


ANALOGISM OF CONCEPT OF DENTITION IN CHILDREN IN AYURVEDA AND CONTEMPORARY SCIENCES: A REVIEW ARTICLE
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ABSTRACT

Teething is known as “dentition difficultis,” in Latin which stands for pathologic dentition or difficult dentition. Epidemiological studies have reported different prevalence of disturbances during primary tooth eruption, ranging from 95 % to 68 %. The timing of eruption of the deciduous incisors (6-12 months) coincides with the diminution of the circulating maternal humoral immunity conferred via the placenta, and the establishment of the child's own humoral immunity. This is the most probable cause that most children of this age are susceptible to a myriad of relatively minor infections. During the process of teeth eruption all *Doshas* and *Dhatus* are affected. *Asthi Majja* and *Rakta Dhatu* are responsible for teeth eruption. The group of symptoms which originate during Teeth Eruption, are known as *Dantodbhedjanya* or *Dantodbhavjanyavyadhi*. In *Ashtanga Sangraha* it is being mentioned that *Dantodbheda* is the commencement of all diseases. These *Dantodbhedjanya Vyadhi* arise on its own with the progression of age and subside on its own.

KEYWORDS: Dentition, *Dantodbheda*, *Dantodbhavjanyavyadhi*.

INTRODUCTION

Teething is known as dentition difficulties in Latin which means pathologic dentition or difficult dentition. Even though teething is a normal part of infant development, surprisingly little is known about the causes and management of teething signs and symptoms. Epidemiological studies have reported different prevalence of disturbances during primary tooth eruption, ranging from 95 % to 68 %. Although teething may cause problems for children, there is controversy regarding the direct relationship between tooth eruption and systemic symptoms. The timing of eruption of the deciduous incisors (6-12 months) coincides with the diminution of the circulating maternal humoral immunity conferred via the placenta, and the establishment of the child's own humoral immunity. This is the most probable cause that most children of this age are susceptible to a myriad of relatively minor infections. Systemic, local signs and symptoms ascribed to primary tooth eruption includes general irritability, sleep disturbances, crying, fussiness, rhinorrhea, facial flushing, fever, diarrhea, loss of appetite, drooling, ear rubbing on the side of the erupting tooth, inflammation of the gingival overlying the tooth, gum irritation and increased biting. In Ayurveda classics symptoms that arise during eruptive process called as diseases and mentioned that *Dantodbheda* is the commencement of all diseases called as *Dantodbhedjanyavyadhi*. All the local and systemic

disturbances that occur are due to vitiation of all three *Doshas* that leads to many *Vikaras*. This condition is very distressful for growing infants and responsible for *Sarvarogaayatan*. In Ayurveda cause of *Dantodbhedjanyavyapad* are because of *Dushti* and derangement in *Dosha*, *Dhatu* and *Malas*. *Vyadhikshamatva* depends upon the maintenance of equilibrium of *Dosha* and the healthiness of *Dhatu* and *Strotas*. As *Dhatus* are the factors, which protects the body and enable to resist the disease and *Bala* depends upon *Dhatus*. So healthiness of *Dhatu* affects *Bala*. Therefore, regression of *vyadhishamta* of infants, which depends upon the equilibrium of *Dosha*, *Dhatu* and *Malas* are the root cause of recurrent morbidities. Recurrence of illness called *Dantodbhedjanyavyadhi* for long time may hinder child's normal growth and development and may also give rise to other manifestations.

AYURVEDIC REVIEW

In *Brihatrayee*, *Laghutrayee* and other Ayurvedic *Samhitas* along with modern literature, there is description given about *Danta*, *Sthayi* and *Asthayi Danta*, *Sankhyas* and also about various diseases and systemic changes which occurs during dentition process which are collectively named as *Dantaodbhed Janya Roga*.

CHARAKA SAMHITA: In *Charak Samhita* Acharya Charak has mentioned, *Dantas* are also one of the form of *Asthi* under the subheading of *Asthi Ganana*.

SUSHRUTA SAMHITA: In *Sushruta Samhita Sharir Sthana* Acharya Sushruta also include *Danta* in *Asthi* form during *Asthi Ganana* and called it one of the *Pitruja Bhava*. Acharya also mentioned *Danta* as a type of *Rucakasthi* while describing the *Asthi* types and given explanation about *Rucakasthi*. *Rucaka* means “piece of *Lavana*”.

ASHTANGA HRIDAYA: In *Ashtanga Hridaya* Acharya Vaghbhatta has explained about *Dantaodbheda*, causes of *Dantodbheda*, complete mechanism of *Doshik involvement* during *Dantodbheda* and its process, complication, symptoms, and *Dantodbheda Vikara Chikitsa*.

SHARANGADHARA SAMHITA: In *Sharangadhara Samhita* description about *Dantaparibhasha*, *sankhya* and their function are given in *Purvakhanda*. *Dantas* are *Shweta* in colour, *Drida* and *Suchikaran*. *Dantas* are 32 in adult and 24 in children. *Danta* are used for chewing.

KASHYAPA SAMHITA: In *Kashyapa Samhita* Acharya Kashyapa has mentioned a brief description about *Dantas* and explained about the *Danta*, *Dantodbheda*, *Dantasankhya*, *Dantodbheda Kala*, *Dantasampata* and *Guna-Avaguna* in separate *Adhyaya* in *Sutrashhana* named as “*Dantajanmikadhyaya*”. In *Dantajanmika Adhyaya* Acharya Kashyapa had taught *Vridhajivaka* related to various *Prashna* about *Danta* and *Dantodbheda*.

In human being teeth are 32 in number. There are eight erupting once and become the teeth mounted in own/original roots, so rest are *Dvija* (erupting twice). In what so ever months the teeth are inseminated; in same number of days they appear. After birth in what so ever month the teeth appear, they fall and reappear in the same year. There, in central upper (row) are two which are named *Rajadanta* (central incisor), they are sacred, so the breakage of these two, one is unfit for paying homage (to the parents), he become unsacred. Then on the sides are *Basta* (lateral incisor), lateral to these, two are *Damstra* (canine), rest grow in original (roots) and are called *Hanyva*, similarly on lower jaw. Causes of early and late eruption of teeth according to gender are also explained. The appearance of teeth in girls is early and causes less trouble due to porousness of teeth and soft nature (of gums). It is noted that in boys this takes much time and causes so many troubles due to compactness of teeth and stable nature (of gums). It is also noted by *Acharyas* that manifestations, eruption, development, falling, reappearance, cessation, stability, decaying, looseness, falling, firmness and weakness (of teeth) depends upon racial specification, (period) insemination, nature, imitation of parents and own deeds.

Dantotpattikala (Timing of dentition)

Dantodpatti (eruption of teeth) is a natural process and its timing is also not fixed for all infants. Acharya Vaghbhatta has mentioned that in *Deerghayusha Bala* dentition always starts from the 8th month onwards, and it is considered as the best, whereas dentition during fourth months not desirable, because child cannot withstand agony of dentition at such tender age.

In *Kashyapa Samahita* Acharya Kashyapa had explained minutely about the specific characteristics of month wise erupting teeth. The teeth inseminated in fourth month are weak, decay early and are affected with so many diseases; in fifth are shaky, with morbid sensitivity and get easily afflicted with various diseases, in sixth are inverted, dirty, discoloured and susceptible for dental carries; in seventh are with two pockets, split, stripped, broken, dry, irregular and protuberant, in eight month these are with best qualities such as completeness, evenness, compactness, whiteness, unctuousness, smoothness, cleanliness, disease free state and slight protuberance of upper one, evenness, redness, unctuousness and compactness of gums with big, compact and stableness of roots are the best qualities of teeth. The teeth, which are more or less in number, white or black (in colour) with undivided (for every tooth) gums, are called inauspicious by sages.

Dantodbhedana

The dentition is one of the important landmark in assessing the normal growth and development of child. *Dantodbhedana* occurs in three stages: formation of tooth buds called as *Nishikta*, formation of teeth called *Murtiman* and actual eruption called *uddbhavan*. *Rakta Dhatu*, *Asthi* (bone) and *Majja* (bone marrow) are responsible for teeth eruption.

Mechanism of Dantotpatti

During the process of teeth eruption all *Doshas* and *Dhatus* are affected. *Asthi Majja* and *Rakta Dhatu* are responsible for teeth eruption. *Asthi* and *Majja* when they get matured or undergo *Paka* enter inside the *Dantashaya*. There will be slight elevation (*Utsedha*) in tooth sockets and gums of both the upper and lower jaws, followed by splitting of gums muscle fibres (*Dantamansa Sanghatanat*), as hard tooth is ready to erupt. This splitting of muscle fibres causes itching with mild pain. *Kapha* that is situated in the gum (*Danta mansa*) is responsible for itching (*Kandu*). During eruption whatever the child gets in hand, will put it in to its mouth to overcome itching so the baby bites the nipples while breast-feeding. *Vata Dosha* (local) is increased and causes enlargement of the gums (*Asthi-Majja*). This vitiated *Vata* then takes different directions, vitiates the *Pitta* and spreads all over by vitiating other *Dhatus* and *Malas* along with complications. Eruption of teeth involves all *Doshas* and vitiation of three *Doshas* gives rise to many complications. All the local and systemic disturbances occur due to vitiation of all three *Doshas* that leads to many *Vikaras* related to *Doshas* and

Dhatus collectively entitled as *Dantodbhedjanya Vyadhi*. This condition is very distressful for growing infants and responsible for *Sarvarogaayatan*.

Table No. 1: Dantodbhedjanyaroga.

Dantodbhedjanyaroga	Asthanga haridya	Asthanga sangraha	Bhava prakash
<i>Jwara</i>	+	+	+
<i>Vidbheda/atisara</i>	+	+	+
<i>Kasa</i>	+	+	+
<i>Chardi/yamathu</i>	+	+	+
<i>Shiroruja</i>	+		+
<i>Shirobhitapa</i>		+	
<i>Abhishyanda</i>	+	+	+
<i>Pothki</i>	+	+	+
<i>Kukkunaka</i>		+	
<i>Visarpa</i>	+	+	+
<i>Trishna</i>		+	
<i>Bhrama</i>		+	
<i>Shwasa</i>		+	

MODERN REVIEW

The relationship between the eruption of the deciduous teeth and the general health of infants has been documented for over 5,000 years. Hippocrates, Homer, Celsus and Aristotle are known to have associated teething with significant morbidity. Hippocrates regarded primary tooth eruption as a cause of severe illness, including fever, diarrhoea and convulsions. Since, a

number of other conditions have been identified as resulting from teething, as diverse as photophobia, blinking eyes, vomiting, neuralgia, weight loss, toxæmia, tonsillitis, paralysis, cholera, meningitis, tetanus, insanity and even penile discharge.

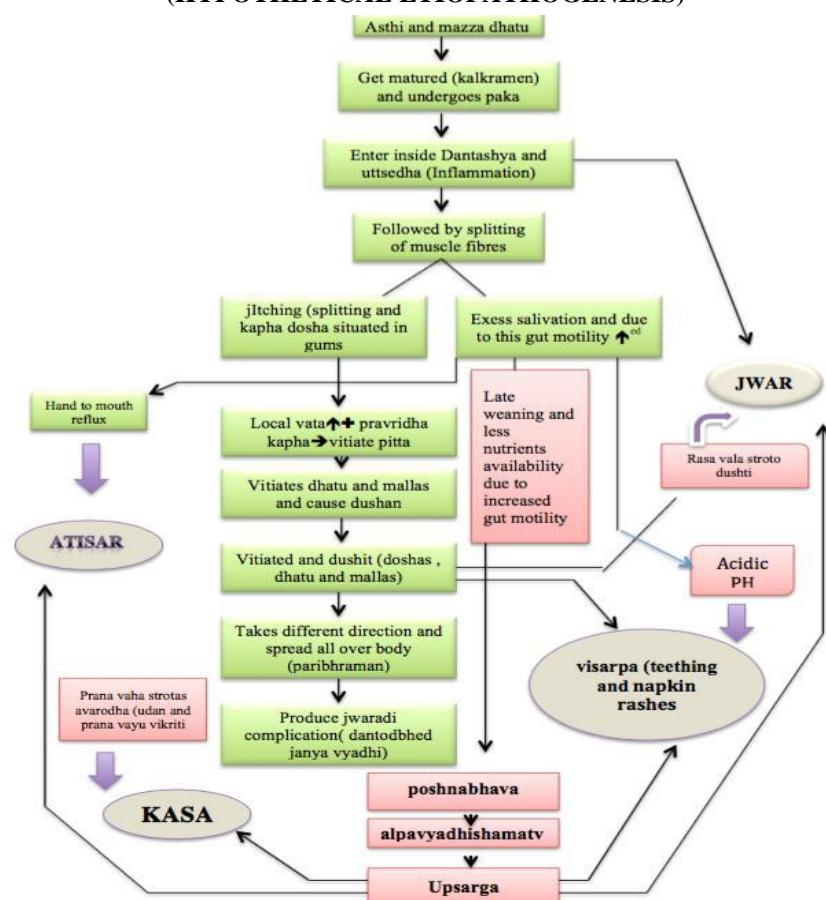
Teething

Teething is a normal physiological process consisting of intraosseous tooth movement in the jaw until the tooth emerges in the oral cavity. Tooth eruption takes place during an 8-day window that includes 4 days before tooth eruption, the day of eruption and the 3 subsequent days.

Timing of eruption

At birth the crowns of the 20 “baby” or primary teeth are almost completely formed, and they are hidden from view in an infant’s jawbones. The primary teeth gradually erupt through the gums during the first 2 and 1/2 years of life. The four front teeth—two upper and two lower—usually erupt first, beginning as early as six months after birth. Most children have a full set of primary teeth by the time they are 3 years old. The child’s jaws continue to grow, making room for the permanent (adult) teeth that will begin to erupt at about age 6 years. Primary teeth begin to shed between ages 6 and 7 years. This process continues until about age 12 years.

SAMPRAPTI OF DANTODBHEDJANYA VYADHI (HYPOTHETICAL ETIOPATHOGENESIS)



Sign and Symptoms during eruption of tooth

The signs and symptoms associated with teething may be local or systemic. Local teething symptoms are; gingival swelling, irritation, redness of the gum, thumb sucking and gum rubbing. The systemic disturbances that are associated with teething include; loss of appetite, crying, increased salivation, drooling, diarrheal, boils, general irritability and fever, running nose, conjunctivitis, and some day-time restlessness. Moreover, increased biting, wakefulness, ear rubbing and facial rashes have also been reported to be associated with teething.

DISCUSSION

Fever may be due to developmental changes in the child such as decreased maternal immunity and increased susceptibility to infection. It is believed that the most likely cause of Diarrhea is the extra saliva swallowed, during teething, which then loosens the stool along with poor personal and environmental hygiene. Factors responsible for systemic disturbances related to respiratory symptoms are multi factorial which includes physiological development of milestones with teething and the timing of eruption of teeth coincides with the diminution of the circulating maternal humeral immunity via breast milk and the establishment of the child's own humeral immunity therefore most children of this age being relatively susceptible to minor infections and systemic upset. Recurrent diarrheal episodes, which further results in skin irritation, caused by long-term dampness and by urine and faeces touching the skin cause Diaper rashes commonly seen in teething infants.

Infants are particularly vulnerable during the transition period when complementary feeding begins. Weaning is to be started gradually at the age of 6 months, early and late weaning along with unhygienic condition can leads to so many complications in growing infants which later affects the growth and nutritional status of child.

The diseases, which originate during Teeth Eruption, are known as *Dantodheda* or *Dantodhavanya* or *Vyadhi*. In *Ashtanga Sangraha* *Vagbhata* acharya has mentioned that *Dantodheda* is the commencement of all diseases. During the process of teeth eruption all *Doshas* and *Dhatu* are affected. *Asti Majja* and *Rakta Dhatu* are responsible for teeth eruption. Various local and systemic complications that occur due to vitiation of *Doshas* and *Dhatus* during eruption which give rise to group of symptoms called as *Dantodheda*-*Vyadhi* arise on its own with progression of age and subside on its own. Therefore no *Swatantra* (specific) *Nidanas* for *Dantodheda* *Vyadhi* has mentioned in classics. Group of *Vyadhi* arise during *Dantodheda* can be considered as *Rupa/Lakshan* of *Dantodheda Janya Vyadhi*.

CONCLUSION

In the present review study we found enormous similarities in the concept of dentition in *Ayurveda* and the contemporary sciences though the deep insight of

ancient sages is commendable when we study about the concept of *Dantodheda* and *Dantodheda* *Vyadhi* in *Ayurveda*. The vision of the *Acharyas* about the specific timing of each and every type of teeth, prediction of the prognosis of the quality of the teeth according to the eruption of the teeth, the religious aspect behind the eruption and falling of teeth on scientific basis and many unexplored facts and theories which are still to be traversed by the parallel sciences is truly unbelievable. So the theories put forward by the *Acharyas* should be further explored practically by the *Ayurveda* Physicians for the betterment of mankind.

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