chapter 28 verse 20-23. Varanasi: Chaukumba Bharti Academy; Reprint: 2016. P. 780

17. Kaviraj Ambikadutta Shastri, Ayurveda Tattva Sandipika, Hindi commentary on Sushruta Samhita of Maharshi Sushruta, Sutra Sthana doshdhatumalkshayavrudhi adhyaya chapter 15 verse 18. Varanasi, Chaukhambha Sanskrit Sansthan, Reprinted 2014, p. 78

18. Acharya Yadavji Trikamji. Charaka Samhita edited with "Ayurveda Deepika" commentary of Chakrapani Datta. Reprint: Chaukhamba Surbharati Prakashan; Varanasi, Chikitsasthan, 2014; 28/18: 617.

19. Sastri K, Pandeya G, Sharma P, Trikamji Y, Vatavyadhi chikitsa. In, Caraka Samhita of Agnivesa with Vidyotini Hindi Commentry. Reprinted Ed. Varanasi: Chaukhambha publications; 2009.Vol 2, Verse-15-16.p.693-4.

20. Sastri K,Chaturvedi GN, Sastri R Upadhyaya Y, Pandeya GS, Gupta B, VataVyadhi Chikitsa, Caraka Samhita of Agnivesa with elaborated vidyotini Hindi Commentry, Reprinted ed. Varanasi: Chaukhambha Visvabharti; 2012.Vol.2.Verse-228.p.815.

21. Shastri A.D. Sushruta, Sushruta samhita edited with Ayurveda Tattva Sandipika, Chaukhambha Sanskrit Sansthan, Varanasi, reprint 221001, chikitsa Sthanam chapter, 4/8: 34.

22. Gupta KA, Upadhyaya Y, Vatavyadhi Nidanam. In Astanga Hrdayam of Vagbhata Vidyotini Hindi Commentary, Reprinted ed.Varanasi: Chaukhambha Prakashan; 2017.vol 1, Verse-22.p.568.

23. Vaidya Laksmipati Sastri, Vatavyadhi Nidanam, Yogratnakara With Viyotini Hindi Commentary, Reprinted Ed. Varanasi: Chaukhambha Prakashan; 2018.vol 1, Verse-1.p.517.

24. Sastri K, Chaturvedi GN, Sastri R Upadhyaya Y, Pandeya GS, Gupta B, Vata Vyadhi Chikitsa, Caraka Samhita of Agnivesa with elaborated vidyotini Hindi Commentry, Reprinted ed. Varanasi: Chaukhambha Visvabharti; 2012.Vol.2.Verse-75-88.p.791-793.

25. Prof. Siddhinandan Mishra, Vatavyadi Chikitsa, Bhaisajya Ratnavali Of Kaviraj Govind Das Sen, Hindi Commentary, Ed. Varanasi, Chaukhambha Surbharati Prakshan; 2016,Verse-98-101.p.526.

26. Vaidya Laksmipati Sastri, Vatavyadhi Nidanam, Yogratnakara with Viyotini Hindi Commentary, Reprinted Ed. Varanasi: Chaukhambha Prakashan; 2018.vol 1, Verse-1-5.p.527.

27. Ambikadutta Shastri. Chikitsa sthan chapter 4 Sloka No 8. 9th ed. Varanasi: Chaukhamba Sanskrit Samsthan; 1995. Sushruta Samhita (purbardha) p. 26.

28. Ghanekar BG. New Delhi: Meherchand Lachhmandas Publication; 2008. Sushruta Samhita Sutrasthan, chapter 12 Sloka No 2; p. 65.

29. Kiel, J., & Kaiser, K. (2021). Golfers Elbow. In *StatPearls*. StatPearls Publishing.

30. Mahanta, V., Dudhamal, T. S., & Gupta, S. K. (2013). Management of tennis elbow by Agnikarma. *Journal of Ayurveda and integrative medicine*, *4*(1), 45–47. https://doi.org/10.4103/0975-9476.109552

31. Agnivesha, Charaka, Dridhabala. Siddhi Sthana, Chapter 1 verse 7. In: Acharya JT (editor). Charaka Samhita with Ayurveda Dipika Commentary. Reprint 2014 edition. New Delhi:Chaukhambha Publications. 2014;p.678

32. Agnivesha, Charaka Samhita edited by Vidyadhar Shukla, Suthrasthana22/11. 2nd edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2002, pg. no. 310.