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A REVIEW ON SNAYUGATA VATA W.S.R. TO TENNIS ELBOW AND ITS MANAGEMENT PRINCIPLES

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ABSTRACT

Snayugata Vata is described under Vatavyadhi. In Snayugata Vata there will be affliction of Snayu by provoked Vata is responsible for any kind of Vata Pradhana Vedana like Shoola(Pain), Stambha (immobility), Sankocha (contraction) Kampa, Aakshep etc. As per the symptoms Tennis elbow could be correlated with Snayugata Vata particularly affecting Lateral epi-condylar region of elbow. Tennis elbow is the commonest tendinopathy occurring in adults between the ages of 30 and 50 years and one of the common conditions to affect the arm, causing pain, tenderness in the region of the lateral epicondyle of the elbow with an associated impairment of grip that may restrict the activities of daily living such as forearm activity, involving wrist

extension/grasping such as holding a racquet, opening tight jars or shaking hands etc. The *Nidanas* and *Samanya Samprapti* of *Vatavyadhi*, which is explained in classics, can be considered as the *Nidanas and Samprapti* of *Sanyugata vata*. *Vata svaprakopaka Nidanajanya* (vata elevating factors) and *Dhatukshyajanya* (degenerative) *Samprapti* plays an important role in pathogenesis of disease. While mentioning the various treatment measures, such as *Snehana*(Oeleation), *Upanaha*(Poultice), *Agnikarma*(Cautry),

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Bandhana(Bandaging) and *Unmārdan* etc. is given in Ayurveda text and others Conservative treatments include eccentric exercise, anti-inflammatory medications, steroidal injections etc. and surgical treatments are advised for its management.

KEYWORDS: Snayugata Vata, Vatavyadhi, Tennis elbow.

INTRODUCTION

Snayugata Vata is described under Vatavyadhi in all the Samhita and Sangraha Grantha. Vata when provoked or vitiated by any internal or external factor reside in Snayu resulting in instantaneous manifestation of Snayugata Vata. Acharya Sushruta has described Snayugata Vata as, provoked Vata when enlodge in Snayu then stambha, Kampa, Shoola, aakshep is created. The affliction of Snayu by Prakupita Vata is the chief phenomena in Samprāpti of Snayugata Vata. While mentioning the various treatment measures, extensive description of Sanyugata Vata is given by Vāgbhaṭa and Acharya Sushruta first time with the establishment of therapeutic measures including Snehana(Oeleation), Upanaha(Poultice), Agnikarma(Cautry), Bandhana and Unmardana. [2,3]

As per the symptoms Tennis elbow could be correlated with *Snayugata Vata* particularly affecting lateral epi-condylar region of elbow. Tennis elbow (lateral epicondylitis) is one of the most common conditions to affect the arm with an incidence of 1-3%. It rarely occurs before the age of 30, and is most common in the 4th and 5th decades of life. There is near equality in incidence between the genders. Onset of symptoms may be sudden but is more commonly gradual. The dominant arm is more frequently affected. [4] Manual laborers, smokers, and those who repetitively bend/ straighten their elbow for more than 1 h/ day and have poor social support have been associated with higher rates of lateral epicondylitis.^[5] Patients afflicted with this condition typically experience pain at the origin of the extensor muscle, pain with resisted wrist extension, and tenderness with palpation of the tendinous origin of the muscles (Usually involved Extensor Carpi Radialis Brevis ECRB) at the lateral humeral epicondyle. A more likely mechanism is a degenerative process, occasionally associated with a macroscopic or microscopic tendon tear, produced by mechanical overload occurring during sports participation or at work. [6] Anti-inflammatory drugs are advised routinely for both oral intakes as well as for local application along with tennis elbow brace. Local infiltration with corticosteroids and autologous blood, various type of manipulations under anesthesia, physiotherapies, para-surgical and surgical treatments are advised for its management.

AIMS AND OBJECTIVES

- To explore the literature concerning *Snayu* and *Snayugata Vata* in Ayurveda.
- To find out a probable *Samprapti* (Pathogenesis) of *Snayugata Vata*.
- To compile management principles for Tennis elbow in Ayurveda as well as in contemporary science.

MATERIAL AND METHODS

This article is based on a review of *Ayurvedic* texts. Materials related to *Snayugata Vata* and Tennis elbow, and other relevant topics have been collected. The main *Ayurvedic* texts used in this study are *Charaka Samhita*, *Sushruta Samhita*, *Astanga Hridaya* and available commentaries on these. We have also preferred to the modern texts and searched various websites & reports to collect information on the relevant topics.

CONCEPTUAL STUDY

'Snayugata Vata' Concept of Ayurveda

The term *Snayugata Vata* has its origin from a combination of three words, *Snayu*, *Gata* and *Vata*. The word *Snayu*, denotes anatomical aspect of body, Monier Williams has given the meaning of the word *Snayu* as body part which act to bind. The term *Gata* is derived from the root "*Gam*" which means gone to, arrives at, situated in, directed to and *Vata* denotes Physiological aspect of body. Thus, in case of *Snayugata Vata*, it means the site (*Snayu*) in which provoked *Vata* is situated.

Fundamental study of Snayu

Snayu has been explained as that which resembles a fibrous structure. It is said to be a structure which binds the joints and enables the body to bear weigh. [7] Snayu is considered as the Upadhatu (subsidiary) of Medhodhātu which helps the Dharaṇa (maintenance) of body. [8] According Vagbhatta, Snayu is also considered as one of the Pratyanga of human body. [9] Acharya Sharangdhara has the opinion that Snayu is a structure which binds Maansa, Asthi, and Meda of the body. [10] The Snayu has to be considered as a fibrous tissue component, tendon or ligament. [11,12]

Classification of *Snayu*

Depending upon the shape and location, *Snayu* are classified into 4 types^[13] – *Pratanavati Snayu* (spread out / branch), *Vrita Snayu* (round / cylindrical) – are also known as *kandara* (tendons), *Suṣhira Snayu* (hollow / porous / ring like) and *Pṛthula Snayu* (thick / flattened)

According to *Gananatha sen, Snayu* are of two types, *Snayusamhati* and *Snayuvyakti*. *Snayusamhati* is considerd as cluster (*Snayugucha*) which connects bones in joints and give support and strength to it. *Snayuvyakti* (*Tanu*-connective tissue fibres) are mentioned as structures related to *kandara*, *Amashaya*, and *Pakvashaya* etc. [14]

Structure and functions of Snayu

Snayu is one of the extra-articular or subsidiary tissue, which plays an important role in the posture of the human-body. Just as a boat consisting of planks becomes capable of carrying load of passengers in river after it is tied properly with bundle of ropes, similarly all Sandhi (bony joints) in human body are tied with Snayu by which persons are capable of bearing load. All the parts of the human body are compactly held together by Snayu. The Maansa, asthi and Meda of the human body are binded together by the Snayu. The injury to asthi (bones), peshi (muscles), sira (vascular structure), and Sandhi (joints) may not be as severe as to Snayu. Hence they should be protected from injury more than Asthi, Sira etc. They are total 900 in number. Out of these 900, 600 are present in shakha (extremities), 230 in koshtha (trunk) and 70 in griva (neck) and above. Snayu is considered as the structure which comes in Madhyama rogamarga (Middle route for diseases) and diseases that situated in Marma and Madhyama Rogamarga is considered Krichha Sadhya. Snayu, tvaka and raktavahini dhamani are root of Maansavaha strotasa when these are injured, swelling, emaciation/wasting of muscles, varicosity, and death occur.

Concept of Snayu marma

Marma are the vital points in the human body where there is the location of *Praṇa*. These points are the conglomeration of *Maansa*, *Sira*, *Snayu*, *Sandhi* and *Asthi*. *Snayumarma* are those specific locations in the human body which has predominance of *Snayu* component. Mainly convulsive disorders, severe pain, stiffness, disabilities, feeling of discomfort in all situations and even death may result in injury to *Snayumarma*. [22]

Nidana, Samprapti, Lakshna of Snayugata Vata

Acharya have not mentioned particular Nidana for Snayu Vata, so we can take common Nidana given for Vata Vyadhi^[23] Because Snayugata Vata is considered as a part of Vatavyadhi. Nidana can be classified into various types like

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Aharaja Nidana (Dietary Factors)

Ahara is the most common contributing factor for the producing of a disease. Intake of Ahara having Katu Tikta Kashaya Rasa, Sheeta, Ruksha, Laghu Guna and indulgence in Anashan(fasting), Alpashana(low-eating), Vishamashana(irregular eating), Adhyasana(overeating), Pramitashana lead to aggravation of Vata.

Viharaja Nidana—(Physical Activities)

Excessive indulgence in physical exercises, Manual works, Sporting activities, repetitive actions and working postures that combine force on elbow may lead to *Vataprakopa*.i.e. *Vicheṣṭa*(abnormal actions), *Bhramaṇa*(walking), *Bharvahana*(carrying load), *Pradhavana*(Fleeing), *Utkshepa*(foreward movement), *Vikshepa*(Irregular Movement)

Agantuja Nidana

Abhighata(trauma), Marmabhighata, Prapatana(Falling of), Prapiḍana

Manasika Nidana (Psychological Factors)

Chinta(worry), Shoka(grief), Krodha(anger), Bhaya(fear)

Kalaja Nidana (Seasonal and Environmental)

Grisham Ritu(summer), Jangam desha(arid or semiarid regions) etc.

Anya Nidana

Doshakshaya, Margavarana(occlusion of Vata), Rogatikarshana(emaciation due to chronic disease), Kriyatiyoga(excessive Panchakarma applications etc.), Vishamopachara((Faulty/Wrong Treatment)).

Some of the important *Nidanas* (etiological factors) of *Snayugata Vata* in context to Tennis elbow are discussed below

Ativyayama/Atichesta

(Excessive physical exercises/movements): Excessive physical exercises, overuse or repetitive activities may consider the important *Nidana* (etiological factor) for Tennis elbow. Such as Repetitive handling of heavy loads, forearm rotating motions, strong gripping force, and working postures that combine force etc. if done excessively or violently will affect the structures of tendon.

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Bharavahana

(Carrying heavy hand held tools) – load handling with raised arms causes excessive pressure and stretching effect over the structures of the tendons. Carrying excessive load will have direct affection the tendon. The constant compression will lead to degenerative changes in the tendons.

Abhighata (trauma)

Abhighata to Snayu(tendon) due to Prapatana (falling) etc, lead to structural deformity in the tendons. Hence any trauma to these structures will alter the structural integrity of the tendons. Direct trauma on tendon may produce a macroscopic or microscopic tendon tear. Pain in the tendonitis is not necessarily be only associated with only tendon structural integrity changes, but involvement of other structures may also give rise to symptoms.

Rupa (Symptoms) of Snayugata Vata

Acharya Sushruta has described Snayugata Vata defined as Provoked Vata when enlodge in Snayu than stambha, Kampa, Shoola, aakshep is created.

स्नायुप्राप्तः स्तम्भकम्पौ शूलमाक्षेपणं तथा | (Su.Ni. 1/27)

Snayugata Vata defined according to Acharya Charak that vitiated Vata accumulate in Snayu and impaired the function of Snayu.

बाह्याभ्यन्तरमायामं खल्लिं कुब्जत्वमेव च

सर्वाङ्गैकाङ्गरोगांश्च कुर्यात् स्नायुगतोऽनिलः॥ (ch.Chi.28/35)

In Astanga Hridya the description of Snayugata Vata is given

स स्नायु स्थितः कुर्याद् गृधस्यायामकुब्जताः॥ (A.H.NI.15/13)

Acharya Charak has also described in dhatupra Doshaja vikara that vitiated Vata accumulate in Snayu, Sira, Kaṇḍara and create symptoms described below

स्नायौ सिराकण्डराभ्यो दुष्टाः क्लिश्नन्ति मानवम् ।

स्तम्भसङ्कोचखल्लीभिर्ग्रन्थिस्फुरणसुप्तिभिः॥ (ch.su.28/21)

Bhavaprakashakara has described Snayugata Vata below

शुलमाक्षेपकाः कम्पः स्तम्भः स्नाय्वनिलाद्भवेत्। (Bh.Pr.Ma. 24/257)

So main symptoms of *Snayugata Vata* are as follows.

Shoola

Shoola is the chief symptom of *Prakupita Vata*. It is stated that without *Vata Shula* does not occur.^[24] It is obvious to experience *Shoola* in the diseases which are dominated by *Vata*. In case of *Vata* situated in *Snayu* gives rise to *Snayushoola*.

Stambha

Stambha means immobility (loss of flexion and other movements), as defined by <code>Dalhaṇa</code>. ^[25] Increased Sheeta guna of Vata is responsible for sthambha.

Kampa

Kampa means different types of tremor, Vridha (Provoked) Vata in Snayu gives rise to Kampa.

Ayama

Ayama means stretching. It is divided in bahyayama (Opisthotonus-Backword bending of body and antarayama (Emprosthotonus – forward bending of body).

Akshepa

Convulsion, Harassing.

Sankocha (contraction of body parts).

Khalli (cramps in body parts)/(neuralgic pain in feet, shoulders etc.).

Kubjata (back hump).

Ekanga Vata (Generalized Neurological disorder).

Sarvanga Vata (Localised Neurological disorder).

Gridhrasi (sciatica).

Granthi(ganglion cyst).

Suptata (numbness).

Sphuran (Throbbing sensation).

Samprapti (Pathogenesis) of Snayugata Vata

No specific *Samprapti* has been explained for *Snayugata Vata*. So it can be said that *Samprapti* of *Snayugata Vata* is same as that of general *Samprapti* of *Vatavyadhi*. [26] *Acharya Charak* has mentioned that *Nidana Sevana* aggrevates *Vata* and this *Prakupita Vata* gets accumulated in *Rikta Srotas* and gives rise to various generalized and localized diseases. Hence *Samprapti* of *Snayugata Vata*, can be defined.

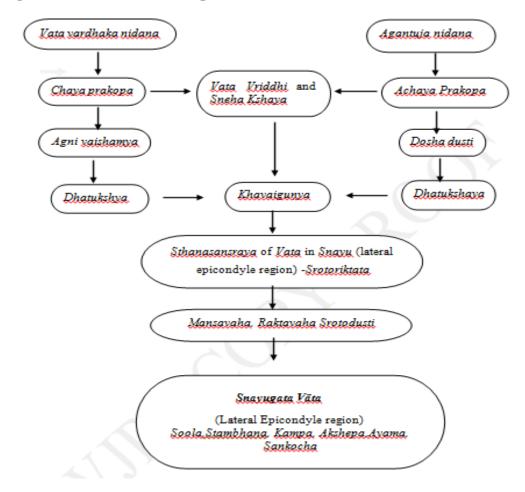
- 1. Vata svaprakopaka Nidanajanya.
- 2. Dhatukshyajanya(degenerative).

Vata svaprakopaka Nidanajanya and Dhatukshyajanya

The diet regimen which is mainly dominated by Vatika qualities Vata Vardhaka Ahara Vihara can be envisaged as one of the predisposing factor in Snayugata Vata. Excessive intake of Dravyas having Laghu, Rukṣa, Sukṣhma, Khara properties etc. lead to decrease of unctuousness (Snehadi guṇa Shunyata) which increases Riktata. This results in aggravation of Vata which leads to increased Chalatva of Vyana Vata and Agni Vaishamya (Impairment of Agni). Further Agni Vaishamya causes Anuloma Dhatukshya which ultimately results in Vataprakopa and vice-versa. Another hand Ativyayama, Aticheṣṭa (Excessive physical exercises/movements) and Abhighat (trauma) create Dosha duṣṭi and ultimately leading to Dhatukshya. Due to Dhatukshya the vitiated Vata moves in the body and settles down in Snayu (due to presence of Srotoriktata) and produced Shoola, Stabhamna, Kampa, Akshepa, Ayama, Sankocha etc. Symptoms. Greater the chronicity greater the damage (Dhatukshya) leading to Asadhya avastha because of Vata provoke.

To understand above pathogenesis in context to Tennis elbow here Excessive physical exercises, overuse or repetitive activities, carrying heavy hand held tools etc. etiological factors will lead to *Dhatukshya* (degenerative change) in the extensor tendon that resulting tendon structural alteration (tendon tearing) and causing painful and restricted elbow movement.

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Samprapti: Probable Schematic representation

Chikitsa siddhanta (Management Principles)

Withdrawal the *Nidana-Parivarjana* (primary causative factor) is considered as the most basic approach in the management of the disease. By the *Nidanaparivarjana* (Avoidance of etiological factors) *Pravṛddha Dosha*'s may not increase and by *Prakriti* itself, *Vikara* will get subside, secondly, the intensity of the *Doshaprakopa* should be considered before deciding the line of treatment.

Samanya Chikitsa (general treatment) for Snayugata Vata

Snayugata Vata being a Vatavyadhi, the Samanya Chikitsa (general treatment) of Vatavyadhi is applicable to Snayugata Vata also. Acharya Charak has not given specific treatment of Snayugata Vata, but he has quoted that Kriya Vaishishṭaya can be varied according to Sthana and Duṣya of Vatavyadhi. [27]

Acharya Charak quoted the general treatment for Vatavyadhi very clearly. If the disease is caused by Vata exclusively, and if no occlusion (Avarana) is involved, then in the beginning

the patient should be treated with *snehanakarma* for which *Ghṛta Taila Vasa* and *Majjā* should be administered followed by *Svedanakarma* Viz. *Nadisveda*, *Prastarasveda*, *Sankarasveda* etc.^[28]

Acharya Vagbhaṭa, in the Sutra of Vatopakarma, he has advised madhura, amla, Lavaṇa Rasa and Ushna Pradhana Ahara, Madya(liquor) with Guḍa, Abhyanga, ṣeka, Mardana, Veshtan(bandaging) and Basti has been advised. [29]

Vishesh chikitsa for Snayugata Vata

Acharya Sushruta mentioned the line of treatment for Snayugata Vata, i.e. when Vata affects Snadhi, Snayu and Asthi, then therapies such as Snehana (oleation); Upanaha (Poultice); Agnikarma (Thermal cautery); Bandhana (Bandaging); Unmardana (Trampling of the body) should be done without any laxity.

Showing Chikitsa modalities as mentioned in different classics in Snayugata Vata

| Treatment | Su.Sa ^[30] | $A.S^{[31]}$ | $A.H.^{[32]}$ | $B.P^{[33]}$ | $B.R^{[34]}$ | Cakra. ^[35] |
|-----------|-----------------------|--------------|---------------|--------------|--------------|------------------------|
| Snehana | + | Abyanga | + | - | 1 | + |
| Svedana | - | + | - | + | + | - |
| Basti | - | - | - | - | - | - |
| Virecana | - | - | - | - | - | - |
| Mardna | + | + | - | - | - | + |
| Upanaha | + | + | + | + | + | + |
| Baṁdhana | + | + | - | + | + | + |
| Agnikarma | + | + | Daha | + | + | + |

Govindasena writer of Bhaisajya Ratnavali has mentioned a separate chapter entitled Snayurogachikitsa Prakaraṇa deals with treatment aspects of Snayuroga. Any Drugs that having Properties of Agnidiptikara, Balavardhaka, Vatanulomana is effective in Snayushoola. Svedana, Seka, Pralepa treatment modalities should preferred in Snayushoola and in all type of Snayu shoola vaatanaashaka ghrita, taila and Rasayana should be use.

Treatment modalities for Tennis elbow

Tennis elbow can be placed into one of two categories: those that respond to conservative treatment and those that resist conservative treatment and indicate a need for surgical intervention. Non-surgical treatment will prove successful in 90-95% of cases. The best results from conservative management are obtained in patients who present for the first time with a tennis elbow duration of less than 3 months.

Conservative treatments include rest, ice, anti-inflammatory medications, physical therapy, and steroidal injections.

- Rest/activity modification. In most cases, the single best treatment for lateral epicondyle tendinosis is rest. Giving the body time to heal will usually provide complete recovery from all but the most severe cases of tennis elbow. Unfortunately, most of those who suffer from the injury do not have the luxury or inclination to rest for long periods of time. Rest is not an option for those who must use their arms for occupational duties or athletes who may simply refuse to limit their activity. [39]
- Splinting. A hinged brace or a counterforce brace that encircles the forearm just below the elbow to reduce the overload of the wrist extensors, considered a major pathogenic factor in lateral epicondylitis, is often used but there is little scientific evidence of its efficacy and effectiveness^[40]
- Specific exercises designed to strengthen forearm muscles, indicated especially in the rehabilitation of athletes. Concentric exercises and stretching are less effective than eccentric exercises. Recent literature has emphasized the importance of eccentric exercise as a key component of tendinopathy rehabilitation.^[41]
- Non-steroidal anti-inflammatory drugs taken orally or applied locally as a gel may relieve
 the pain of tennis elbow for a short while, but in the long term do not appear to be
 effective.
- Local cortisone injections: despite initial relief, the vast majority of patients suffer a recurrence. This form of treatment should not be repeated more than twice and scientific evidence suggests it should probably be abandoned^[42]
- Extracorporeal shock wave therapy- Shock wave therapy sends sound waves to the elbow. These sound waves create "micro trauma" that promote the body's natural healing processes.

DECUSSION

Snayugata Vata is described in all Samhita and sangraha grantha as a separate clinical entity under the heading of Vatavyadhi. It has been explained under the name of Snayugata Anila^[43], Snayugata Vata. It is not included in 80 types of Nanatmaja vatika vikara by

Acharya Charak. But, Snayu involvement disease i.e. akshepaka, pakshavadha, Ekangavata, Sarvangavata, Gridhrasi etc. Clinical manifestations like Gridhrasi (sciatica) and pakshavadha (paralysis) occur due to the impairment in functional role of Snayu along with Sira (blood vessels) and kandara (tendon). As the functional element Vata is responsible for all movement in body, most of the diseases of Snayu are due to vitiated or aggrevated Vata and thus, show relief in symptoms when treated with the regimen of Vata. As mentioned Vata particularly Vyana Vayu has a close relationship with Snayu, because Vyana Vayu controlled all the functions of the body like Gati, Akshepaṇa, Utkshepaṇa, Nimesha and Unmesha. These functions are directly connected with joints, than disturbed Vyana Vayu can disturb the functions of joints. [44] Hence, Snayu are present in close relation to Sandhi (bony joint) than disturbed Vyana Vayu can disturb the functions of Snayu. Affliction of Snayu is central event in the Samprapti of Snayugata Vata. Ayurveda has mentioned that Snayugata vata is a kashtasadhya vyadhi because all the Vatavyadhi are difficult to cure. Owing to distracting nature and difficult management Vatavyadhi has been included in Aastamahagada. [45] Snayu are one of the types of Marma and form a part of Madyam rogamarga. Thus, involvement of Marma, Madhyama rogamarga, Vata Dosha and Dhatukshya make disease kasta sadhya.

Today, it is clear that lateral epicondylitis is a degenerative disorder that compromises the extensor tendons originating from the lateral epicondyle, extending infrequently to the joint. Although the name "lateral epicondylitis" implies an inflammatory reaction, histologic evidence suggests that this condition is more reflective of a chronic angiofibroblastictendinosis. Consequence, "lateral elbow tendinopathy or tendinosis" is used instead of "lateral epicondylitis". [46] Repetitive contractions have been implicated by causing micro trauma to the common extensor origin, with cumulative degeneration leading to pain, disability and others symptoms. 'While many theories exist as to the true cause of lateral epicondylitis, no single explanation is sufficient to elucidate the true cause. There are many risk factors for developing lateral epicondylitis, and one should not falsely assume that only tennis players are susceptible. In fact, tennis elbow occurs most commonly in non-athletes, and can arise in people who are not manual workers. Many of the individuals who are affected cannot describe any specific precipitating factors. [47] In general terms, the factors that are most commonly implicated in the aetiology of tennis elbow involve: Repetitive activity entailing flexion/extension or pronation/supination of the forearm, Overuse of the extensor musculature of the arm and Psychosocial considerations.

Tennis elbow is degenerative disorder which involves a long chain of disturbances that takes a longer duration to develop the pathological picture of the disease. Ignorance may cause a slow but gradual deterioration of tendon. According Ayurveda, in *Snayugata Vata* (Tennis elbow) *Dhatukshya* (degeneration) and Provoked *Vata* plays an important role in precipitation of disease. Ayurveda Treatment modalities such as *Snehana* (oleation); *Upanaha* (Poultice), *Agnikarma* (Thermal cautery); *Bandhana* (Bandaging), *Unmardana* (Trampling of the body) restore function in tennis elbow by rehabilitation, nourish and strength of tendon.

CONCLUSION

It can be said the pathological state of *Snayu* is *Snayugata Vata*. Description for *Vataprakopa* in general and *vataroga* in particular is seemed to be the aetiology for *Snayugata Vata* also. *Vata prakopaka Nidana*, *Prakupita Vyanavayu*, *Agni vaiṣamya*, and *Dhatukshya* are essential component for disease manifestation. Tennis elbow is frequently related to mechanical overload occurring during sports participation or at work. Thus repetitive activity and overuse are often implicated. The condition has considered a degenerative tendinosis. Ayurvedic approach and specific exercises may contribute in tendinopathy to assist in the healing and regeneration of tissues.

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