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DE QUERVAIN'S DISEASE - AN AYURVEDIC PERSPECTIVE

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ABSTRACT:

De Quervain's disease is the condition of inflammation, thickening, and stenosis of the synovial sheath surrounding tendons of abductor pollicis longus and extensor pollicis brevis. It is commonly affecting women aged 30-50 years. Symptoms are pain and tenderness at radial styloid process, swelling, difficulty in thumb movements and "stop and go" sensation in the thumb. In ayurveda, the tendons can be co-related with *snayu* and symptoms in De quervains diseases including pain (*shoola*), stiffness (*stambha*), and limited movement (*akshepana*) in joints can be co related with symptoms of *vata vyadhi*. *Snayugatha vatha* is categorized under *vata vyadhi*. The vitiated *vata dosha* affecting the *sharira snayu* (tendons and ligaments) particularly in the *angushta moola* of *manibandha sandhi* (wrist joint) and causes *Angusta moola parswa snayugatha vatha vyadhi*. The treatment of *snayugata vata* are *snehana* (oleation therapy), *upanaha* (fomentation), and *agnikarma* (thermal therapy). These ayurvedic treatments offer a cost-effective and simple approach for managing De Quervain's disease.

Keywords : Snayugatha Vata, Vata Vyadhi, De Quervain's Disease, De Quervain Tenosynovitis

INTRODUCTION

“De Quervain's disease is a condition in which the common sheath of the tendons of abductor pollicis longus and extensor pollicis brevis becomes chronically inflamed, thickened and later on stenosed as a result of degenerative changes or unaccustomed over use.”[1]. The synonyms are stenosing tenosynovitis[2], Washer woman's sprain[3], Nursing mother's wrist[3], New mothers wrist[4]. The prevalence rate of De-Quervain's disease in a normal population is 0.5 % in males and 1.3% in females[5]. It is 5 times more common in women than men[6]. It usually affects the productive age of 30-60 years[2]. The exact etiology is not known[2]. The other causes are degenerative changes, repeated over use of wrist, extension of thumb against resistance, trauma to the tendon sheath, inflammatory arthritis like rheumatoid arthritis[1]. The symptoms are pain, tenderness & swelling at the radial styloid process and difficulty in thumb movements[4]. In modern medicine, the management includes NSAIDs, splintage, corticosteroid injection & surgical decompression[4]. *Vata* is one among the 3 functional unit (*tridosha*) in the body. The normalcy and abnormality of *tridoshas* respectively sustain and destroy the body. According to ayurveda, *snayugatha vata* is explained under the context of *vata vyadhi*. In Ayurveda classics, *snayu* is mentioned as the *upadhatu* of *medas* (fat)[7]. Susrutha explained that *snayus* are the structures which can sustain weight and helps in fixation of *sandhis*[8].

Normally, *vata* sustains all vital bodily functions including respiration and regulates activities of the body, mind and speech through its dynamic movement. When *vata* becomes vitiated or imbalanced, its qualities become exaggerated or distorted. This disruption can lead to an imbalance in

the normal functioning of *dosa*. The vitiated *vata* travels and localized in a specific *sthana*, leading to the disturbance in the normal function of that *sthana*. Thus in De quervain's disease it may be interpreted that, there is vitiation of *vayu* due to various *nidanans* and this *vata* is dislodged to the *snayu* in the *manibandha sandhi*.

Vyana vayu is a subtype of *vayu*, has a crucial connection with various body joint functions such as movement (*gathi*), extension (*utksepana*), contraction (*akshepana*), closure (*nimesha*), opening (*unmesha*)[9]. These functions are closely linked to joint health. When *vyana vayu* becomes imbalanced (*vyana vayu dusti*), it disrupts normal joint function, affecting *snayu* also. *Snayu* are the binding structures of *mamsa*, *asthi*, *medas* and *sandhi* in *sareera*[10]. This indicates the close relation of *snayu* with *sandhi*. So the vitiated *vyana vayu* can disrupt the normal function of *snayu*. It leads to the *utpathi* of *snayugatha vata vyadhi*.

According to susrutha the *snayugata vata lakshanas* are *shoola* (pain), *sthambha* (stiffness), *akshepana* (convulsions) which can be correlated with the signs and symptoms of De-Quervain's disease[11].

MATERIALS AND METHODS

The study was conducted through manual review of *Snayugatha Vata* described in *Vata Vyadhi adyaya* of Susrutha Samhitha, Ashtanga Hridaya and Charaka Samhitha. Review of articles found using the keywords such as *Snayugata vata*, *Vata vyadhi* and De Quervain's disease was done.

Snayu description in ayurveda classics

Snayu utpathi

Snayu is considered as an *upadhatu* of *medas* [7].

Definition of snayu

According to Acharya Sargandhara, *snayu* is a structure which support the body by binding *mamsa*, *asthi* and *medas*[10].

Formation of *snayu*

The *mridu paka* of the *sneha* part in the *medas* forms the *sira* and the *khara paka* of the *sneha* part in the *medas* forms the *snayu*. So the difference between the *sira* and *snayu* is that the *paaka* of *sira* is *mridu* and *snayu* is *khara*[12].

Functions of *snayu*

All *sandhis* in a human body is tied with *snayus* [8]. *Snayus* strengthen and stabilize the joints. It is just like a boat consisting of planks becomes capable of carrying load of passengers in river after it is tied properly with bundle of ropes. Likewise the human body will be able to carry weight[8]. All the parts in a body are compactly held together by *snayu*. In the human body *snayu* bind together the *asthi*, *mamsa* and *medas*[10].

Importance of *snayu*

Injuries to *snayu* are considered more severe than damage to *asthi* (bones), *peshi* (muscles), *sira* (blood vessels and nerves), *sandhis* (joints)[8].

The one who knows clearly about the tendons present inside and outside the body is able to extract any foreign body however deep it is[13].

***Snayugatha vata* - panchapanchaka**

Nidana of Snayugatavata

Acharyas not mentioned a specific *nidana* for *snayu gata vata*. All *acharyas* explained *snayu gatha vata* in the context of *vata vyadhi*. Hence it can be taken as the *nidana* of *vata vyadhi* as the *nidana* of *snayugata vata*.

They are the following

Dietary Factors (*Aharaja*)

Consuming insufficient or excessive food

Eating food with dry(*rooksha*), cold(*seeta*), and light(*laghu*) qualities

Overindulging in food with bitter(*tikta*), pungent(*katu*), and astringent(*kasaya*) tastes[14]

Lifestyle Factors (*Viharaja*)

Overexertion (*vyayama*)

Overindulgence in sexual activity (*vyavaya*)

Lack of sleep (*prajagara*)

Fasting or starvation (*langhana*)

Suppressing natural urges (*vegadharana*)

Traveling or moving excessively (*plavana*, *adhva*, *sheeghra yanayana*)

Uncomfortable sleeping position (*dukha sayya*)

Daytime sleep (*divaswapna*)[14]

Mental Factors (*Manasika*)

Grief (*soka*)

Anger (*krodha*)

Fear (*bhaya*)

Excessive thinking (*atichinta*)[14]

External Factors (*Agantuja*)

Trauma (*abhighata*)

Injury to vital points (*marmaghata*)[14]

Disease-related Factors (*Vyadhisambandhi*)

Disease progression (*rogadikarshana*)

Irregular treatment (*vishamopachara*)

Depletion of body tissues (*dhatukshaya*)

Excessive flow (*atisravana*) of *doshas* and *rakta* (blood)

Excessive fasting or starvation (*atilanghana*)[14]

Seasonal and environmental (*Kalaja Nidana*)

rainy season (*varsha ritu*), winter season (*shishira kala*) etc[15]

Poorvarupa of *Snayugata vata*

According to *Charaka acharya*, the *poorva rupa* of *vata vyadhi* is "*avyktha lakshana*"[14]

Lakshana of Snayu gata vata

According to **Acharya Sushruta**

Stambha (stiffness), *Kampa* (tremors), *Soola* (pain), *Akshepana* (contractions)[16]

According to **Acharya Vagbhata**

Gridhrasi (sciatica), *ayama* (spinal cord disorders), *kubjatha* (kyphosis)[17]

According to **Acharya Charaka**

Bahyabhyantara ayama (spinal cord disorders with external and internal symptoms), *khalwi*, *kubjatha* (kyphosis), *sarvanga vata* (*vata* affecting the entire body), *ekanga vata* (*vata* affecting a specific part of the body)[18]

Samprapti of Snayugatha vata (Pathogenesis)

Two primary causes lead to *vata prakopa* are *dhatu kshaya* (tissue depletion) and *avarana* (obstruction)[19]

Dhatu Kshaya (tissue depletion): Emptiness (*riktatva*) or reduced *snigdhatva* (lubrication) in the body's channels, allowing *vata* to fill the space and cause various diseases. Chakrapani describes *riktatva* is emptiness which results from reduced *snigdhata* [14]

Avarana (Obstruction): Other *doshas* block the normal pathways of *vata*, leading to its imbalance[19]. The excessive intake of *vata prakopa aharas* which have *gunas* like *laghu*, *ruksha*, *seeta*, *khara* etc will lead to increase in *vata dosha*, inturn leading to *vata prakopa* lakshanas[20]. It also imbibing *vikruti* in *meda dhatu* and it results in *meda agni vaishamy* (Impairment of digestive fire) which may lead to *vikruta snayu* (*upadhatu* of *medas*) formation.[7] On the other hand, *viharas* like *ativayama* (excessive exercise), *atichesta* (Excessive physical exercises/movements) like running, swimming etc and *abhighata* (*manibandha marma abhighata*) generally causes *sthaniya vata dushti* [15] with *rakta* as the

underlying *dushya*. Due to this *vata prakopa*, the vitiated *vata* moves in the body and settles down in *snayu*, and produces *shoola*, *stambhana*, *akshepana* etc[16].

The pathogenesis of *snayugata vata* with respect to De Quervain's disease can described as following. The overuse of wrist joint and trauma are the usual reasons causing *vata dushti* which inturn causes *dhatu vaisamy*(degenerative changes) which causes structural alternation (tear) in the synovial sheath of tendons of abductor pollicis longus and extensor pollicis brevis in the wrist that causing painful and restricted simple wrist movements.

Chikitsa Siddhanta

According to Susrutha, when *vata* is aggravated in tendons(*snayu*), joints(*sandi*), and bones(*asthi*), the treatments applied are *snehana* (oleation), *upanaha* (fomentation), *agnikarma* (thermal therapy), *bandhana* (binding), *unmardana* (gentle pressing)[21] According to Vagbhata, when *vata* aggravated in tendons(*snayu*), joints(*sandi*), and blood vessels(*sira*) are treated with *sneha* (oleation), *daha* (heat), *upanaha* (fomentation)[22].

Charaka *acharya* not mentioned any specific treatment modality for *snayugata vata*.

Trials done on snayugata vata

Concept of Snayugata vata and its management through ayurvedic aspect (Akhil et al.2009)

Ayurvedic Treatment Modalities for *snayugata vikara*, *Swedana* (Heating Therapy): Induces sweat, reducing inflammation and pain through *Kshapana* and *Shoshana*.

Upanaha (Poultice): Uses *Vatanashaka Dravyas* to reduce pain and inflammation.

Agnikarma (Thermal Cautery): Reduces inflammation and promotes healing.

Bandhana (Bandaging): Uses medicated paste with *Vatanashaka Dravyas* to reduce pain, inflammation, and promote tendon healing.

Snehana Karma (Oleation Therapy): Employs *Vatanashaka Sneha Dravyas* for *Abhyanga*, reducing pain, inflammation, and promoting tendon nourishment and strengthening.

These Ayurvedic modalities aim to rehabilitate, nourish, and strengthen the affected tendons, promoting holistic healing and recovery from *snayugata vikara*. [23]

Effect of *agnikarma* in *snayugata vata* treatment protocol (Senan, et al.2023)

When heat of *agnikarma* come in contact with tissue, the heat energy transferred to the cells. This localized temperature rise activate the thermostatic centre of the body which causes vasodilation and increased blood flow. According to Vant's Hoff's principle, the basal metabolism is increases for every 1 degree rise in body temperature. The warm tissues relaxe the muscles and reduces the spasm and pain. According to Ayurveda *agnikarma* vitiated *pita* and *rakta* which causes blister formation, fever which may be interrelated to acute immune response to burns. The *ushna*, *tikshna*, *sukshma guna* of *agni* causes *ama pachana* which removes blockage from channels. It also removes the *avarana* and obstruction(*sanga*) of *vayu* which is the cause of pain. *Agniakrma* also arrests the pathogenesis of the *snayugata vata vikara* (*dosa dushya vigatana karaka*) [24].

Effect of *agnikarma* with *tapta kshoudra* in Tennis elbow (Anji et al.2024)

The *Vata doṣa* acts on the *medas* and absorbs its *snigdhamsa* (*kaharapaka*) resulting in the formation of tough structures called *snayu* (tendon). The *vata* undergoes *dushti* due to *nidana* of *vata dushti* factors

and *sthanasamsraya* occurs in *kurpara sandhi* (elbow). *Vyana vayu* is the *vayu* responsible for movement of *sandhi*(elbow) is affected here and features such as pain, stiffness, restricted movement, etc. develop in this region. These symptoms are also due to *kaphavritta vyana vayu*. Hence, it is also considered an important causative factor for manifestation of *Snayugata Vata*. If the kharatwa property of snayu due to *vata* again increases, it undergoes brittle and vulnerable to tears. The collagen loses its structure due to the constant force applied to the tendon which makes the collagen weak and cannot perform its function suggests the *dhatu kshaya*. *Agnikarma* is indicated for *vata* and *kapha vikaras*. Due to *vata* , the *ruksha*, *khara* and *sita gunas* of the tendon increases which decreases the elasticity and strength of tendon. The *sita guna* of *vata* and *kapha* causes *sthambha* which also affects the movement. By the process of *snigdha agnikarma* from *madhu* to *snayu* helps the tendon to overcome *sita guna* of *vayu* and *kapha*. The heat generated during *agnikarma* activate the spinothalamic tract which may lead to stimulating descending pain inhibitory fibres (release endogenous opioid peptides). These peptides bind with opioid receptors at *substantia gelatinosa ronaldi* which inhibits the release of substance P (presynaptic inhibition) and blockage of transmission of pain sensation. Thus it can be inferred that the *usna* and *tikshna guna* of *agni* helps for the deeper penetration and reaches *snayu* which reduces the pain through the process of *vata samana*. [25].

Effect of *agnikarma* with *tapta guda* in carpal tunnel syndrome – A case study. (Chahna et al.2022)

Manibandhasritha snayugata vata, a condition characterized by tendon inflammation (*Sopha*) and *Vata* imbalance, often occurs due to repetitive wrist

movements and exertion. This can lead to Vata Dusti and Sthanasamsarya in the Snayu near the Manibandha Sandhi. Agnikarma, using Tapta Guda, is an effective treatment for Vatakapahaja diseases due to its Ushna, Tikshna, Sukshma, and Ashukari properties. This treatment: Removes Srotavarodha (obstruction in micro-channels), Pacifies vitiated Vata and Kapha, Increases blood circulation to the affected site, Flushes away pain-producing substances (P substances), providing symptom relief

Agnikarma with Tapta Guda is particularly effective due to its ability to penetrate heat through Sukshma Sira, making it a valuable treatment option for Manibandhasritha snayugatavata.[26]

DISCUSSION

De Quervain's disease is a condition in which the common sheath of the tendons of abductor pollicis longus and extensor pollicis brevis becomes inflamed, thickened and later on stenosed[1]. The exact etiology is not known[2]. Even though repetitive contractions and overuse of thumb, degenerative changes and trauma is the cause of De-Quervain's disease[1].

In various Ayurvedic texts (*Samhithas*), *snayugatha vata vyadhi* is recognized as a separate disorder under *vata vyadhi adhyaya*. The factors responsible for *vata dushti* such as *ativyayama*, *abhighata* and *dhatukshaya* in the wrist vitiates the *vata*, specifically *vyana vayu* which is localized in *manibandha sandhi* (wrist joint) is similar to the etiological factors of De Quervain's disease.

The pathogenesis is the vitiated *vyana vayu* disrupts the normal functions such as *gati* (movement), *akshepana* (contraction), *utkshepana* (extension) of the *manibandha sandhi*[9]. This disturbance alters the normal functions of *manibandha sandhi*. *Asamanaya*

karma (overuse or trauma) of the *manibandha snayu* is the main entity in the *samprapti* of *snayugata vata* [23]. The key factors responsible in the disease development are involvement of *marma* (vital points), *vata dosha* imbalance, *dhatu vaishamya* (tissue imbalance) makes this disease more *kashta sadya* [23]. The continuous friction between the tendon sheath and bone causes thickening and stenosing of the tendon sheath.[27]. Trauma in the tendon sheath causes oedema in the tendon sheath, finally it leads to fibrosis[27]. Both alters the normal function of that tendon and the normal movement of wrist. In ayurveda *snayu gata vata vyadhi* is due to the *vata kopa* caused by *vata kopa nidanas*, which leads to *dhatu vaisamya* (abnormal changes) results in abnormal medas formation which in turn alter the normal function of *manibandha snayu* resulting in De-Quervain's disease.

The symptoms of the De Quervain's disease such as pain, tenderness and limited movement of thumb can be correlated with *soola* and *sthambha* symptoms explained for *snayugatha vata* by *susrutha acharya* in ayurveda.

The modern management includes rest with splintage bandage, NSAIDs, physiotherapy exercise, deep friction massage, heat therapy, ultrasound therapy, laser therapy and in rare conditions De quervain's release surgery. Rest is provided with splint bandage or brace. Both provide rest to tendons. NSAIDs helps to reduce the inflammation and pain. Ultrasound therapy relieves pain and enhance wound healing by high frequency sound. Deep friction massage, exercise is effective in reducing symptoms of De Quervain's disease. De quervain's release surgery is the surgical release of the first extensor compartment helps to relief pain.

In ayurvedic treatment modalities for *snayu gata vata vyadhis* are *snehana* (oleation), *upanaha* (fomentation), *agnikarma* (thermal therapy), *bandhana* (bandaging), *unmardana* (gentle pressing)[22].

Snehana (Oleation) - *Abhyanga* (massage) with *vata-nasaka dravyas* reduces exertion caused by *vata*, nourishes the *snayu*, reduces the degenerative changes of the sheath[28]. It can be used as internally and externally.

Upanaha (poultice) is a type of *swedana karma* (fomentation type). *Upanaha* with *vata nasaka dravyas* produces local warmth in *manibandha sandhi* which reduces the pain and inflammation of the *snayu*[23].

Agnikarma (cautery) – Because of the temperature change due to *agnikarma* disturbs the thermostatic centre of body and distributes the temperature through out the body. Due to this dilation of blood vessels and vasularity increases. Because of the temperature muscle relaxation occurs and muscle spasm is relieved with inflammation and pain. Because of the tissue warm , it reduces the pain, inflammation and muscle spasm [24] .

Bandhana (bandaging) helps in the reduction of the pain, inflammation and provide proper rest of the tendon sheath.[23]

Unmardhana (gentle pressing) helps to reduce the pain caused by *vata* .

Internal medicines – medicines which reduces inflammation such as *Punarnavadi kashaya*, *Maharasnadi kashaya*, *Yoga raja guggulu* tablet can be used

The modern treatment can be co related with ayurvedic managements like splintage bandage with ayurvedic *badhana*, heat therapy with *upanaha*, laser

therapy with *agnikarma* and deep friction massage with *unmardhana* and *abhyanga*, NSAIDS with anti inflammatory internal medicines.

CONCLUSION

In De Quervain's disease the patients experience pain during activities requiring thumb such as gripping, pinching etc. As the thumb movements are painful, the disease makes the house wives, IT professionals, skilled workers, weight lifters and sportsman their life miserable. Thus repetitive movements and overuse are main cause of sheath trauma, it is considered as degenerative condition. *Snayugatavata* is a disorder affects the *snayu* due to the vitiation of *vata dosa*. The *nidanas ativayama* (excessive exercise), and *abhighata* (trauma) are the etiological factors which vitiate the *vayu* present in the *manibandha sandhi*, leads to *dhatu vaishamyas* (*meda* and *snayu*) and complete manifestation of the disease. Therefore the main components of *snayugata vata* are *vata prakopaka nidana*, *prakupita vyana vayu*, *Dhatu vaishamyas*. The Ayurvedic treatments for the management of *snayugatha vata* are *sneha*, *upanaha*, *agnikarma*, *bandhana* and *unmardhana*. The specific Ayurvedic treatment modalities may help to contribute in the healing and regeneration of tissues which is cost effective and thereby beneficial for the welfare of the mankind.

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