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Review Article

AN AYURVEDA APPROACH TO CURE DISEASES DURING DENTITION: A REVIEW

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ABSTRACT

Teething is one of the most common source of parental concern in the world of pediatric medicine. Most parents regard the appearance of an infant's first tooth as one of a series of significant developmental landmarks however it is difficult and distressing for both the child and their respective parents because of associated local and systemic illness that affects child normal growth, development as well as nutritional status. Our need of study to find out the simplex formulation, Diet schedule to minimize the dentition related problems in children i.e. minimize the stool frequency and morbidity incidence. In Ayurveda classic Dravyas having Deepana, Pachana, Sangrahan, Guna and Immunomodulation property are helpful to minimize the stool frequency, GIT maturation with colonization, maintain nutritional balance by absorption and prevent child from infections by enhancing immunity. Adjuvant therapy Lalastravahara chikitsa, use of alternative of tethers, weaning modification and hygiene maintenance also effective in eliminating root cause and thus decreases the morbidity incidence of child.

Keywords: Deepan, Immunomodulation, Pachan, Teething, Weaning

INTRODUCTION

Most parents regard the appearance of an infant's first tooth as one of a series of significant developmental landmarks however, the period associated with the eruption of the deciduous teeth in infants can be difficult and distressing for both the child and their respective parents.

Teething is one of the most common source of parental concern in the world of pediatric medicine. All children go through it typically starting about 6 month of age.

The Latin term '*Dentio difficilis*' was coined, literally meaning difficult dentition, however, the terms pathological dentition, as well as 'teething' *per se* have all been in common use at different historical times.

In Ayurveda classic it is called as DANTODBHED and various signs and symptoms associated along with eruption of teeth called as Dantodbhedjanya vyadhi. In modern science also various local and systemic illness or called as signs and symptoms mentioned through which every child suffered during dentition period but they did not give it different entity, while in Ayurveda classics our Acharyas already given a separate entity to these groups of symptoms and called it as a Dantodbhedjanya vyadhi.

SIGNS AND SYMPTOMS

During eruption of teeth child suffered from various local and systemic illness, and these symptoms vary from baby to baby. Local symptoms are gingival swelling, irritation, redness of gums, thumb sucking gum rubbing. The systemic disturbances that are associated with teething include, loss of appetite, crying, increased salivation, drooling, diarrhea, boils, general irritability

and fever, runny nose, conjunctivitis and sometime day time restlessness. Moreover increased biting, wakefulness, ear rubbing and facial rashes have also been reported to be associated with teething.¹

PROBABLE PATHOLOGY OF SYMPTOMS

Irritability – This is caused by pain and discomforts when the teeth erupting through the gums.

Drooling – Teething can stimulate drooling and excessive drooling cause a rash around the mouth, cheeks, chin and neck area due to extra bacteria on the skin and improper hygiene also.

Coughing – The extra saliva can cause occasionally cough or gag. This is usually nothing to worry about, as long as baby does not seem to be in any discomfort, show sign of flu and run a high fever.

Biting And Gnawing– The counter pressure from biting on practically anything can help to relieve the pressure from under the gums.

Diarrhea – Most likely cause of this is extra saliva swallowed, which then loosen the stool.

Low Grade Fever- Low grade fever can be defined as a temperature above 36.5 degree centigrade and fluctuating constantly but not exceeding 38.5 degree centigrade, it can be caused by gingival swelling, painful tooth eruption or sometime with secondary infection when infants putting their hands in mouth.

Cold Like Symptoms – Runny nose, coughing and general cold symptoms are believed to be caused by infection due to

improper hygiene because of baby regularly having his or her hand in their mouth.

Gut Maturation And Immunity

Infant's digestive tract is not fully functional and is vulnerable to infections. Anything that enters in baby's mouth makes its way into her gastrointestinal tract, which is not yet ready to fight off bacteria and other pathogens. In the first six month, infants digestive system will undergo enormous changes as it develop the ability to produce various enzymes, pancreatic secretions require to digest food and antibodies to protect against various infections. Although a newborn can digest carbohydrates and proteins as well as fat, her pancreas is not fully developed, so your baby produces much lower levels of digestive enzymes than an older child. Enzymes in breast milk and your baby's saliva help make up for this shortcoming. In addition, the esophageal valve, which controls the entry of food into your infant's stomach, is underdeveloped. This is why babies frequently spit up. These digestive shortcomings, along with the immature state of the infant kidney, can put your baby at risk for dehydration, electrolyte imbalance and insufficient absorption of nutrients.

Therefore maturation of GIT system plays a very important role in infants for their immunity and their proper growth and nutritional balance also because in the absence of maturation, required amount of nutrients absorption not takes place. The human digestive system has a layer of mucous that protects the gastrointestinal tract from microbes and other contaminants that may be present in food or liquids. In infants, this protective barrier is immature, which puts your baby at risk of infection. Antibodies in breast milk help protect your baby until his digestive mucosal lining matures and he increases his ability to produce his own antibodies, which happens around the age of six months.

Early colonization of the infant gastrointestinal tract is crucial for the overall health of the infant, and establishment and maintenance of non-pathogenic intestinal microbiota may reduce several neonatal inflammatory conditions. Changes in the colonization pattern occur up to two years of age, when the microbiota stabilizes and resembles that of adulthood. The predominant sources of microbes for the initial colonization of the GIT following birth are the maternal microbiota, especially during vaginal delivery, and the infant's diet.²

Teeth Eruption And Immunity

The timing of eruption of the deciduous incisors (6–12 months), coincides with the diminution of the circulating maternal humeral immunity conferred via the placenta, 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.

Effect Of Salivation

During eruption process excessive salivation occurs and baby may drool more than usual much of this spit gets swallowed that affect the consistency of stool and gastric motility also which results in diarrhea.

Diarrhea

Diarrhea associated with teething is one of the major systemic upsets, because if it occurs in excess amount can effects the nutritional imbalance, wash out the gut flora and ultimately affects the normal growth and development

Cause Of Diarrhea

1. Excessive salivation
2. Infection due to tendency of putting any objects in mouth because of development of hand to mouth coordination milestone at the same age.
3. Shifting from liquid to solid diet i.e. weaning

AREA OF MANAGEMENT

1. Intervention of drugs that promotes GIT maturation and function properly indirectly enhances the immunity of child, because in infants 60-70% immunity provided by GIT alone.
2. Immunomodulation
3. Intervention of drugs and diet modification (modification in weaning) in order to meet the nutritional imbalance because of diarrhea.
4. Management of local symptoms.

AYURVEDA APPROACH

Ayurveda drugs which acts on GIT systems and having a following property Deepana Pachana, Sangrahaniya, Laghu and Balya can be used orally along with breast milk or Madhu that helps in maintaining the GIT functions by its Deepana, Pachana property, maintain the nutritional balance and gastric motility also due to its Sangrahaniya Gunaas mentioned in Samhita.

Ativisha(*A. heterophyllum*)

Ativisha also called as Shishu Bhaisajya as useful medicinal herb for pediatric care and of all the herbs having digestive, carminative, absorbent and tridosha balancing properties, Ativisha is the best. During Dantodbhed all the three-doshaprakop takes place in sishu as mentioned by our Acharyas in Samhita therefore it is helpful during dantodbhed.

Ativisha (*A. heterophyllum*) has Tikta (bitter) and Katu (pungent) taste, laghu (light) and Ruksha (dry) properties, Ushna Veerya (hot potency) and Katu Vipaka. In terms of action, it is Kapha-pittahara (reduces kapha and pittadoshas), Deepana (increases digestive fire), Pachana (digests undigested material), Grahi (prevents water loss from the body), Shotahara (anti-inflammatory), Vishaghna (anti-poisonous), Krimihara (anthelmintic), Arshoghna (anti-hemorrhoid), Jwarahara (anti-pyretic), Kasahara (anti-tussive) and Atisaraghna (anti-diarrhoeal)^{3,4,5}

It was found that the ethanol extract of *A. heterophyllum* appeared to enhance the phagocytic function and to inhibit the humeral component of the immune system and studies show that, *A. heterophyllum* has immunomodulatory activity, which could possibly lead to new immunomodulating agents of herbal origin.⁶

Musta (*Cyperus rotandus*)

It has Katu (pungent), Tikta (bitter) and Kashaya (astringent) taste, Laghu (light) and Ruksha (dry) properties, Sheeta (cold) potency and Katu (pungent) taste after digestion. It is Kapha-pittahara, Deepana, Pachana (digests undigested material), Grahi (water absorbing), Jwarahara (antipyretic), Atisaraghna (antidiarrheal) and Kanduhara (anti-itching).^{3,4,5} In Charaka sutrasthana also of all the herbs having Deepan (digestive), Pachana (carminative), Sangrahi (absorbent) property, Musta is the best.⁷

An aqueous extract of rhizomes of *C. rotandus* (ACR) was tested for its anti-diarrheal and anti-spasmodic activity, their

results indicates that ACR produces its anti- diarrheal effect through decreasing intestinal secretions and antispasmodic effect by inhibiting the intestinal motility. The methanol extract was found to significantly suppress the frequency of diarrheal episodes as well prolong the latent period of episodes when compared with standard drug loperamide.³

Musta by its Atisarghna and Grahi property helpful in controlling the major manifestation associated during teething and by decreasing intestinal motility and help in absorption and retentions of nutrients required for further growth and development and thus maintain nutritional balance also. During teething infants shifts from liquid to solid diet and this was one of the cause for diarrhea, Musta by its Deepan and Pachana Guna helpful in digestion of solid food properly and your child gets relives up to some extent.

Guduchi (*T. cordifolia*)

Ayurvedic properties of *T. cordifolia* include Samngrahi, Arshahara, Aruchinashaka, Deepana, Agnidipan, Chardihara, Trishnahara, and Hikkahara. Charaka also explained Guduchi one of best drug in Deepan, Sangrahi⁷ along with its Rasayana, Balaya, Vayasthapan property. Guduchi also have Jwarahar (anti-pyretic) property and best immunomodulator.

In Bheshajya ratnawali in balarogadhikara chapter along with Musta, Pipaali etc it is one of the ingredient of Pippalyadi Ghrita yoga which specially indicated for easy teeth eruption. Thus by its Deepana and Sangrahi property as mentioned by Charaka helpful in maintaining GIT maturation and its functions normally, and by enhancing the immunity of child, it prevents from infections associated with teething. Guduchi also known for its Jwarahara property therefore also prevents your child from fever due to infections, which is one of the systemic symptoms during teething.

Bilwa (*Agele marmelos*)

Bilwa is known for its anti-diarrheal effect and also have Deepan and Sangrahi property mentioned in Charaka Samhita⁷, and also have anti-inflammatory property thus helpful in controlling frequency of stool episodes.

Along with this Shunthi, Pippali, Jirak and other dravya have Deepana, Pachana and Sangrahi property, which is the main need for maintaining the GIT functions and maturation properly and indirectly maintaining the immunity and nutritional balance also helpful during teething.

Treatment Of Excess Salivation

Excess salivation is the one of the main causative factor for increasing diarrheal episodes in teething infant because much of this spit gets swallowed that affect the consistency of stool and gastric motility which results into diarrheal.

Anantamula, Lodratwaka, Krishna Tilla

Kwatha of Anantamula, lodratwaka and *Krishna* till a mentioned in bheshajya ratnawali in balarogadhikar aadhyaya indicated for lalastavaharaupaya or in powdered form with madhu is helpful in controlling excess salivation.⁸ Lodratwaka is Sheeta in Virya, Laghu and Grahi and used to treat Atisara, therefore also useful in decreasing salivation and stool frequency.⁹ *Krishna* till a beneficial for teeth therefore helpful for better dentition also.¹⁰

Use Of Tethers

A wide range of teething rings are commercially available for infants to “gwan” so that temporary pain relief is provided by the pressure produced by chewing maximal when chilled first. Solid silicon based or liquid filled tethers commonly used and if parents not checked carefully, if they get damaged and leak, harmful substances may enter in mouth also.

Alternative to that, teething articles made up of Ayurveda drug called Laksha (shudha) is helpful because Laksha has Kashayarasa, Tikta, Sheeta Virya, Katu Vipaka, and Laghu, Snigdha in Guna. It pacifies pitta and has Vranashamak Dahaprashaman, Shothahar and Krimihara property¹¹ therefore due to its Sheeta and Snigdha Guna gives local relief and does not require chilled first due to its Sheeta guna. Vranashamak and Dahashamak and Shothahar property gives relief from gingival swelling and irritation during eruption, KashayaRasa helpful in controlling excess salivation and Tikta rasa and Krimihar property give relief to parents from frequent sterilization. It is also have effects on Rasa, Rakta and AsthiDhatu and Danta is Updhatu of Asthi so beneficial in teeth eruption also.

Diet Modification

WHO defines complementary food as any food whether manufactured or locally prepared, suitable as a complement to breast milk or to infant formula, when either become insufficient to satisfy the nutritional requirement of the infants. Such food also called as weaning food or breast milk supplement.¹²

Advice to start weaning at 6th month of age, with food which is Laghu (easily digestible) and hitakara (beneficial) diet.¹³ and also fulfill the nutritional requirement.

Shashtikshali as Sheeta (cooling), Snigdha (unctuous), Laghu (easy to digest), Sthiratmak (gives stability to body). Godhuma as brihmana (strengthens body tissues), Sheeta (cooling), swadu (sweet in taste), Jeevana (nourishes body tissues). Yava as Sheeta (cooling), Balya (strengthens body tissues), Slesma vikarnut (pacifies diseases of kapha).¹⁴ Vidanga as Vahnihar (generates digestive fire), Krimihar (acts on intestinal worms).¹⁵ These all are given in the form of various Aharakalpana mention in classical text such as Peya, Vilepi, Mannda which also have Deepan Pachana and Grahi property¹⁶ which is the main requirement for maintaining GIT functions normal.

Therefore introduction of weaning food /complementary foods with qualities like high in energy, easy to digest, semi-solid consistency, low in bulk, fresh and clean inexpensive and easy to prepare will bridge the gap.¹⁷

OTHER MANAGEMENT

Hygiene maintenance is one of the associated management in keeping your child from all systemic illness, because fever, rashes, diarrheal, and recurrent infections these all are associated with microbial infections through tropical and oral route.

CONCLUSION

Teething is one of the most common source of parental concern in the world of pediatric medicine and every child go through it typically starting about 6 month of age. Immature GIT, diminution of the circulating maternal humeral immunity conferred via the placenta, and the establishment of the child's own humeral immunity, shifting of infants from liquid diet to solid diet, immature colonization, excess salivation with improper hygiene, are main route cause of all local and systemic illness during eruption. Dravyas which acts mainly on GIT

system, helps in Deepan, Pachan and by decreasing the motility of gut, helps in retention of nutrients require for proper growth and development by its GrahiGuna with immunomodulation property are main line of treatment which are given in medicinal form with breast milk or Madhu to teething infants. Ativisha, Musta, both have Deepan, Pachana, and SangrahiGuna as mentioned in Charaka Samhita and which are the main ingredients of most of the medicinal yoga in balaroga in classical text, Bilwa with its grahi and anti-inflammatory property and Guduchi with Deepana, Grahi, *Jwarahara*, Balaya, immunomodulation property, these all are effective when given to child during eruption with breast milk or Madhu. Lalastravaharchikitsa, weaning modification and hygiene maintenance along with medicinal dravyas also helpful in troublesome situation as a adjuvant management during dentition period because excess salivation and recurrent infection through oral and tropical route are also responsible for various local and systemic illness.

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