

International Research Journal of Ayurveda & Yoga

An International Peer Reviewed Journal for Ayurveda & Yoga



Dantharsha- An Ayurvedic Approach

Dr. Sumit Kumar¹ Dr.Uma Thakur²

ICV-70.44- ISRA-1.318
VOLUME 4 ISSUE 2 FEBRUARY2021

- 1- Assistant Professor, Deptt. of Swasthvritta, Babe ke Ayurvedic Medical college and Hospital, Daudhar, Distt Moga, Punjab
- 2- -Assistant Professor, Deptt. of Kayachikitsa, Babe ke Ayurvedic Medical college and Hospital, Daudhar, Distt Moga, Punjab

Corresponding Author :- Dr. Uma Thakur, Assistant Professor, Deptt. of Kayachikitsa, Babe ke Ayurvedic Medical college and Hospital, Daudhar, Distt Moga, Punjab, E-mail Id- amu.4.ut@gmail.com

Article received on 21 Jan 2021

Article Accepted 21th Feb2021

Article published 28th Feb2021

ABSTRACT: -

Dantaharsha is a morbid sensitiveness of teeth, which affects all the people irrespective of age and sex. Person suffering from *Dantaharsha* (Sensitive teeth) cannot tolerate cold wind, they are unable to ingest food of various kinds such as sour, cold and hot, moreover experiences painful sensation in teeth. The approach of treatment in the form of fluorides, nitrates, lasers etc¹ as desensitizers in modern science are not very satisfactory. Considering the above factors, an effective, less expansive, harmless and convenient treatment for *Dantaharsha* (Sensitive teeth) is essential. Various treatments have been explained to relieve *Dantaharsha* (Sensitive teeth) including *Kavala* (gargling), *Gandusha* (Oil Pulling), *Dhuma*, (herbal smoke inhalation) *Nasya* (Nasal medication therapy), *Shirobasti* (medicated/herbal oil with the help of a leather cap over the head), *Yavagu* (semi solid liquid), intake of *Dugdha*(milk) and *Ghrita* (ghee) etc.

Keywords: *Dantaharsha, Kavala, Gandusha, Shirobasti*



This work is licensed under a creative attribution -Non-commercial-No derivatives 4.0 International License commons

How to cite this article: - Dr. Sumit Kumar Dr.Uma Thakur, *Dantaharsha- An Ayurvedic Approach* . IRJAY, February: 2021, Vol-4, Issue-2; 114-120 ;

DOI: <https://doi.org/10.47223/IRJAY.2021.4209>

INTRODUCTION

Dantaharsha (Sensitive teeth) is a *Dantagata Roga* (Dental diseases) explained in *Ayurvedic* texts. *Dantaharsha* (Sensitive teeth) is a *Pullinga Shabda*.² that which produces *Harshata* or tingling sensation in *Danta* (teeth) is known as *Dantaharsha*. *Dantaharsha* (Sensitive teeth) is a *Dantaroga Vishesha*. *Dantharsha* (Sensitive teeth) affects all age groups irrespective of age and sex. Hypersensitivity of teeth has been studied for several years and it is reported as a painful condition that originates when the thickness of the enamel or cement is significantly reduced. Usually, the exposed area is subjected to several kinds of stimuli, resulting in sharp acute pain.³ This painful condition makes eating and oral hygiene very difficult to those having hypersensitive teeth. Fast food culture, unhealthy habits like smoking, teeth grinding, habitual ingestion of acidic food & drinks substances and lack of oral hygiene causes erosion of enamel and dentine leading to dental hypersensitivity. Thus *Dantaharsha* (Sensitive teeth) mentioned in *Ayurvedic* classics can be correlated to hypersensitive tooth as per modern dentistry. Tooth hypersensitivity can fit the criteria of several pain terms described by Merskey (1979), for International Association for the Study of Pain (IASP). Pain is described as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage”. The tooth hypersensitivity, dentinal sensitivity or hypersensitivity often used intermittently to describe clinical condition of an exaggerated response to an exogenous stimulus. The exogenous stimuli may include thermal, tactile or osmotic changes, while extreme stimuli can make all the teeth hurt. The response to stimulus varies from person to person due to difference in pain tolerance, environmental factors and psychology of patient. Several clinical studies have reported that dentine hypersensitivity is a fairly common condition with between 8 to 45% of population being affected. Adults in the age group of 20 to 50 years are the most affected. Several predisposing factors lead to

dentine hypersensitivity, rather than a single identifiable cause. Whenever there is a loss of enamel or cementum leading to exposure of the underlying dentine, dentine hypersensitivity may occur. Enamel may be lost due to wasting diseases like abrasion, erosion tooth grinding, smokeless tobacco, brushing habits periodontal diseases and more importantly periodontal treatment like root planning may result in the removal of cementum covering the root surfaces.

ETIOLOGICAL FACTORS

Separate *Nidana* (causative factor) for *Dantaharsha* (Sensitive teeth) is not available but, in general the causative factors of *Mukha Roga* (Disease of Oral cavity) can be considered as the aetiology for all *Dantarogas* (Dental disease). By over indulgence in food prepared with flesh of animals of aquatic regions, milk, curd, fish etc. the three *Doshas* with the predominance of *Kapha* undergo abnormal increase and produce diseases of the mouth.⁴ Eating meat of fish, buffalo and boar, uncooked *Moolaka* (radish), (greater in indulgence), in soup of *Masha*, *Dadhi*(curds), *Ksheera*(milk), *Shukta*(fermented gruel), juice of sugar cane and *Phanita* (half cooked molasses), sleeping with the face down, not cleaning the teeth daily, avoiding of therapies like *Dhumapana* (medicated smoke inhalation), emesis, mouth gargles, and improper administration of venesection etc. by these causes the *Doshas* with the predominance of *Shleshma* (*Kaphadi Dosh*) get aggravated and produce diseases inside the mouth.⁵ All these are *Kapha Vardhakas* leading to *Mukha Rogas* (Diseases of oral cavity). In the chapter of *Pranashta Shalya Vigyana*, there is a reference regarding vitiated *Annamala*, (waste) which is a *Shalya* (foreign bodies) and if get deposited on *Danta* (teeth) or *Dantamoola* (tooth roots), causes the diseases respectively. *Sushruta* has explained the *Nidana* (causative factor) based on *Rasas*. Excessive consumption of *Madhura Rasa* (sweet essence) causes *Upalepa* (smoothing), whereas excessive

intake of *Amla Rasa* (sour essence) causes *Danta Harsha* (Sensitive teeth) and excessive salivation.

PATHOGENESIS

The way in which *Doshas* vitiate through their own aggravating factors, the way through which *Dhatu*s and *Malas* are vitiated by the *Doshas* by spreading in the body through *Urdhwadi* various directions and lead to disease is known as *Samprapti* (pathogenesis).⁶

Samprapti (pathogenesis) is the process, which takes place in the body in between *Nidana Sevana* (Consumption of Etiological Factors) and the stage of *Rupa* of the particular disease. The knowledge of the *Samprapti* (pathogenesis) is very important, as breaking of this *Samprapti* (pathogenesis) is known as *Chikitsa* (treatment). So, the knowledge of *Samprapti* (pathogenesis) is essential to cure the disease. The pathological events of *Dantaharsha* (Sensitive teeth) begin with the vitiation of *Vata Pradhana Doshas* at their respective sites. In the absence of proper *Chikitsa* (treatment) or *Nidana Parivarjana*, (avoiding the cause) the vitiated *Vata Pradhana Doshas* does *Prasar* (spread) all over the body through *Siras* (veins) and finally localizes at *Urdhwajatru Bhaga* (head and neck) specially *Mukha* (oral cavity) leading to *Dantarogas*.⁷

CLINICAL FEATURES

The *Lakshanas* (Symptoms) of *Dantaharsha* (Sensitive teeth) are explained by almost all *Acharyas*. If teeth do not tolerate cold and heat and any other touch it is known as *Dantaharsha* (Sensitive teeth) caused by vitiated *Vata*.⁸ In *Dantaharsha* (Sensitive teeth) the teeth become incapable of tolerating breeze, eating sour and cold things, feels painful as though shaking. This is produced by eating too much of sour things.⁹ Teeth unable to tolerate cold, touch of dry things, heavy breeze and sour taste- are the symptoms of *Dantaharsha* (Sensitive teeth) caused by *Vata Pitta* together.¹⁰ According to *Harita Samhita Triteeya Sthana 46th* chapter, *Danta Rogas* (Dental disease) are five types namely *Vataja*, *Pittaja*, *Kaphaja*,

Raktaja and *Krimija*. When *Danta* (teeth) or *Dantamoola* (tooth roots) develop blackish discoloration and if there is *Danta Chalata* (shaking of teeth), sensitivity of teeth it is due to *Vata*. Due to *Pitta Dosha*, *Danta Mamsa* (flesh) turns into *Peeta Varna* (yellow discoloration). In *Kaphaja* type there is a *Shotha* (inflammation) and acquire *Shukla Varna* (white color), in *Raktaja* type *Kandu* (itching) and *Raktasrava* (blood discharge) occurs, in *Krimija Danta Roga Dantamoola* can be seen along with *Chidra* (hole), pain and *Danta Mamsa* (teeth flesh) is also get infected.¹¹

AYURVEDIC MANAGEMENT

Chikitsa (treatment) can be defined as the measures, which bring about the homeostasis of imbalanced *Doshas*. Management of *Dantaharsha* (Sensitive teeth) can be broadly classified into local and systemic measures. Great emphasis has been given to *Pratisarana*, *Kavala* and *Gandusha* (oil pulling) in the management of *Mukhagata Rogas* (disease of oral cavity) as both expels the localized *Doshas* from the oral cavity.¹² *Doshas Kapha* and *Rakta* (blood) are involved in diseases of throat, gums and *Oushtha* (lips). So *Raktavisravana Chikitsa* (bloodletting treatment) should be performed. Warm gargles of fats or *Traivrita Ghrta*, or of decoctions of *Vata* alleviating plants control *Dantaharsha* (Sensitive teeth), smoking, snuff, unctuous food, meat-soup, gruel made with meat-soup, milk, supernatant fatty layer of milk, ghee (extracted of milk) and *Shirobasti* (medicated/herbal oil with the help of a leather cap over the head), are beneficial and also whatever is *Vata* alleviating.¹³ In all types of *Danta Rogas* (disease of oral cavity) *Sukhoshna Taila* prepared with *Vatahara Aoushadhis* (medicines) are used for *Kavala Dharana Kavala* (gargling), purpose.¹⁴ In *Dantaharsha* (Sensitive teeth) and *DantaBheda* (tooth ache), either the oil cooked with drugs mitigating *Vata* or marrow cooked with *Ela* (*Elettaria cardamomum*), *Kushta* (*Saussurea lappa*), and bark of *Patala* (*Stereospermum suaveolens*) should be used for holding in the mouth, nasal medication etc.¹⁵ In *Dantashula* (tooth

ache) and *Dantaharsha* (Sensitive teeth), *Vatahara Kavala* (gargling) should use for the treatment.¹⁶

Oral cavity is sticky and moist always because of presence of saliva. *Kapha Dosha* naturally dominates the oral cavity. Hence any diseases of teeth, gums and mouth, it is important to use medicines which are *Kaphahara* in action. Bones are the natural abode of *Vata Dosha*, so in every diseases of the bone, teeth *Vatadosha* is affected. Hence it is important to keep *Vata Dosha* in a balanced state while treating dental disorders.

In *Dantaharsha* (Sensitive teeth) and *Dantabheda* (tooth ache) all *Vatahara Kriyas* are to be performed.

Gandush (Oil pulling) is the process of holding any medicated liquid like *Kwatha* (decoctions), *Swarasa*(juice), *Madhu*(honey), *Ghrita* (ghee), *Taila* (oil), *Gomutra* (cow urine), *Ushnodaka* (hot water) etc. in the mouth to its full capacity without any movement inside.¹⁷ It helps to remove viscid secretion, it helps to perceive taste better, to heal the ulcer and keep the tooth immobilized. *Gandusha* (Oil pulling) leads to anchorage of teeth in bony socket. It increases purity of voice and gives nutrition to gingival, periodontal ligament, oral mucosa.

Nasaya (Nasal medication): is considered as a gateway for drug administration in case of *Urdhwajatrugata Rogas* (disease of head and neck). Hence *Shir Sthita Dantgatarosha* (head situated pain) may be pacified by *Nasaya* (Nasal medication). In *Dantharsha* (Sensitive teeth) *Vata* is the predominant *Dosha* and *Tail* (oil) is best for *Vata* predominant diseases. Drugs like *Triphala*, *Yashtimadhu* (*Glycyrrhiza glabra*), *Uttpala* (*Nymphaea stellata*), etc. are useful in the form of *Ghrita* or *Taila* for *Nasya* (Nasal medication). it may pacify *Vata Prakopa* (aggravation) by nourishing *Shira*(veins), *Sandhi* (joints) and *Snayau* (ligaments) of *Shir* (head) and manage *Dantharsh* (Sensitive teeth) by *Brihana* (nourishment) effect which nourishes and strength *Asthi Datu* (Bony tissue), regenerate the exposed dentine layer by reversing the pathology of *Dantharsha* (Sensitive teeth).

Pratisarana (rubbing): A gentle massage on the teeth, tongue, and buccal cavity by the whole of *Choorn* (powder), *Kalka* (paste), or *Avaleha* (semi-solid form) with the finger for a short time is called the *Pratisarana* (rubbing). Drugs like *Musta* (*Cyperus rotundus*), *Arjunatwak* (Bark of *Terminalia Arjuna*), *Triphala*, *Madhu*(honey) etc. can be used for *Pratisaran* (rubbing).¹⁸

Pralepa (A herbal plaster): it is methods for local application of drugs in the form of *Lepa*. Drugs like *Musta* (*Cyperus rotundus*), *Arjunatwak* (Bark of *Terminalia Arjuna*), *Triphala*, *Madhu*(honey)etc. *Pratisarana* (rubbing). Drugs like *Kasisa* (*Ferrous Suphate*), *Lodhra*, (*Symplocos racemosa*) *Manahsila* (realgar), *Priyangu* (*Callicarpa macrophylla*) etc. can be used in the form of paste.

Dantadhavna meaning cleaning teeth by means of brushing, *Manjana*, *Pratisarana*, etc., each tooth should be brushed individually by *Koorchaka* (Ayurvedic toothbrush), which is a soft tooth brush made from medicated plants. The tooth brush should be rotated over the gums and the teeth in a vertical manner i.e., from below upwards in the lower jaw and from above downwards in the upper jaw. Drugs like *Arka* (*Calotropis gigantea*), *Malati*, (*Jasminum grandiflorum*), *Nyagrodha* (*Ficus bengalensis*), *Asana* (*Pterocarpus marsupium*), *Khadira* (*Acacia Catechu*), *Karvira* (*Nerium indicum*), *Karanja* (*Pongamia pinnata*), *Arjuna*, (*Terminalia Arjuna*), *Katunimba* (*Margosa*), *Apamarga* (*Achyranthes aspera*) etc can be used.

Manjana are substances used with toothbrush or other applicator on tooth surface and gingival for cosmetic and sanitary purposes and for applying specific agents to tooth surface for preventive and therapeutic purposes. One can use tooth powder consisting of equal quantity of Ginger, *Maricha* (*Piper nigrum*), *Pippali* (*Piper longum*), *Twak* (*Cinnamomum cassia*), *Lavanga* (*Syzygium aromaticum*), *Tamalapatra* (*Cassia cinnamon*), *Triphala*, *Khadira* (*Acacia Catechu*) and *Saindhava* (*Rock salt*) which, should be used after mixing it with *Till* oil (Sesame oil).

Danta Roga Pathya (Wholesome diet for disease of teeth)-

Acharya Sushruta has said that one suffering from *Dantaharsha* (Sensitive teeth) take *Snigdha Ghritadi Dhuma*, *Tailadi Nasya* and should take *Mamsarasa* (meat soup), *Yavagu* (semi solid soup), *Ksheera* (milk), milk cream, *Ghrita* regularly. like *Shirobasti* (medicated/herbal oil with the help of a leather cap over the head), *Sarva Vatopkrama* serves good choice¹⁹. *Acharya Yogaratnakar*²⁰ view on this context is quite similar to *Acharya Sushruta*. *Truna Dhanya* (millets) *Yava* (barley) *Mudga* (green gram) *Kulatha* (*Dolichos biflorus*) *Jangala Mamsa* (meat of animals dwelling in arid climate) *Bahupatra* (*Phyllanthus niruri*) *Karavella* (*Momordica charantia*) *Karpura* (Camphor), *Neera* (Coconut-sap) *Ushnodaka* (hot water) *Ela* (*Elettaria cardamomum*), *Kushta* (*Saussurea lappa*), *Tambula* (betel leaves) *Khadira* (*Acacia Catechu*) *Ghrita* (ghee) *Katu*, *Tikta Rasayukta Dravya* (drugs having sweet bitter essence) *Mulethi* (*Glycyrrhiza glabra*) *Gandusha* (oil pulling) *Pratisarana* (rubbing) *Kavala* (gargling) *AsraVisruti* (bloodletting) *Nasya* (Nasal medication) *Dhuma* (medicated smoke) *Yusha* (soup) *Agnikarma* (cauterization), *Shastrakarma* (surgical procedures).

Danta Roga Apathya (Unwholesome diet for disease of teeth)--

Acharya Sushruta and *Yogaratnakar*, while pouring light on *Apathyas* (Unwholesome) of *Dantarogas* (disease of teeth) has said that one suffering from diseases of the teeth should avoid eating sour fruits, dry foods, hard snacks, cold water and should not brush the teeth. Although detailed *Apathyas* (Unwholesome) of *Mukharogas* (disease of oral cavity) are explained by *Acharya Yogaratnakara* *Amla Rasa* (sour essence) *Matsya* (fish) *Anupa Amisha* (meat of marshy animals) *Dadhi* (curd) *Ksheera* (milk) *Guda* (Jaggery) *Masha* (Yellow gram) *Ruksha Anna* (Dry cereal) *Kathina Ashana* (hard sitting position) *Guru Ahara* (Heavy food) *Abhishyandi Ahara* (food stuffs causing obstruction of body channels) *Sheeta Ahara* (cold

food) *Dantakashta* (tooth bite) *Snana* (bath) *Adhomukha Shayana* (sleeping with head inclining down) *Divasvapna* (sleeping during day) *Atikathina Bhakshana* (Eating hard stuff).

DISCUSSION

Dantaharsha (Sensitive teeth), is one of the *Dantagata Rogas* (disease of teeth) which can be compared to dental hypersensitivity and is considered as one of the major problems in Modern dentistry.

It has been stated that dentine hypersensitivity develops mainly by lesion localization which occurs due to loss of protective covering over the dentin and thereby exposing the dentinal tubules to external environment.

Prevalence rate of dentine hypersensitivity disease is more than 45% in Indian population. Modern dentistry has advanced a lot in terms of its numerous specialties and technical precision. Despite this advancement, the dental & related disorders are in a steady rate of increase. The approach of Western dentistry is more mechanical than biological. Considering these drawbacks in modern dentistry *Danta* (teeth) being an integral part of *Mukha* (oral cavity) was mentioned by *Acharyas* under *Mukha Pratyangas* (parts of oral cavity). So do *Danta Rogas* (disease of teeth) were mentioned under *Mukha Rogas* (disease of oral cavity). “The pathological events of *Dantaharsha* (Sensitive teeth), begin with the vitiation of *Vata* at their respective sites. In the absence of proper *Chikitsa* (Treatment) or *Nidanaparivarjana* (Avoiding the causative factor), the vitiated *Vata Pradhana Doshas* does *Prasar* (Spread) all over the body through *Siras* (Veins) and finally localizes at *Urdhwajatru Bhaga* (Upper part of body) specially *Mukha* (Oral cavity) leading to *Dantarogas* (disease of teeth).” The *Samprapti* (Pathogenesis) of *Dantaharsha* (Sensitive teeth) was further justified with help of *Samprapti Gatakas* (Pathogenic factor). *Acharya Madhava* had postulated the role of

Vata and *Pitta Dosha* in the causation of *Dantaharsha*. In *Dantaharsha*, the teeth become incapable of tolerating breeze, eating sour and cold things and feels painful. It is observed that frequent brushing damages the enamel so *Ayurvedic* prevention of damage to dental enamel and other disease condition is to nourish *Asthi* (Bone) and *Majja Dhatu* (Bone marrow) which improves sensitivity of teeth. Due to administration of the formulation in the form of *Nasya* (Nasal medication), *Kapha* situated mainly in *Urdhwjatra* (Upper throat), by *Nasya Karma* (Nasal medication), vitiation of *Kapha* and *Rakta* (Blood) may decrease and thus oral cavity may become clean and symptoms of *Shitada* (Gingivitis) may subside. Hence, it disintegrates the pathology of the disease. *Shitada* (Gingivitis) which is *Kapha Raktaja* in its manifestation therefore, combined therapy with *Nasya* (Nasal medication), *Pratisarana* (Rubbing), *Gandusha* (Oil pulling) can give better results than individual therapies by *Shodhana* (Purification), stimulation and Absorption (Direct absorption in gingival epithelium). All procedures are simple, safe, non-invasive, OPD level modality in the management of *Dantaharsh* (Sensitive teeth)

CONCLUSION

Dantaharsha (Sensitive teeth) is an emerging disease in young and middle age group and residing till the age, it's not treated. *Vataja Ahara*, mixed diet, *Vismashana* (Taking food too early or too late), smoking, alternate use of hot and cold food items are the causes behind *Dantaharsha* (Sensitive teeth). Awareness should be brought about in the society at the early stage of life regarding oral hygiene methods like *Gandusha* (oil pulling), *Dantadhavana*, (cleaning of teeth) *Kavala* (Gargling), *Dhumapana* (Medicated smoke), *Tambula Sevana* (betel leaves chewing), avoiding intake of acidic food and drinks that aggravate acidity in the oral cavity leading for the primary prevention of oral and dental disorders.

Acknowledgement- None

Conflict of interest- None

Financial support- None

REFERENCES

1. Ashton Acton Fluorides: Advances in Research and application: 2021 edition: scholarly paper, PhD, General editor.
2. Raja Radhakantadeva, Shabdakalpadruma, Reprint, Varanasi Vidya Vilas Press Publisher, 3rd edition, Vol 2, 2006, pg no. 681
3. Zappa, U. (1994)- Self Applied Treatments in the management of Dentin Hypersensitivity, Arch Oral Biol,39, Suppl:107S-112S
4. Dr. Brahmanand Tripathi, Madhavkara, Madhava nidana Edition 2007, Chaukhambha Sanskrit Pritishthan, Uttarardha,56/1-2 , pg no. 288
5. Dr. Brahmanand Tripathi, Vagbhatta, Astanga Hridayam, Delhi, reprint 2009 Chaukhambha Sanskrit Pritishthan, , Uttarsthana, 21/12 pg no. 1022
6. Dr. Brahmanand Tripathi Madhavkara, Madhava nidana, Chaukhambha Sanskrit Pritishthan, Edition 2007, Purvarardha, 1/10 pg no. 58
7. Editor Kaviraj Ambika Dutta Shastri Sushruta, Sushruta Samhita, , Varanasi, Chaukhambha Sanskrit sansthan, Edition- reprint 2009, Sutrasthana. 21/33 , pg no. 120
8. Editor Kaviraj Ambika Dutta Shastri Sushruta, Sushruta Samhita, , Varanasi, Chaukhambha Sanskrit sansthan, Edition- reprint 2009, Nidana sthana, 16/32, pg no. 385
9. Dr. Brahmanand Tripathi,Vagbhatta, Astanga Hridayam, Delhi, Chaukhambha Sanskrit Pritishthan, reprint 2009, Uttarsthana, 21/12, pg no. 1024
10. Dr. Brahmanand Tripathi Madhavkara, Madhava nidana, Chaukhambha Sanskrit Pritishthan, Edition 2007, Uttarardha, 56/25 pg no. 301
11. Vaidya Jaymini Pandey Harita, Harita Samhita, Varanasi, 1st edition: 2010,Chaukhambha

- Visvabharati Triteeyasthana, Mukharoga chikitsa, 46/ 5-8 pg no. 455
12. Kaviraj Ambika Dutta Shastri Susrutasamhita of Maharsi Susruta , ayurveda tattva sandipika part I, Chaukhambha Sanskrit Sansthan, Varanasi edition- reprint 2012, Chi.40/70-71 , pg no. 230
 13. Editor Kaviraj Ambika Dutta Shastri, Sushruta, Sushruta Samhita, Varanasi, Chaukhambha Sanskrit sansthan, Edition- reprint 2009, Sharirsthana, 5/21, 22& 32, pg no.58-61
 14. Editor Kaviraj Ambika Dutta Shastri, Sushruta, Sushruta Samhita, Varanasi, Chaukhambha Sanskrit sansthan, Edition- reprint 2009, chikitsasthana, 22/34-35 , pg no. 124
 15. Brahma shankar shastri, Yogaratnakar, Dantaroga Chikitsa Varanasi, Chaukhambha Sanskrit Sansthan, Uttarrdha, reprint 2009, pg no. 301
 16. Kaviraj Atrideva Gupta, Vriddha Vagbhata, Astanga Samgraha Varanasi, Chaukhambha Krishnadas Academy, Edition- reprint 2011, Uttrasthana, 26/11 pg no. 281
 17. Brahma shankar shastri, Yogaratnakar, Mukharoga nidana reprint 2009, Varanasi, Chaukhambha Sanskrit Sansthan, Uttarrdha, reprint 2009 pg no. 287
 18. Editor Kaviraj Ambika Dutta Shastri, Sushruta, Sushruta Samhita, Varanasi, Chaukhambha Sanskrit sansthan, Edition- reprint 2009, Chikitsasthana, 40/62, pg no. 229
 19. Kaviraj Ambika Dutta Shastri part I Susrutasamhita of Maharsi Susruta edited ayurveda tattva sandipika, Chaukhambha Sanskrit Sansthan, Varanasi edition- reprint 2012, Chi.1/8 pp. 5
 20. Kaviraj Ambika Dutta Shastri, Sushruta samhita, Varanasi, Chaukhambha Sanskrit sansthan, edition- reprint 2009, chikitsasthana, 22/35 pp-345
 21. Brahma Shankar Shastri, Yogratanakar, Dantaroga chikitsa, Varanasi, Chaukhambha Sanskrit sansthan, Uttarrdha, reprint 2009, pp301