



AN INSIDE REVIEW OF DANTA SHAREER w.s.r. to KRIMIDANTA (DENTAL CARIES)

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ABSTRACT

Teeth constitutes the most important organ for mechanical digestion in the body. Unless the food is pulverized by the teeth it cannot be chemically digested by the enzymes, hence diseased teeth and gums often lead to indigestion and inadequate utilization of the ingested food leading to malnutrition. Teeth is also a hardest and most stable tissue in the body along with the functions of oral cavity possesses high cosmetic importance. DantaShareera i.e. regarding the anatomy of the teeth there is less explored in the study of Ayurveda, the matters is scattered here and there, and it needs a good compilation to meet the today's science.

Dental caries (*Krimidanta*) is one of the most common of all diseases and still a major cause for loss of teeth. There is practically no geographic area in the world whose inhibition does not exhibit some evidence of dental caries. It affects persons of both genders in all races, all socio-economical strata and every age group. The first nationwide survey by the dental council has shown that dental caries is prevalent among 63% of 15 years old and around 80.2% among adults.

Keywords: *DantaShareera*, Dental caries (*Krimidanta*), Oral cavity

INTRODUCTION

The *Vedic* literatures are considered as the oldest and most authentic treasure of knowledge to the mankind yet available. In Rigveda there is a description - Usha dressed herself in such a way, how a wife is attracted by her husband and showed her *Danta Raji* through smile.¹ Also in this *Veda* word *danta* is used, but there are something compared with teeth.² Ashwini Kumar physician of God have repaired teeth of *Pooshana*.³ Dental caries (*krimidanta*) is one of the most common of all diseases and still a major cause for loss of teeth. There is practically no geographic area in the world whose inhibition does not exhibit some evidence of dental caries. It affects persons of both genders in all races, all socio-economical strata and every age group. The first nationwide survey by the dental council has shown that dental caries is prevalent among 63% of 15 years old and around 80.2% among adults. Keeping in view, the understanding of *Dantashareera* as per *Ayurvedic* texts, the specific target to check the structural changes in *krimidanta*, the present study is undertaken to put an effort for updating concepts on *Danta Shareera* and *Krimidanta*.

Materials and Methods

The *Vedic* literatures are considered as the oldest and most authentic treasure of knowledge. It is quoted in *Atharvaveda*, may the power of speech intact in my mouth, the vital birth in my nostril, the sight of the eyes, the hearing in my ears, that may hair never grow white and teeth, redden, let there be great strength in my arms.⁴ By *Garbopanishad*, it is mentioned that, *Dantamoola* occurs in VIIth month of intrauterine life.⁵ According to *Sukhabodha*, during intrauterine life *guda* (anus) and *danta* (teeth) will develop in VIth month.⁶ In *Ayurveda*, *Danta* is defined as *Charvanasadanaasthani dashan*⁷ – A type of bone helps in mastication, *Sukhannasyacharvanasadanasthibhede*⁸ – A masticatory apparatus is type of bone which helps in mastication of food. In the sixth month of intrauterine life both the *guda* (anus) and *danta* (teeth) will develop.⁹ According to *Charaka* all the *indriya*, *anga* and *pratyanga*, develops in the third month of intrauterine life, except these other factors like teeth, mustache, beard, auxiliary hairs, pubic hairs etc. will de-

velops after birth.¹⁰ Chakrapani commenting on, *nitya* and *anitya* of this sloka, he explains *danta* (teeth) as *anitya*, because they fall before death of a person¹¹. Both the *Charaka* and *Sushruta* consider teeth as hard structure and enumerated in the list of body parts derived from father.^{12,13} *Dashanasturuchaka* – while explaining types of bone, the teeth is considered under type of *asti* called *ruchaka*¹⁴ *Sharangadhara* considered *danta* as *upadatu* of *asti*.¹⁵ By *Bhavaprakash*, *mukh*, *talv*, *two hanu*, *danta* and *danta vesta* are considered as *upangof shira*.¹⁶ Teeth is *gaurava* i.e. partake of *mahabhuta* of *prithvi*.¹⁷ According to *Kashyapa*, here in deed 32 teeth are in human beings, therein 8 erupt once called *sakrujata* and become the teeth mounted in own/original (roots), so rest are *dvija* (erupting twice).¹⁸ While explaining number of bones *Charaka* explains that, including teeth, teeth sockets and nails there are 360 bones in body, among them teeth are 32 and sockets (*dantaulukala*) also 32 in number.¹⁹ In *Bhela samhita*²⁰ and *Ashtanga Sangraha*²¹ also we get same description. *Sushruta* etc. they count only 300 bones, among them the bone lies above the neck are 63 and the teeth are 32 among these 63 types bones.²² *Bhavaprakasha* also given the same explanation.²³ There in middle upper row are two named *Rajadanta* (central incisors), on the both sides are *Vasta* (lateral incisors), lateral to these two are *Damstra* (canine), rest grow in original roots and are called *Hanavya*, similarly these are on lower jaw. Though the name given here is neither given by *Charaka* etc. authors, only *Kashyapa*²⁴ explains about the nomenclature of teeth.

Krimidanta is *vataja*, tooth destructing disease, affecting due to oral unhygienic condition like improper brushing of tooth, improper washing of mouth, biting the hard items, and picking of teeth with needles neglecting the *danta moola rogas* like *dantasharkara*, *kapalika*, *shyavadanta* etc. *Krimidanta* one of *dantagataroga* by all *acharyas* but classification of all achary is not same. According to *Sushruta*, *Bhavamisra* and *Madavakar* – they are 8 types, According to *Vagbhata* and *Sharangadhara* – 10 types, Where there will be *visheshvedana* due to *krimikrutachidra* in the

danta is called as *krimidanta*.²⁵ According to *Ashtang Hridaya*, by over indulgence in foods as fish, meat of buffalo and *boar* (tusked wild pig), uncooked *mulaka* (radish), curds, milk, sour gruel, sugar cane juice and molasses; sleeping with face down, aversion to cleaning of teeth, improper conduct of therapies such as smoke inhalation, emesis, holding liquids in mouth, *shiraveda* etc. The *doshaskapha* being predominant among them, get aggravated and produce diseases in the interior of mouth²⁶. According to *Madavnidhana*, excessive eating of , curd, milk and fish will causes aggravation of all *doshas* with *kaphas* predominance and causes for *mukha roga*.²⁷ *Nidana* (etiological factors) of *krimidanta* is not specially mentioned anywhere in *samhitas*, but we can get *nidana* for all *mukharogas*. All the *dhosas* among which *vata* predominant invading the tooth along with its root dries up the marrow inside and causes the waste product of food to fill up the cavity. Due to putrefaction setting in, minute (invisible) worms develop there, leading to appearance of severe pain and its mitigation both without any reason, profound discomfort, black color, shakiness, swelling, discharge of pus and blood. This disease is spoken as *krimidanta*.²⁸

Due to *Nidana*----- *vatapradhantridoshaprakopa*----
--invading the tooth---- dries up the marrow along its
root----- formation of cavity-----causes the waste
product of food to fill up the cavity-----putrefaction---
---- Development of worms (*Krimi*)

In symptoms of *krimidanta* initially *danta* becomes *krishnavarni*, then there will be cavity formation, becomes *chala* (loose), discharging, swollen and severely painful, pain appearing without any apparent cause. It is caused by *vata*.^{29,30,31} According to *Hareet*, the

raktajadantaroga causes itching, bleeding, swelling in gums and become red that causes hole in root of teeth, it leads to sever pain and cracks occurs in gums that disease is *krimija dantaroga*.³² Severe pain and its mitigation both without any reason, profound discomfort, black color, shakiness, swelling, discharge of pus and blood. These are the symptoms explained by *Vagbhat* – I and II.³³ The teeth which are erupted in sixth month are inverted, dirty, discolored and affected by *krimi*.³⁴

Dental caries is progressive bacterial damage to teeth exposed to the saliva. Caries is one of the most common of all diseases and still a major cause of loss of teeth. The ultimate effect of caries is to break down enamel and dentine and thus open a path for bacteria to reach the pulp. The consequence are inflammation of the pulp and later, of the periapical tissue. Acute pulpitis and apical periodontitis caused in this way are the most common causes of toothache. Infection can spread from the periapical region to the jaw and beyond. The word caries means microbial destruction or necrosis of teeth³⁵ Dental caries has been defined as “a localized post eruptive pathological process of external origin involving softening of the hard tooth tissue and proceeding to the formation of a cavity”.³⁶

Dental caries, which had been described over a hundred years ago, is simple in concept. Bacteria such as the mutans streptococci and lactobacilli are constituents of dental plaque. These bacteria produce acids on metabolizing fermentable carbohydrates. Acids such as lactic acid, propionic acid, formic acid and acetic acid can dissolve the tooth substance. When tooth material dissolves, there is leaching out of calcium and phosphate. This process is called ‘demineralization’.

Bacteria like Mutansetc → produce oraganic acids → dissolve the tooth substance (demineralization) cavitation → if progress, leads to loss of tooth structure.

This occurs below the surface zone of enamel causing subsurface demineralization. Clinically, this appears as a white spot lesion because the loss of tooth mineral changes the refractive index compared with that of normal enamel. When subsurface demineralization

progresses to such an extent that, the surface layer loses all its support and cavitation occur. During the course of this process, ‘remineralization’ occurs. This involves replacement of tooth minerals.

Table 1: We can compare the *Krimidanta* with Dental Caries

S.No	Symptoms of <i>krimidanta</i>	Symptoms of caries
1	<i>Krishna danta</i>	Blackish discolorisation
2	<i>Chidra</i>	Cavitation
3	<i>vedana</i>	Pain
4	<i>Chala</i>	Movable teeth
5	<i>Samsarambha</i>	Swelling in Gums

DISCUSSION

When we go through the definition of *Krimidanta* we can say that *Krimi*, *Chidra* (cavity) and *Vedana* are the cardinal signs and symptoms of *Krimidanta*. *Nidanapanchaka* are the tools used to examine and diagnose the disease. The *nidana* can be classified as *Aharaja* and *Viharajanidanans*. Among the *samanyanidanasksheera*, *masha*, *iksuras* are the *kaphakaranidanans*. *Dadhi* is *kapha* and *pittakra*, *sukta* is *raktapittakara*. *Phanita* and *apakwamoolaka* are *tridosh-kara*, also among these *nidanans* most are explained as *nidanans* for *krimi* also, like *mamsa*, *matsya*, *dadhi*, *ksheera*, *suktha* etc.

Among the *viharajanidanans* most are *vishamadan-tadhavana*, *vishamadhoomapana*, *vishamagandusha*, *vishamavamana* and *siraveda* can be considered as *nidanans* for *krimidanta* as these are mainly *vatakara* and *krimidanta* is *vatapradhanavyadhi*. As *krimidanta* is *vatadoshapradhanavyadhi*, *poorvaroopalakshanas* are *avyakta*. Hence mild or very less symptoms prior to the *roopa* or actual manifestation of *krimidanta* may be taken as *poorvarooopa*. When the *avyakta lakshanas* becomes completely *vyakta* and manifest the disease *krimidanta* they are called as *roopa*.

Initially there will be *krishnavarnata* of *danta* as the *prakupitavata* takes *ashraya* in *danta*. Then there will be formation of cavity as the *vata* does *dantagatamaj-jashosha* leading to *sushirata* of *danta*. Due to *maj-jakshaya* again there will be *vataprakopa*, so severe *dantashula* is experienced. The *annamala* gets collected in that cavity and petrification starts there so the *shotha* and *srava* are seen. Then *krimi* develops there which may starts eating *danta*, *dantagatamajja* and *dantamamsa*. So, *dantabandhana* becomes loose and it becomes *chala*. As *krimidanta* is *vatapradha-*

navyadhi severe pain and pain without any reason may be present.

Nidanasevana leads to *vatapradhanatridoshaprakopa*. *Viharajanidanans* are mainly contributes for *vataprakopa* where as *Aharajanidanans* leads to *kaphapradhanatridoshaprakopa*. These vitiated doshas are waiting for favorable condition to produce disease. When the person indulges into *nidana* pertaining to *danta* like *vishamadantadhawana* and *vishamagandusha*, the vitiated *vatadosha* takes *ashraya* in *danta*. Due to *Ashrayashrayi bhava* of *vata* and *Ashti*, as *danta* is one type of *Asthi* named as *Ruchakasti*. Then due to *rukshaguna* of *vata* there will be *Dantagatamajjashosha*. Along with this if the *nidanans* are continued the *annamala* gets lodged in the cavity. If this lodged food is not removed by proper brushing, then putrefaction starts. This provides favorable condition for *krimiutpatti* in *danta* and the disease *krimidanta* manifests.

CONCLUSION

Dantas are also having its importance in clinical side. *Krimidanta* can be correlated with Dental caries which is major cause for partial or complete loss of tooth structure. On radiological examination structural changes like, radiolucency of enamel, dentin and pulp, discontinuation of lamina dura and widening of periodontal ligamental space are seen in almost all patients suffering from *krimidanta*.

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