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'CRITICAL STUDY OF SNAYU W.S.R TO PRATANVATI SNAYU'

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ABSTRACT

Snayu is the most important structure of the human body which helps to maintain the weight carrying capacity of the joint and plays a crucial role during the movement of joint. Depending upon the shape and their locations, the *Snayu* is classified into four types, *Pratanvati*, *Vritta*, *Sushira* and *Prithula*. *Snayu* has also a very close relation with functional element called *Vata*. When aggravated *Vata* located in *Snayu*, symptoms like pain, stiffness, swelling, improper or painful movement of the joint are produced. The *Snayu* is much similar to the ligament. Any injury to the ligament is known as sprain and its symptoms are same as the symptoms of *Snayugata Vata*. At present time, sprain is most common in sportsman and hard workers. So, the complete knowledge of *Snayu* is very essential to become a good physician and surgeon also.

KEYWORDS: Snayu, Comparitive Study, Ligament.

INTRODUCTION

In Human body, every structure has a great importance for many types of functions. Sandhi(joint) is importantfor locomotion and other function. The Strength of joint depends upon the Snayu, Asthi and Mamsa. Snayu maintains the stability of joint during movement of the body. Any traumatic injury to the joint causes severe pain, swelling, sprain and improper

movements of the joint. The role of Pratanvati Snayu in stabilizing the joints as per concept of modern medical sciences is very important. In present scenario all the branches of modern medical sciences including anatomy has almost achieved its peak, with the wide application of modern tools and technology. Even though its uses are elaborated in Samhitas its application in today's era should be more explained with the help of modern concepts of stabilization of joint. Therefore, this work was undertaken for comparison and application of concept of Snayu. The elaboration and clarification of the term Snayu is required here along with its parallel correlation with ligaments, tendon and aponeurosis and other relevant structures in modern medical sciences. In this way the anatomical importance of Pratanvati Snayu as a structural constituent of human body, its role in the movement of joints and its applied value with a modern and scientific approach could be stabilized. I am sure that it will provide useful study tool for upcoming scholars in the further study of Snayu in future and it will also provide the certainty and clarity to the basic concept of Snayu.

AIMS AND OBJECTIVES

1) The correlation of Pratanvati Snayu with new concept of ligament, tendons, fascia, retinaculum, aponeurosis etc. on the basis of its structure, functions and applied anatomy in present scenario.
2) To find out Pratanvati Snayu present at the level of joints as mentioned in Ayurvedic and Modern medical sciences.

MATERIAL AND METHODS

Snayu:-The word Snayu is actually derived from *'Sa'* Dhatu. When the Pratyaya *'Bahulkat Una*' is added with '*Sa*' Dhatu in the context of *'Sutra'* or *'Shan'* it give rise to the word Snayu. It is a white rounded structure commonly used to bind structural components together. It is also referred asss *'Vayu Vahini Nadi'*.

Classification of Snayu:-The Snayu is classified into four types by Acharya Sushruta-These are Pratanvati, Vritta, Prathul and Sushira respectively. Out of these, Pratanvati Snayu is present in extremities and in all the joints of upper and lower limbs. Acharya Sushruta has considered Vritta Snayu as Kandara. He has stated that Sushira Snayu is usually found to be present in Amashya, Pakvashaya, Vasti, whereas Prathul Snayu are present in Parshva(flanks), Ura(chest), Prustha (back), Shir (head) and Vankshana.

There are four types of Snayu:-

1.	Pratanvati Snayu	In Shakha and their Sandhies.
2.	Vritta Snayu(Mahasn ay)	They have also been named as Kandara. Found in Shakhas
3.	Sushira Snayu	In Amashaya, Pakvashaya, Antra and Basti
4.	Prathul Snayu	In Parshva, Prishva, Pristha, Uru.

Table showing the various types of Snayu and their contemporary structures

Sr. No.	**Name ofSnayu**	Pratanvai Snayu	Vritta Snayu	Sushira Snayu	Pruthul Snayu
1	**Basic building Component**	Collagen fibre	White Collagen fibre	Myofibrils	White Collagen fibres.
2	**Site of attachment**	All the joints of the body	In Shakhas	Amashaya Pakwashay Vasti	Parshva, Uras, Pristha and Shira region
3.	***Contempora ystructure in Modern Science***	Ligaments	Tendons	Sphincter muscle, pyloric, Anal and Urinary bladder orifice	Flattened or ribbon shaped tendons aponeuroses and fascia.
4.	**Functions**	They strongly bind the joints	Stronger function of Extremit ies by muscula r pulling	To close the orifice	To Separate the different parts, To act as muscular pull. To help in movement.

Importance of Snayu

1) Just as a boat made by joining many firm wooden planks, is able to bear weight of persons in the water, similarly all the joints of the body with many Snayu are able to sustain the weight of the body.
2) One who knows Snayu, superficially as well as deeply, is able to extract the deeply seated Shalya (Foreign body) very successfully.

So for as the derivation of word Snayu is concerned, it is derived from dhatu "Una" in the meaning of impulses carrying cord i.e. "Vayu Vahini Nadi".

Now according to modern medical sciences it has been derived from the following words-

- Sinew - A tough fibrous tissue which unites a muscle to a bone, i.e. Tendon; (Concise English Dictionary, by A.C. Annadale).
- Sinew - A tough fibrous animal tissue or a tendon. (New oxford dictionary, 1926).

The concise English Dictionary by A.C. Annadale, New oxford dictionary and Taber's dictionary have defined the word sinew as tough fibrous tissue used for connecting purpose. It is worth mentioning one thing here that the Sanskrit words have got very much

philosophical affinity to the English words which is further established by the example of Snayu. It seems that the English word sinew is derived from the Sanskrit word Snayu. Snayu have got similar meaning i.e. 'a tough fibrous tissue'. While describing the incurable Vrana Acharya Sushruta has been described a bunch or network of fibres as Snayu, like structure, made up of Shan (fibres or cord material). At another place in reference to joint, it is told that the joints of the body are connected by various Snayu just like a boat metaphorically which, when made up of wooden planks and firmly tied with cords is capable to bear the weight of the body. These two descriptions submitted by Acharya Sushruta is indicating that Snayu is a strong cord like structure made up of fine fibres and helping in binding together hence keeping stable the body parts.

While describing the constituents of Marm in Sharirsthan, Acharya Sushruta has confirmed Snayu as one of the chief component of Marm in the same way like other structures i.e. Mamsa, Sira Asthi and Sandhi; that itself prove its clinical importance. He has also described Snayu as one of the types of Marma which strengthens its clinical importance in surgical procedures.

As stated in Taber's cyclopedic medical dictionary that the ligament is a band of flexible connective tissue connecting the articular ends of bones or supporting viscera, fasci or muscles; it is composed of fibrous material folds of thickened peritoneum and remnants of foetal structure.

The definition also proves the concept of Ayurveda that the Snayu which are strong cord like structure made up of fine fibres, helps in binding the body parts together, are known as ligaments. Acharya Sushruta has also recommended some material to be used in suturing the raised margins of the Vrana. The Snayu fibres have also been included in this list; therefore it emphesises that Snayu are the fibre like material which can be used for suturing purpose in place of thread. Acharya Sushruta has also recommended that the Snayu should be protected along with other vital structure like Marma, Sira, Sandhi etc., where it becomes necessary to perform surgery.

According to Taber's cyclopedic medical dictionary the white fibrous tissues are made up of shining white fibres. They are thin and unbranched; the fibres do not run alone but is comprised in bundles. White fibrous tissue is present in tendons, ligaments, aponeuroses, and articular capsule, the deep fascia of the abdomen and limbs, and duramator. Its basic function

is to connect the different tissue and parts of the body together to provide mechanical support and protection against stretch and pressure and in this way providing flexibility to the connecting parts. Chemically it is constituted by collagen proteins; hence it is argued that Snayu are such fibres (as mentioned earlier), which can be used as suturing and supporting material along with providing stability and firmness.

In Pratyaksha Shariram Acharya Gananath Sen has also repeated the same statement mentioned above, in his own way. He mentions that Snayu is a dense bunch of shun or cord fibres which help in binding the Sandhi. He has explained the term Snayu by two meanings the first is referred to as a binding agent for Asthi and Sandhi, while second is indicated for the special feature of Snayu. These Snayu (Pratanvati Snayu) are described to be seated in Kala, Kandara and muscles particularly of Parshva and Uras Pradesh.

In both Sushruta Samhita and Ashtang Sangraha, the Snayu is classified in four types-

- Pratanvati Snayu
- Vritta Snayu
- Sushira Snayu
- Prathul Snayu

Out of these the Pratanvati is found in Shakhas, Sushira snayu is found in Amashaya, Pakvashaya and hollow oragans and Prathul Snayu is in Parshva, Urah, Prishtha and Shir Pradesh whereas the Vritta Snayu is considered to be known as Kandara.

According to Dr. Ghanekar the Pratanvati Snayu are ligaments, Vritta snayu are tendons which help in joining the muscles to the bones, Sushira Snayu are known as perforated muscle i.e. sphincter muscle while Prathul Snayu are flattened or ribbon shaped tendons called aponeuroses. The classification of Snayu in context of modern medical sciences is based on the definition of the terminology such as ligament, tendons, sphincter muscles and aponeuroses. It seems that Dr. Ghanekar has picked up these terminologies to explain the concept of Snayu submitted by Acharya Sushruta and Acharya Vagbhat. On the basis of chemical composition it is found that the terms ligaments, tendons, aponeurosis and sphincter muscle are meant for the same function. If we go in details about their formation, structure, functions, and place of attachments, it is found that there is no major difference in both descriptions given in Ayurvedic classics as well as in contemporary modern medicine books. One more thing is necessary to be mentioned here that Snayu has also been described as the

impulse carrying cord by some ayurvedic schollars which carry the impulse from one place to another. Acharya Sushruta has said that Pratanvati Snayu is found in Sakhas and all the joints of the body which is considered as ligament by Dr. Ghanekar and Damoder Sharma Gaur both.

The ligaments provide stability at the articulating sites. They firmly hold the articulating ends of the bones together. They also facilitate joint to be move in various directions. The ligaments are composed of fibrous materials, folds of thickened peritoneum and remnant of foetal structures but at the joints it is made up of white shining cord like fibres arranged in form of bundles. By virtue of their structural components, they also provide a considerable amount of flexibility to the joint. Both Acharya Sushruta and Acharya Sharangdhar have stated that Snayu are meant to bind the Mamsa Dhatu and Asthi Dhatu together.

Kaviraj Gannath Sen has also mentioned the term Snayu with detail descriptions in his book 'SANJYA PANCHAK VIMARSH' after giving the definition of Snayu in Pratyaksha Shariram. To fulfill this purpose he has taken the help of various Samhita and modern anatomy books. On the basis of literature contained in those Samhitas he has been picked up few instances to explain the structure of Snayu in Practical way. On the basis of discussion, he has been come to this conclusion that the term Snayu (Pratanvati Snayu) refers nothing but only the fibrous tissue. He has elaborated the fact that the term Peshi undoubtedly means muscles; but the word Snayu can not mean the same thing because the two words are not synonymous.

In Pratyaksha Shariram, Acharya Gannath Sen has also explained Snayu as a structure which looking like bunch of Shan, made up of thick fibrous material and used for binding the articulating ends of bones. This concept of Ayurveda resembles with the concept of modern medical sciences upto a great extent. It has been clearly mentioned that injury to the Snayu is very painful, and even such type of pain is not observed in cases of injury to Asthi, Mams, Sira and Sandhi. The sprains which is actually a result of stretching of ligaments or injury to them in any way is very painful than others. According to Taber's medical dictionary the forcible wrenching of a joint with partial rupture or other injury to its attachment without luxation of bones, results in tearing of few fibres or tendons or ligaments, at the joint, it may be wrenched or torn. Amongst the other joints the joint most often found to be sprained, is ankle joint. The common signs of the sprain are rapid swelling, heat and disability often associated with discolorations and limitation of function. The pain is usually severe and is

exclusively increased by the movement.

The Vritta Snayu is considered as Kandara by both Acharya Sushruta and Acharya Vagbhat. The Kandara are total 16 in number; out of which there are four in Adho Sakha, four in Urdhva Shakha, four in Greeva Pradesh and four in Pristha Pradesh. This indicates that Vritt Snayu or Kandara are found to be present in Sakhas. It has also been told that Snayu and Kandara are attached at the site of articulation or Madhyam Roga Marg. Which further prove that Vritta Snayu or Kandara are present in Sakha. According to Dr. Ghanekar the term Kandara mentioned in Ayurvedic classics can be considered as tendons given in modern medicine books, particularly for those which are inserted in nails of extremities. The tendons are fibrous connective tissue serving for the attachment of the muscles to bone and other parts (Taber's medical Dictionary).

The tendons are the integral part of muscles forming components, which are practically of unvarying length. Being largely composed of collagen fibres, tendons are highly resistant to extension but they are relatively flexible and therefore can be angulated around bone surfaces or may be deflected beneath retinacula to change the final direction of pull. Since vascular network are of low density in tendons, so they appear white. They are generally rounded, oval or elongated in cross sectional profile. In general the surface of tendon is smooth. In many situations tendons are being separated completely or partially from their surroundings by synovial membrane.

The blood supply of tendon is provided by relatively a sparse array of small arterioles which run longitudinally from the adjacent muscular tissue to ramified inter fascicular interval. These are accompanied by venae commitantes and lymphatic vessels.

The nerve supply of tendons appears largely to be afferent. Ther muscles. The term Vritta Snayu is self-explanatory; these are told to be present in extremities where the tendons according to modern anatomy, are seen. The tendon is either the beginning part of a muscle (origin) or the ending part of a muscle (insertion). The tendons are supplied exclusively by afferent nerves. The injuries of Snayu or tendon are excessively painful, because of the nature of their nerve supply. At the time of muscular contraction the metabolism of tendon tissue is quite low but it increases with the magnitude of reaction to the infection or injury.

The repairing of tendon takes place exclusively due to proliferation of connective tissue cells associated with collagen fibres which take little part in the process.

Because of nature of their metabolism, the repairing in the Snayu is delayed and remains painful during whole of the repairing process.

Ani Marma could be considered as the best example to demonstrate the Vritt Snayu. Ani Marma are found to be present three Angul above the Janu Sandhi, on its both sides where any injury results in both inflammation and spasm.

The tendon of quadriceps in the form of patellar ligament is inserted on the margin of internal surface of patella. Due to the Tearing of tendon lack of active movement precipitates while the appropriate passive movement remains possible, although it is painful (Bailey and love's short practice of surgery).

Sushira Snayu is present in Amashaya, Pakvashaya and Vasti. Dr. Ghanekar has interpreted this concept of Acharya Sushruta in the context of muscles. He has considered the term Sushira Snayu as sphincters or volvular bands of muscles as their shape and function resemble the Snayu.

Sphincter is generally a band of circular muscle fibres contracting an orifice. Such type of sphincter muscle is found at the pyloric, anal and urinary bladder orifice. The pyloric sphincter is a muscular ring composed of a thickened portion of the circular layers of the muscular coat. Some of the longitudinal fibres may turn to be interlaced with the fibres of the sphincter.

Sushira Snayu are situated and functioning at the exit point of orifice i.e. canal of the pyloric end of the stomach, anal canal and urethral opening of the urinary bladder. At the Urethral and anal opening there are two types of sphincter namely the internal sphincter and the external sphincter. The internal sphincter of the bladder is about 2cm long.

The urethra passes through the urogenital diaphragm and the muscle of urogenital diaphragm constitutes the external sphincter of the bladder. This muscle is voluntary skeletal muscle in nature in contrast to the other muscles of the bladder. Normally this muscle remain tonically contracted which prevent the constant dribbling of urine but it can be reflexely or voluntarily relaxed at the time of micturition. The parasympathetic and sensory nerve fibres are generally

supplied to this region. Similar case is found in anal musculature; where the walls of the anal canal are surrounded by a complex of muscular sphincter divided into internal and external part. At the ano- rectal junction the circular muscle coat of the rectum becomes considerably thickened to form the sphincter ani-internus which surrounds the upper three quarters of the anal canal and ending below at the level of the white line. The sphincter ani-externous is consists of striated muscle fibres surrounds the whole length of the anal canal. Its subcutaneous parts surround the lower parts of the anal canal; it lies beneath the skin at the anal orifice. Centrally the deep part of the external sphincter is a thick annular band which surrounds the upper parts of internal sphincter. The tone of the both internal and external anal sphincters keeps the anal canal and anus closed. During defecation these muscles are relaxed and the lower part of anal canal is opened out and become flattened. The external sphincter can be voluntarily contracted and thus it is more firmly occluded the anus. The inferior rectal branches of the pudendal nerve and the perennial branch are supplied it. With these descriptions about urethral opening at the urinary Snayu as per description of Acharya Sushruta. The word Sushira Snayu indicates its meaning that it has got an opening in its own structure. It also indicates that such structure may surround some other opening which justifies its meaning. The above mentioned openings have got both types of muscular fibres i.e. striated and nonstriated. They perform their functions in association with one and other. Though their rhythmic contraction particularly at the site of urethral opening and anal canal is myogenic in origin but may be governed by the nervous system also.

The Prathul Snayu is found to be present in Parshva, Uras, Pristha and Shir regions. According to Dr. Ghanekar the Prathul snayu are flattened or ribbon shaped tendons or aponeuroses. Acharya Damodar Sharma Gaur has also mentioned Prathul Snayu as flattened or expanded fibrous sheets like lumbodorsal fascia, Galea aponeurotica and other aponeuroses. So these aponeuroses are concerned to flat sheets of densely arranged collagen fibres. They are frequently striated. The large fasicles of collagen fibres are being separated by loose inter fascicular connective tissue. The aponeuroses usually consist of several layers. In the earlier context the term aponeuroses is applied for any tendon and neuron used discriminately for tendons and peripheral nerves. The term is now more widely used for any broad sheet of the connective tissue associated with the attachment of muscle. Sometimes the whole attachment is aponeurotic. The biggest example of aponeuroses is galea aponeurotica or epicranial aponeuroses covering the upper part of the cranium. It forms a continuous fibro muscular sheet with the epicranious, extending from nuchal line to the eye brows.

Thoracolumber fascia can be taken for the example of Prathul Snayu. It is situated in the Pristha Bhaga and covers the deep muscle of the back of the trunk. The thoracolumber fascia in the thoracic region is a thin fibrous lamina that covers the extensor muscle of the vertebral column. It is attached medially to the spines of the thoracic vertebrae and laterally to the angles of ribs. This shows that thoracolumber fascia does the work by connecting the spines of thoracic vertebrae to the angles of the ribs and holds them in position similarly in the lumber region. Another example of aponeuroses is inguinal ligament which connect two bony parts and forms the lower boundary of the abdomen; it is convex downwards, extends towards the thigh and becomes continuous with the tensor fascia lata.

The conjoint tendon is formed by the aponeuroses of the internal oblique and transverses abdominis muscles. It is inserted in the crest of the pecten of the pubic and is directly continuous with the anterior wall of the sheath of the rectus abdominis.

This show that Prathul Snayu which is mentioned by Acharya Sushruta to be present in Parshva, Uras, Prishtha etc. regions are some special form of fascia or aponeuroses either entirely or as a part of the muscle. They do not have their separate identity but they are the essential part of the elongated muscles or fascia raised to be inserted there. They hold the structures where they are attached or come to end.

Some other examples of aponeuroses are fascia of palmar aponeuroses and fascia of the neck. The palmar aponeuroses which are in direct relation with the muscles of the palm consist of central, lateral and medial parts. The apex of the central part is in continuation with distal margin of the flexor retinaculum whereas the base of the central part divides into four slips, extending to each finger. Superficial fibres reach the skin of the palm and fingers and are divided in two slips. Numerous strong transverse fibres bind them together. The central part of the palmar aponeuroses is strongly bound to the skin by dense fibroareolar tissue. The lateral and medial parts of the palmar aponeuroses are thin fibrous coverings of the thenar and hypothenar muscles.

The fascia of the neck, under the name deep fascia surrounds the major structures. It divides the neck into two compartments-

- Anterior compartment.
- Posterior compartment.

The deep fascia of the posterior triangle extends from the intermediate 2/3rd of the clavicle to the superior nuchal line of the occipital bone.

If one goes through the observation of symptoms caused due to injury to the Snayu or penetration of the Shalya in Snayu or infection in Snayu, he finds that injury to the Snayu produces acute pain, inability of the function and disability of the body as a whole.

Similarly the foreign body, impacted in Snayu produces acute inflammation, pain and contraction of the Snayu. In case of infection the vitiated Vayu situated in fingers, ankle, abdomen heart, thorax and pharynx, causes occlusion of Sira and Snayu groups and produces inability of eye movement, inability of the thorax movement, lockjaw, vomiting out cough, and patient finally becomes like a bow. All the symptoms are also observed in cases of tetanus, which is a disease caused by bacteria named as clostridium tetani. The bacilli remain localized at the wound and produce exotoxins with an affinity for motor nerve endings and motor nerve cell. The anterior horn cells are affected after the exotoxins passed into the blood stream, their involvement results in rigidity of muscles of the neck and trunk. The back is usually slightly arched while the convulsions are painful and exhausting.

This shows that the symptoms of 'Aptanak' produced due to the vitiation of Vayu present in Snayu resembles the symptoms observed in tetanus.

In tetanus the symptoms are produced due to the spasm of muscles, supplied by the nerve fibre which is affected by the release of exotoxins from the tetanus bacilli. Similarly it could be said that the symptoms manifested due to the involvement of the Snayu after the vitiation of Vayu are also concerned to the muscles. Therefore Snayu in all these cases can be treated as muscles of the different parts of the body.

It has been mentioned in 25th chapter of Sutrasthan in Sushruta Samhita that any one of the following materials can be used for suturing the cut or incised wounds either after injury or operations. Acharya Sushruta has recommended following material for suturing the raised margins of the Vrana and incised tissue. These are as follows-

Shan fibres, Kshome fibres, Snayu fibres, horse hairs, Murva, Guduchi fibres, fine fibres, and Ashmantak bark fibres. In many Ayurvedic classics it has mentioned that in ancient days Snayu were also used for the purpose of suturing the wounds. In modern medicine there are numerous inventions going on, in the field of surgery for providing advance suturing

material. There are two types of suturing material that are now used.

- Absorbable
- Non Absorbable

The non-absorbable sutures are made by various chemical methods which are fewer irritants while the absorbable sutures have been made in such a way that their absorption could be predicted in much more accurate manner than previous one.

The catgut is a type of absorbable suture. Contrary to its name, this material is obtained from the connective tissue of intestinal mucosa of sheep. Now days, it is used only for the suturing of incised tissue. It is not used for closing the abdominal wounds. Polyglycollic acid sutures are also of absorbable type but they are not preferred due to the difficulty in pulling of sutures smoothly throughout the tissue and also in securing a square (reet) knot.

The braided silk thread is most popularly used for skin closures as a nonabsorbable suture. By the above discussions now it has become obvious that the ancient Acharya Sushruta were quite apt in suggesting and using Snayu as a suturing material for approximation of tissues wounds. The Snayu which Acharya Sushruta used like catgut would have definitely acted like absorbable suturing material. The catgut which is prepared after obtaining the connective tissue of sheep intestinal mucosa, certainly contain muscular fibre in some or the other form, therefore the Snayu which Acharya Sushruta used as a suturing material may also be muscle fibre in some way.

Acharya Sushruta has enumerated that Snayu Marma are twenty seven in number. The table no. 5 (as mentioned in Review of Ayurvedic Literature) shows that Snayu Marmas are mostly Vaikalyakar in nature. It is a characteristic symptoms produced after causing the injury to Snayu. If the injury is caused to the AniMarma, the inflammation, rigidity or inactiveness is produced. The location of Ani Marma, as described by Acharya Sushruta, points out towards the tendons of biceps and quadriceps femoris of upper and lower extremities respectively.

DISCUSSION

In the field of Indian medicine, there are few terms which have been used in different meanings in reference of various parts of the body on the basis of their shape, size and function Snayu is one of them and of worth meaning here. Snayu is also studied in a group of Upadhatu. Snayu is classified into four types i.e. Pratanvati, Vritta, Prathul and Sushira.

Here Snayu, especially Pratanvati Snayu has been selected for the present study. Going through the ancient Sanskrit literatures and Ayurveda classics one finds the description of Snayu is quite confusing and inconspicuous as well.

The number of Snayu is 900 as mentioned in Agni Purana and Ayurvedic classics such as in Sushruta, Charak, Vagbhat and Kashyapa Samhitas. But in Garbhopanishad the total number of Snayu mentioned is only 109. Snayu develops from Meda and Asthi after the process of *Khara Paka*. Acharya Sushruta hasdescribed that injury to the Snayu is very painful even exceeding that of bones, muscles, blood vessels and joint injury; while the Shalya present in Snayu region causes contraction, inflammation, swelling and severe pain.

On the basis of their structure and functions they are considered as ligament by Dr. Govind Ghanekar and Acharya Damodar Sharma Gaur. The total number of Pratanvati Snayu in Shakhas is 600. Out of which 150 Snayu are present in each Shakha. Even in each Shakha they are distributed among the joints in definite numbers.

The modern medicine review of literature refers the structure of Pratanvati Snayu (ligament/tendon) that it is a flexible connective tissue, connecting the articular ends of the bones and supporting Viscera, fasci or muscles. These Snayu are composed of fibrous material, folds of thickened peritoneum and remnants of fetal structure. The Pratanvati Snayu is provided stability and congruity at the articular sites. They hold together the articulating ends of the bones. They provide help in the movement of joints and also in flexibility of different organs.

CONCLUSION

The word Snayu is derived from Dhatu 'Una' in the meaning of impulses carrying cord (Vayu Vahini Nadi).

On the basis of discussion, we draw the conclusion is derived that the term Pratanvati Snayu refers to fibrous tissue that has extreme similarity with ligament/tendon/aponeuroses/fascia. The term Sushira Snayu is very much similar to valvular bands of muscle as their shape; function and histology resemble with the histology of Snayu as described by Acharya Sushruta. Prathul Snayu may be flattened or expanded fibrous sheets like lumbodorsal fascia, and other aponeuroses whereas Vritta Snayu is very much similar to Kandara.

After going through the overview of whole literary review. I have got some knowledge about Snayu which justify the concept of various eminent scholars of Ayurveda including the pioneer surgeon Acharya Sushruta about Snayu and also provide a satisfactory argument to the lacunae of this research. I know well that this research work is not too much about Snayu but not yet also the least. Here, I would like to put my view about Snayu, which I have achieved throughout the research.

As the various scholars of Ayurveda have told that Snayu is basically a *'Shan'* like fibrous structures which not merely signifies the ligament or tendon. I am sure that the term Snayu indicate all those anatomical structure of body whether it is ligament, tendon, aponeroses, retinaculum, fascia, sheath or simply the synovial membrane which have a similarity anyhow with Snayu, structurally, functionally or even pathologically.

According to most of the Ayurvedic Scholars the total number of Snayu is 900 out of which 600 are Pratanvati Snayu that found in Shakha(limbs) of body. The various titles given to the Snayu like Snayupratan, Mahasnayu, Mahanadi, Kandara, Prathulvat are based on its structure, shape and functions. If we consider only the ligaments, tendon or even both together, they do not complete this large numbers. But if we consider all those fibrous structures having any type of similarly with Snayu and found in upper or lower limbs, whether it is ligaments, tendons, aponeuroses, retinaculum, fascia, sheaths, synovial membranes, bursae and also the fine braches of nerve fibre near the joints, it provide not definite but approximate numbers of Pratanvati Snayu as told by Acharya Sushruta and others.

The fibrous tissue present in tendons, ligaments, aponeuroses, articular capsule, the deep fascia of the body and limbs etc. The basic function of these structures is to connect the different tissues and components of the body together to afford mechanical protection against stretch and pressure and in this way to impart great strength as well as maximum amount of flexibility.

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