



CONCEPT OF GREEVASHOOLA (NECK PAIN) IN AYURVEDA

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Abstract: *Greeva* is a Sanskrit term where *greeva* stands for neck. *Greeva* means the back (posterior) part of the neck or tendon of the trapezium muscle. *Ayurvedic* classics in many contexts have collectively taken head & neck as one entity & named it as *Sirogreeva* & placed them as *Urdhvajatrugata* organs (i.e. supraclavicular organs). *Acharya Charak* has also placed it under "*Dash Pranayatana*" Although no specific disease has been mentioned with the name *Greevashool* in our *Ayurvedic* texts but it can come under the *Vata Nanatmaja vikaras* and features of *Vata Prakopa* respectively on the basis of *Lakshana Pradhanta*. In this paper small attempt has been taken to describe *Greevashoola* according to *Ayurvedic* text.

Index Terms - *Greeva*, *Sirogreeva*, *Urdhvajatrugata*, *Dash Pranayatana* and *Greevashoola*.

INTRODUCTION

Although no specific disease has been mentioned with the name *Greevashool* in our *Ayurvedic* texts, but the terms *GreevaStambh* and *Greeva Hundanam* are there in the *Vata Nanatmaja vikaras* and features of *Vata Prakopa* respectively. *Shoola* and *Stambha* have been mentioned as predominant symptoms amongst *Vata Rogas*. As *GreevaStambh* is a *shudha* (pure) *Vataja Roga*, therefore *Shoola* and *Stambha* are its main characteristics. In clinical practice it is clearly observed that patients presenting with *Greeva Shoola lakshana*, to some extent represent with the feature *Greeva Stambha*.

As *Greeva Stambha* (Stiffness) can be considered as *Bhedavastha* (Late stage) of this condition, therefore in the initial phase *Shoola* is manifested as predominant symptom.

So, on the basis of *Lakshana Pradhanta Greevashoola* is present in the following conditions-

1. *Sandhigata Vata*
2. *Manyastambha:*
3. *Greeva Hundanam*
4. *GreevaStambha*
5. *Vishwachi*

Description of the condition

1. SANDHIGATA VATA

Sandhigata Vata is *Madhyama Roga Margagata Vatika* disorders in which vitiated *Vata* gets lodged in *Sandhi*.

Sandhigata Vata is one of the commonest joint disorders broadly described under *Vatavyadhi* which affects musculoskeletal system of the body; particularly the geriatric group. This age group is more vulnerable to *Dhatukshaya* (Degeneration of tissue).

The vitiated *vata* when takes shelter in *sandhithana* causes pain, swelling, stiffness, crepitus is known as *Sandhivata*.^[1] It can affect the hands, hips, shoulders, knees etc. *Sandhis* are one of the types of *Marma* and form a part of *Roga Marga*.^[2]

HISTORICAL REVIEW

ACCORDING TO ACHARYA CHARAKA:

Acharya Charaka has described the disease first separately with the name of “*Sandhigata Anila*” under the chapter of *Vata Vyadhis*. Only three cardinal signs and symptoms of this disease have been described by *Acharya Charaka*^[3] (*Ch. Chi. 28/37*).

ACCORDING TO ACHARYA SUSHURUTA

Acharya Sushruta, gave similar description of the entity of agreed with *Charaka*'s signs and symptoms of it.^[4] The line of its treatment is first explained by *Acharya Sushruta*.^[5] Just like *Snehana*, *Mardana*, *Upanaha*, *Bandhana*, *Agnikarma* etc.

ACCORDING TO ASHTANGA HRIDAYA:

Acharya Vagbhatta also accepted this entity. The symptoms and line of treatment were in accordance with *Acharya Charaka* and *Sushruta* without any amelioration to the subject.^[6]

DEFINITION OF SANDHIGATA VATA

According to *Acharya Charaka*, *Sandhigata Vata* is the *Vatavyadhi* in which *Sandhi shoola* (joints pain), *Atopa* (cripitation), *Vatapurnadrustisparsha*, *Shotha* (swelling) etc. Symptoms are seen.

According to *Acharya Sushruta*, it is with symptoms of *Hantisandhigata* (Degeneration of joints), *Shoola* (pain), *Shopha* (swelling) at the joints.

NIDANAPANCHAKA OF SANDHIGATA VATA

NIDANA

In classical *Ayurvedic* texts no specific *Nidana* has been explained for *Sandhigata Vata*. Therefore, general *Hetu* of *Vatavyadhi* can be considered as etiological factors responsible for causing *Sandhigata Vata*. In its normal state *Vata Dosha* maintains normal structure and function of various joints of body. *Kshaya* (Depletion of body tissues) *rodha* (Obstruction of circulatory channels) *nidana* of *Vata vyadhi*^[7]

Common *Hetus* of *Vatavyadhi*, which are mentioned by *Acharya Charaka* are as below:

Aharaja- *Ruksha* (dry), *Sheeta* (cold), *Alpa* (less quantity), *Laghu* (light), *Abhojana* (no food intake).

Viharaja- *Atiprajagarana* (no sleep), *Divasvapna* (sleeping in day), *Ativyavaya* (excess sexual act), *Vega dharana* (stopping natural urges), *Plavana* (swimming), *Atiadhva* (excess walk), *Ativyayam* (excess exercise).

Manasika- *Atichinta* (excess anxiety), *Atishoka* (excess grief), *Atikrodha* (excess anger), *Atibhaya* (excess fear).

PURVARUPA

Acharya Charaka has quoted that *Avyakta Lakshanas* of *Vata Vyadhi* are to be taken as its *purvarupa*.^[8] Hence, mild or occasional *Sandhishula* prior to manifestation of disease *Sandhivata* may be taken as *Purvarupa*.

ROOPA^[9]

In *Sandhivata* the main cardinal symptoms are mentioned which are common for all joints.

Sandhishula

Sandhishotha with Vata Purna Druti Sparsha

Sandhisphutana
Sandhihanti

UPASHAYA

All drugs, diet and regimen which give long lasting relief in *Sandhivata* may be taken as *Upashaya*. For example *Abhyanga*, *Swedana*, *Ushna Ahara*, *Ushna Ritu* etc. ^[10]

ANUPASHAYA

The diet having *Laghu*, *Ruksha*, *Sheeta Gunas*, *Anasana*, *Alpasana*, *Sheeta Ritu*, evening time can be considered as *Anupashaya* as they increase pain. ^[11]

SAMPRAPTI

No specific *Samprapti* has been explained for *Sandhigatavata*. So it can be said that *Samprapti* of *Sandhigatavata* is same as that of general *Samprapti* of *vata vyadhi*. ^[12]

Acharya Charaka has mentioned that:-

Samprapti of Sandhigatavata

Hetu sevana



Vataprakopa



Increase *Rukshata*, *Parushata*, *Kharata* at *Srotas Rikta Srotas Vayupurana*



Dhatukshayajanya Sandhigata Vata

Pathya

Sarpi, *Tail*, *Vasa*, *Majjasevana*, *Snigdha*, *Guru Ahara*, *Seka*, *Abhyanga*, *Basti*, *Payas*, *Madhura*, *Amla*, *Lavanarasatmaka Ahara sevana*.

Apathya

Katu, *Tikta*, *Laghu*, *Atichinta*, *Ativyayama* etc.

CHIKITSA

Acharya Charaka has given common principles of *Vata Vyadhi Chikitsa*, that is, repeated use of *Snehana* and *Swedana*.^[13]

According to *Acharya Sushruta*, *Snehana*, *Upanaha*, *Agni karma*, *Bandhana* and *Mardana* are the principles for the treatment of *Sandhigata Vata*.^[14]

Acharya Yog Rantnakara mentioned *Chikitsa Sutra* of *Sandhigata Vata* - *Agnikarma*, *Snehana*, *Swedana*

2. Manyastambha:

In *Ayurveda*, *Manyastambha* is defined as " *Manyahakriyahani*". This disorder has also been enumerated under *Nanatmaj Vata Vyadhi* (*Ch. Su.* 20/14) & detailed description is available in almost all *Ayurvedic* texts (*Ch. Chi.* 28/41, *Su. Ni.* 1/67, *A.H. Ni.* 15/22 & *A. S. Ni.* 15/24).

Vyutpatti & Nirukti Etymology

Manyastambha etymologically is a combination of two terms: *Manya* (back or blood vessels of neck or sternomastoid muscle) & *Stambha* (stiffness)

In *Sabdakalpadruma*, it is stated that *Manya* is the seat of *Stambha* & *Dukha* (sorrow/pain).

While *Amarsingh* the commentator of *Bhavprakash* takes the meaning of *Manya* as the Sira of the posterior side of the neck (*B. P. M. Kh.* 24/75).

According to *Aruna Dutta* the commentator of *Astanga Hridaya* the meaning of the word *Manya* is two *Nadis*, laterally to the Neck. *Manya* means, the back or the nape of the neck. While the meaning of the word *Stambha* is *Niscalikarana* (*Dalhana*).^[15] *Stambha* means stiffness, rigidity, make stiff or immovable.^[16]

Thus *Manyastambha* is a disease in which there is pain and restricted movements of the neck is present

Acc. to **Monier Willium** *Manya* means the back or nape of the neck & *Stambha* means stiffness or rigidity or immobility.

Thus, etymologically it can be suggested that *Manyastambha* is a disease of rigidity of back of the neck or impaired movements.

Manyastambha is a painful illness mostly linked to *vata* & *vyana vayu* vitiation. The vitiated *vata* becomes trapped in the neck area, causing muscular soreness there.^[17]

HISTORICAL REVEIW

Sushruta Samhita: - Acharya Sushruta considers *Manyastambha* as individual disease and also as the prodromal symptom of *Apatanaka*, in *Vatavyadhi*^[18] Gayadasa, commentator on *Sushruta Samhita*, discusses the causative factors^[19]

Charaka Samhita - Acharya Charaka in *Trimarmeeya* chapter of *Siddhi Sthana*²⁰ explain *Manyastambha* is because of head injury i.e. *Shiro Abhighatam*.

Ashtanga Hridayam: In *Ashtanga Hridaya Nidana Sthana*, *Vagbhata*²¹ mention *Manyastambha* as a symptom of *Antharayama*.

Other classics: Later texts like *Madhava Nidana*^[22] *Bhavaprakasha*^[23] and *Sharangadhara Samhita*^[24] dealt *Manyastambha* as individual disease by discussing its detailed pathology along with its specific line of treatment. *Chakradutta*^[25], *Vangasena*^[26] and *Bhaishajya Ratnavali*^[27] also discussed *Nidana* and treatment for *Manyastambha* as an individual disease.

NIDANA OF MANYASTAMBH

“दिवास्वप्नासनस्थानविवृताध्वनिरीक्षणैः । मन्यास्तम्भप्रकुरुते सएवश्लेष्मणाऽऽवृत्तः । ” (*Su. Su. Ni. 1/67*)^[28]

Acharya Sushruta has described the etiological factors responsible for the disease: *diwasawapana* (diurnal sleep), leaning/sleeping on an uneven place, constant gazes upward, & *Avarana* of *Vayu* by *Kapha*.

Antarayama as described by *Charaka* & *Vagbhata* (in *Cha. Chi. 28/41*, *A. H. Ni. 15/22*, *A. S. Ni. 15/24*), contains descriptions about *Manyastambha*

Visesha Nidana of Manyastambha

According to *Sushruta*, *Madavava nidana*, *Bhava prakasha*, *Yoga ratnakara*^[29], – *Diwaswapna*, *Aasanasthana Shayana*, *Urdwanireekshana*

PURVAROOPA: Same as *Sandhivata*

Roopa of Manyastambha

S.N	LAKSHANA	SUSHURUTA	MADHAV NIDANA	BHAVPRAKESH	YOGRATNAKAR
1.	<i>Manya Shoola</i>	+	+	+	+
2.	<i>Manyastambha</i>	+	+	+	+

According to Acharya Sushruta, vitiated *Vata* and *Kapha dosha* localized in *Manya Pradesh*, the *Manya Siras* leading to Pain and Stiffness of the neck^[30]

The symptoms of *Manyastambha* are as follows

- *Ruka* (pain)
- *Stabdhata* (stiffness)
- *Daurbalya* (weakness)
- *Bhram* (vertigo)
- *Sirograha* (stiffness of head)

Manyastambha Samprapti

In *manyastambha*, *asthigata vata* is produced by *vyana vayu* and *slesmaka kapha*. *Greeva pradesh* becomes the location of vitiated *vayu*, which result pain and stiffness in *manya pradesh*.

Nidana Sevana

Vata gets vitiated and gets *Kapha Avrita*

Stabdata of *Manya siras* situated in the back of neck

Manyastambha.

Chikitsa Sutra of Manyastambha^[31,32]

The steps and procedures to be adopted in the management of the *Manyastambha* are as follows.

1. Rooksha Sweda
2. Panchamoola Kwatha or Dashamoola Kwatha Sevana
3. Nasya Karma
4. Kukkutanda Swedana

Chikitsa of Manyastambha according to different Acharyas

Chikitsa	Bhava Prakasha	Yoga Ratnakara	Susruta Samhita	Bhaishajya Ratnavali	Chakradutta
Snehana	+	-	+	-	-
Swedana	+	+	-	+	+
Nasyakarma	+	+	+	+	+
Dhoomapana	-	+	-	+	+

Bhava Mishra mentions that the *Abhyanga* with *Taila* or *Ghrta* should be done in *Manyastambha*, *Bhavamishra* and *Yogaratanakara* indicate *Rooksha Sweda* and *Nasya*. Apart from the above mentioned specific management, as the disease is a *Vatavyadhi*, *Vatahara Chikitsa* can be adopted.^[33]

3. GREEVAHUNDANAM (Asthigata Vata)

Griva Hundanam: The word "*Griva Hundanam*" was first mentioned in the 28th chapter of *Chikitsasthana* of *Charaka* where the general symptoms of *Vata Vyadhi* are given (*Ch.Chi.28/21*)

Greeva Hundanam, is a clinical condition occurring in which *Vata* gets localized in the neck region which is one of the disorders caused by vitiated *Vata*.^[34]

Vyutpatti & Nirukti Etymology

Hundanam is derived from the root '*Hudi Sanghate*' or '*Hudi Majjane*' which means to dive, sink, collect, or to be submerged.^[35]

It comprises of two words *Greeva* and *Hundanam*. The word "*Greeva*" means the neck^[36] and *Hundanam* means inward intrusion of the head and its allied parts. The other meaning is *Greeva Stambha* which means stiffness of neck^[37].

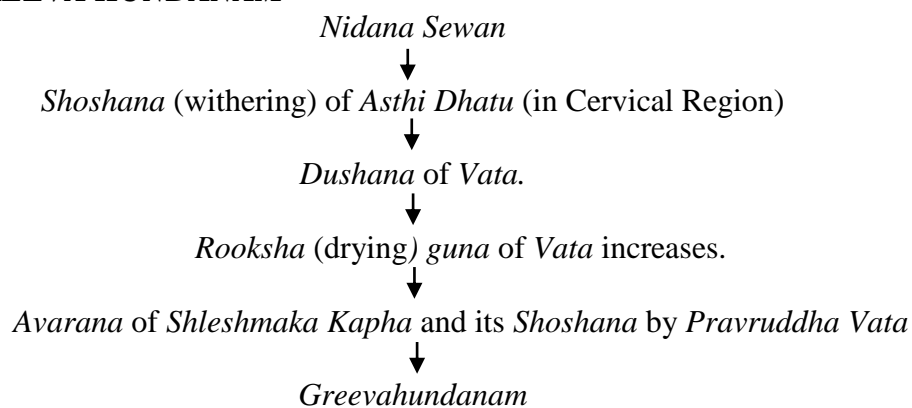
DEFINITION OF GREEVAHUNDANAM

Chakrapani in his commentary have given two definitions for this word-

Siro Prabhutinan Antah Pravesa, meaning inward contracture of head & its allied parts, i.e. curvature deformity which is caused mainly due to pathological conditions of cervical spine.

Another meaning of it is '*Griva Stambha*, which denotes '*Griva Niscalikarana* (*Stambha* meaning as per *Dalhana* is *Niscalikarana*), ie, restriction in movement of neck (*Ck. on Cha. Chi. 28/21*)"

Madhavakara is the only *Acharya* after *Charaka* who has referred to the word '*Greeva Hundanam*,' in the context of general symptoms of *Vatavyadhi* (*M. Ni. Purvardha 22/8*). In its *Vimarsha Greeva Hundanam* is regarded as abnormal curvature of neck or stiffness of neck.

SAMPRAPTI OF GREEVA HUNDANAM

4. GREEVA STAMBHA

Acharaya Charaka describes *Stambha* as one of the clinical manifestation of the *Vata Vyadhi*.^[38] *Greeva Stambha* is a disorder of *Vata* as mentioned in *Vata Nanatamaj Vyadhi*.

In *Ayurveda*, *Greeva Stambha* which is one of the 80 types of *Vata Vyadhi*. *Vyana vayu* is responsible for the movement of body.^[39-40]

Vyutpatti & Nirukti Etymology

The term “*Greeva Stambha*” refers to the pain and stiffness of neck.

Greeva stambh composed up of two words: 1. *Greeva* 2. *Stambha*

The meaning of the word “*Stambha*” is *Nischalikarana*. (Dalhana)

Stambha means stiffness, rigidity, make stiff or immovable (Monier William).

The meaning is “*Greeva Stambha*”, which denotes *Nischalikarana* i.e. the restriction of the movement of the neck. This specifies the impairment or loss of structural and physiological functions of the neck.

NIDANA

Same as aetiological factors responsible for the production of *Vata Vyadhi* as mentioned in ancient *samhitas*.

PURVAROOPA

The *Poorvaroopas* of *Vata-Vyadhis* are *Avyakta*.

ROOPA

Symptoms of *Greeva Stambha* are similar to those of *Greevahundana* where stiffness is stated as the chief factor.^[41] Some of the *Lakshanas* of *Kupito anilah (Vayu)* are similar to the signs and symptoms of *Greevastambha*. These are: *Pani-Prishtha-Shirograha, Gatrassuptata, Greevahundanam* and *Bhedastodarti*

UPASHAYA

Upshaya is the suitable use of drug, diet and behaviour which are contrary to the etiology and diseases like in “*Greeva stambha*” *Snehana, Swedana, and Ushna Ahar vihar* are *Upashaya*. (Ch. Ni. 1/10)

SAMPRAPTI and *CHIKITSA* are same as *Greevahunhanam*.

5. VISHWACHI

Vishvachi is a type of *Nanatmaja Vataja* disorder, which manifests in the neck, shoulder, arms and forearms, up to fingers with sign and symptoms like *Ruk, Stambha, Toda, Karma Kshaya* and *Chestha - Apharana* of *Bahu* as different *Acharyas* described .

TYPES OF VISHWACHI

VATAJA-When only *Vata* is aggravated, *Toda* (pricking pain), *Pravakrata* (deformity), *Sphurana* (tingling sensation), *Stabdhatta* (stiffness) are mainly manifested.

VATA-KAPHAJA-In *Vata-kaphaja* variety, *Tandra* (drowsiness), *Mukhapraseka* (excessive salivation), *Bhaktadvesha* (aversion to food) are expressed.

NIDANA OF VISHWACHI

Different kind of *Aharaja* (dietary), *Viharaja* (behavioural), *Manasika* (psychological), and *Agantuja* (traumatic) factors are responsible to manifests this disease.

Aharaja (dietary)- Excessive use of *Tikta, Katu rasa, Ruksha, Laghu*

Viharaja (behavioural)- *Prajagarana* (night awakening), *Atiplavana* (excessive swimming), *Ativyayama* (excessive physical exercise), *Dukkhasayya asana* (lying over uncomfortable bed and chair)

Agantuja (traumatic)- *Marmaghata* (injury to vital organs), *Abhighata* (trauma), *Prapatana* (falling from height)

PURVAROOPA

Same as *sandhivata*

ROOPA-

Ruk (pain), *Toda* (pricking pain), *Stambha* (stiffness), *Muhuspandana* (twitching of muscle), *Avamotana* (cramping pain), *Bahya karmakshayakara* (restriction of movement), etc., are generally manifested, associated with *Tandra* (drowsiness), *Aruchi* (anorexia), *Gaurava* (heaviness), etc.

SAMPRAPTI

Nidana sewan

aggravates *Vayu dosha*, accompanied by *Kapha*

due to affection of *Vayu* on *Kandara* of *Greeva* (neck), *Skandha* (shoulder), and *Bahu* (arms)

Vishwachi

CHIKITSA

It is *Chirakari* (chronic) in nature. *Dashamoola*, *Bala*, *Masha*, are used both for *Shamana* and *Nasya* medicine. These are effective in *Vata-kapha* ailments, *Sotha*, *Shula*, etc.

CONCLUSION

Greeva is a part of *Dash Pranayata*, which is the most important part of the body where *Prana* resides. *Greeveshoola* is a very common symptom of many diseases such as *Sandhivata*, *Manyastambh*, *Greevastambh*, *Greevahundanam* and *Vishwachi* etc. All these diseases are *vata-nanatmaj vikara* where predominance of *vata* occur. So all the treatment which are useful for *vatavyadhi* are beneficial for the *greevashoola*.

REFERENCES

1. Agnivesha, Charak Samhita, Kashinath Pandey, Gorakhnath Chaturvedi, Vidyotini hindi comm., Chaukhambha Bharati Academy, Varanasi, reprint 2007, Chikitsa Sthana 28/37, page no. 783.
2. Agnivesha, Charak Samhita, Kashinath Pandey, Gorakhnath Chaturvedi, Vidyotini hindi comm., Chaukhambha Bharati Academy, Varanasi, reprint 2007, Sutra Sthana 11/48, Page no. 237.
3. Agnivesha, Charak Samhita, Kashinath Pandey, Gorakhnath Chaturvedi, Vidyotini hindi comm., Chaukhambha Bharati Academy, Varanasi, reprint 2007, Chikitsa Sthana 28/37, Page no. 783.
4. Sushruta, Sushruta Samhita, Ambikadatta Shastri, Ayurvedatva Sandipika Hindi commentary, Chaukhambha Sanskrit Samsthan, Varanasi, reprint 2006, Nidana Sthana 1/28-29, Page no. 230.
5. Sushruta, Sushruta Samhita, Ambikadatta Shastri, Ayurvedatva Sandipika Hindi commentary, Chaukhambha Sanskrit Samsthan, Varanasi, reprint 2006, Chikita Sthana 4/8, Page no. 26.
6. Vagbhatta, Ashtanga Hridaya, Atridev Gupt, Vidyotini hindi comm., Chaukhambha Prakashan, Varanasi, reprint 2012, Nidana Sthana 15/14-15, Page no. 376.
7. (Siddhi nandan Mishra Ayurveda Dipika ayushi hindi commentary first edition 2009 Charaka samhita Chikitsa sthaana 28/59 page no 741; Chaukhambha Orientalia 2009).
8. Agnivesha, Charak Samhita, Kashinath Pandey, Gorakhnath Chaturvedi, Vidyotini hindi comm., Chaukhambha Bharati Academy, Varanasi, reprint 2007, Chikitsa Sthana 28/19, Page no. 780.
9. Agnivesha, Charak Samhita, Kashinath Pandey, Gorakhnath Chaturvedi, Vidyotini hindi comm., Chaukhambha Bharati Academy, Varanasi, reprint 2007, Chikitsa Sthana 28/37, Page no. 783.
10. Agnivesha, Charak Samhita, Kashinath Pandey, Gorakhnath Chaturvedi, Vidyotini hindi comm., Chaukhambha Bharati Academy, Varanasi, reprint 2007, Nidana Sthana 1/10, Page no. 605.
11. Vagbhatta, Ashtanga Hridaya, Atridev Gupt, Vidyotini hindi comm., Chaukhambha Prakashan, Varanasi, reprint 2012, Nidana Sthana 1/7, Page no. 295.
12. Agnivesha, Charak Samhita, Kashinath Pandey, Gorakhnath Chaturvedi, Vidyotini hindi comm., Chaukhambha Bharati Academy, Varanasi, reprint 2007, Chikitsa Sthana 28/18, Page no. 779.
13. Shastri Kashinath., editor. 4th ed. Varanasi: chaukhambha Sanskrit series; 1976. Charaka, Charaka Samhita, Chikitsasthana 28, Vatavyadhi chikitsa/82, Revised by Charaka and Dridha bala with Hindi commentary by R.D. Shashtri; p. 792.
14. Ghanekar Bhaskar Govinda., editor. *Sushruta, Sushruta Samhita, Vatavyadhichikitsa, Chikitsasthana*. 5th ed. 8. Vol. 4. New delhi: Motilal Banarasidas publications; 1997. p. 403.

15. Vaidya Yadavji Trivikramji Acharya edited Sushruta Samhita with Nibandha sangreha Commentry, Nidanasthana, Chapter No-1, Shloka No-29, Page No262, Reprint edition 2014, Pub; Choukamba Surbharati Prakasan, Varanasi.
16. Bhishak Acharya Harishastri, Paradakara Vaidya edited, Ashtangahridaya of Acharya Vagbhata, Suthrasthana chapter 12 sloka 49-50, Page no. 201, and Chaukambha Orientalia Varanasi edition 2005.
17. Sharad K. Milmile ,Sudhir M.Kandekar .Study Of Manyasharira W.S.R To Anatomical Changes In Greevakasheeruka In Manyastambha (Cervical Spondylosis). J Ayurveda Intergr Med Sci 2017;1:74-75 Http://Dx.Doi.Org/10.21760/Jaims .V2i1.7490
18. Acharya P. V. Sharma edited Dalhana Nibanda Sangraha commentary on Susrutha Samhitha Nidanasthana chapter 1st sloka 52nd to 58th. 8th edition. Reprint 2005 Chaukambha Orientalia. Varanasi. Pg no. 265
19. Acharya Priyavat Sharma edited Dalhana Nibanda SangrahaTteeka on Susrutha Samhitha Nidanasthana chapter 1st. sloka 67. 8th edition. Reprint 2005. Chaukambha Orientalia. Varanasi. Pg no. 267.
20. Shri Sathya Narayana Shastri edited Charaka Samhitha Siddisthana 9th chapter, 6th sloka. Reprint 1998. Chaukambha Sanskrit Sansthan, Varanasi. pg no. 1053.
21. Prof. K. R. Srikantha Murthy edited, Ashtanga Hridayam Nidanasthanam chapter 15th, sloka 23rd and 24th. Reprint 2010, Chaukambha Krishnadas Academy. Varanasi. Pg no. 152.
22. Shri. Sudarsana Shastri edited, Madavanidana (part 1) chapter 22nd. Sloka 52. reprint 2004. Chaukambha Sanskrit Sansthan, Varanasi. Pg no. 537.
23. Shri Brahmasankara Mishra edited Bhavaprakasha Madhyamakhandha chapter 24, Sloka75th. 5th edition Reprint 1969, chaukambha Sanskrit Series. Varanasi. Pg no. 235.
24. Pandit Brahmananda Tripadi edited Sharangadhara Samhitha Uttarakhandha Nasyavidhi 18th and 19th sloka. 3rd edition. Reprint 1983. Chaukambha Orientalia. Varanasi. Pg no. 375.
25. Acharya Priyavat Sharma edited Chakradutta Vatavyadi Chikitsa. Reprint 1998. Chaukambha Publishers Varanasi. Pg no. 160.
26. Ramkumar Ray edited, Vangasena Samhitha Vatavyadhi sloka 105 and 106. Reprint 2010. Chaukambha Sanskrit Series. Varanasi. Pg no. 266.
27. Kaviraj Dr. Ambikadatta Shastri edited Bhaishajyaratnavali Vatavyadi prakaranam, Sloka 14th. 7th edition 1983. Chaukambha Orientalia. Varanasi. pg no. 6.
28. Sushruta, Vatavyadhi nidana adhyaya. In: Ayurveda Tattva Sandipika Hindi Commentary, Kaviraja Ambikadutta Shastri, Sushruta Samhita Purvardha Nidana sthana, reprint edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2018. p. 303, 1: 67).
29. Kaviraj Dr. Ambikadutta Shastri edited Susrutha Samhitha Nidanasthana chapter 1. Sloka 67. Reprint 2005. Chaukambha Sanskrit Series. Varanasi. Pg no. 234.
30. Sharda M, et al. Study of Manyashariraw.s.r. To anatomical changes in Greevakasheruka in Manyastambha(Cervical Spondylosis). Journal of Ayurveda and Integrated Medical Sciences. 2017;2(1):74,75.
31. Prof. Srikantha Murthy edited Bhavaprakasha MadyamaKhanda 24th chapter 78th sloka. Reprint2009. Chaukambha Krishnadas Academy. Varanasi. Pg no. 324.
32. Vaidya Jatavji Trikamji Acharya edited Charaka Samhitha Chikitsasthana 28th chapter104 and 105th sloka. Chakrapani Datta Teeka. Chaukambha Surabharathi Prakasha. Varanasi Pg no. 621.
33. Sri Rajeswara Datta Shastri edited Bhishajya Ratnavali Vatavyadi Chikitsaprakaranam. Sloka no. 611 to623. Reprint 2009. Chaukambha Prakashan. Varanasi. Pg no. 486.
34. Acharya JT.Charaka Samhitha by Agnivesa with Ayurveda Deepika teeka of Chakrapanidatta,Chikitsa Sthana 28/21 Reprinted (2011), Published by Chaukhambha Orientalia Varanasi.Vol. IV pp 694-95
35. U.S.Apte Sanskrit indi Dictionary
36. M.Monier Williams,A sanskrit english dictionary published by parimal publication,first new recomposed edition (2008) pp 549.
37. Agnivesa,Charaka Samhitha with Ayurveda Deepika commentary of Chakrapani Datta, edited Vaidya Jadavji Trikamji Acharya, published by Chaukhamba Surabharati Prakashan Varanasi, reprinted (2011), Chikitsasthana 28:22 pp 617.
38. Vd. Harish Chandra Singh Kushwaha, editor. 1st ed. Chaukhambha Sanskrit Sansthan Varanasi, reprinted, Charaka Samhita. Chikitsha Sthana Adhyay- 28th Sholaka- 20th, Hindi Commentary, 2018; 733.

39. Charaka, Vatavyadhichikitsa adhyaya. In: Vidyotini Hindi commentary, Pandit Kashinath Shastri, Dr. Gorakhnath Chaturvedi, Charaka Samhita Uttarardha Chikitsa sthana, reprint edition. Varanasi: Chaukhambha Bharati Academy; 2017. p. 777, 28: 9.
40. Bharti, Katyal S, Kumar A, Makhija R, Devalla RB. Clinical observation on Greeva Stambha Chikitsa. An Int. Quarterly J. Res. In Ayurveda. Med know Publications and Media Pvt. Ltd. April-June 2010; 3(2): 218-222.
41. Sushruta, Vatavyadhi nidana adhyaya. In: Ayurveda Tattva Sandipika Hindi Commentary, Kaviraja Ambikadutta Shastri, Sushruta Samhita Purvardha Nidana sthana, reprint edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2018. p. 297, 1: 17.)

