

Treatment Considerations for Care of Natal and Neonatal Teeth – A Review of Literature

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Abstract

Oral cavity of newborn infants having teeth at the time of birth, is called “natal teeth” and which erupts within the 1st month of postnatal life, is called as “neonatal teeth.” For pedodontist and pediatrician, these teeth are of significant importance. Natal and neonatal teeth may be conical or may be of normal size and shape, commonly present in mandibular incisor region. One of the major complications of natal or neonatal teeth is ulceration on the ventral surface of tongue, called Riga-Fede disease. The objective of this article is to present a review of the literature on various management aspects of natal and neonatal teeth, with some important aspects.

Keywords: Natal teeth, Neonatal teeth, Riga-Fede disease.

INTRODUCTION

Natal teeth and neonatal teeth are teeth which are present at birth and within 30 days of birth, respectively.^[1] Eruption of primary teeth begins at the 6th month of age, with eruption of mandibular incisors. Eruption of teeth at 6 months of age is functional and psychological milestone for child's life and an emotional, in regard to parents. The rare occurrence results in the interest, curiosity, and concern of oral health professionals and also the parents. In the past, some people relate it with superstition, being good or bad omens.^[2] Natal teeth are relatively 3 times more common than neonatal teeth, commonly present in mandibular incisor region. No difference in prevalence with respect to gender, however, 66% predilection was cited for females by some authors. Prevalence of natal teeth reported with different ranges from 1:716 to 1:3500 live births, investigated by several studies.^[3]

TERMINOLOGY

Dentitia praecox, fetal teeth, dens connatalis, congenital teeth, infancy teeth, pre-deciduous teeth, and precocious dentition are few of the terminologies used previously. The terms “natal” and “neonatal” teeth described by Massler and Savara (1950) are now the most accepted one.^[1] These terms broadly define time of eruption but do not give any clue whether the tooth belongs to primary dentition or whether it is supernumerary.

ETIOLOGY

Exact etiology is unknown for the premature eruption or appearance of natal and neonatal teeth. Previously, neonatal teeth were considered merely cysts of dental lamina of the infant. It was also suggested because of hereditary inheritance as dominant autosomal trait. Endocrine disturbances can also be the one of the key factors.^[4] Congenital syphilis and febrile episodes during pregnancy are some of the contributing predisposing factors.^[5]

CLINICAL CHARACTERISTICS

Natal and neonatal teeth may be conical or may be of normal size and shape. They can be opaque yellow-brownish in color. Bigeard *et al.* (1966) reported smaller dimensions of the crown of these teeth as compared to primary teeth under normal conditions. Spouse and Feasby (1966) classified it into mature and immature teeth. Hebling (1997) classified natal teeth into four clinical categories:^[4]

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1. Shell-shaped crown poorly fixed to the alveolus by gingival soft tissue and no root
2. Solid crown poorly attached to the alveolus by gingival tissue and little or no root
3. Eruption of the incisal margin of the crown of teeth through gingival tissue
4. Edema of gingival soft tissue with an unerupted but palpable tooth.

HISTOLOGICAL CHARACTERISTICS

Histologically, most of the crowns of the natal and neonatal teeth are covered with hypoplastic enamel with varying severity, irregular dentin formation, and deficient cementum formation. Natal tooth sections under microscopic examination have shown normal dentin with certain irregular spaces close to the amelodentinal union region. Normal pulp tissue has been reported except for the presence of inflammatory areas in some regions, and also the absence of Weil's basal layer and cell-rich zone.^[5] Microscopically irregular interglobular areas with structures resembling osteodentin have been observed.

In a clinical and histological study, it has been proposed that the variation detected in amelogenesis was due to premature exposure of the tooth to the oral environment, which results in alteration of normally columnar enamel to a stratified squamous configuration. Under electron microscopy, author clearly visualized this squamous aspect of enamel of natal tooth.^[4] Enamel thickness of natal teeth and neonatal teeth is 300 mm and 135 mm, respectively. Enamel layer of normal primary teeth is between 1000 and 1200 mm.^[3]

DIAGNOSIS

Correct diagnosis requires a detailed case history with thorough clinical and radiographic examination of the infant. Radiographic examination is important for treatment plan, as to rule out whether they are components of normal dentition or supernumerary.^[5] Generally, natal and neonatal teeth are located in the lower incisor region, and 95% of cases corresponds to teeth of normal dentition and 5% are supernumerary. Bodenhoff and Gorlin (1963) reported about 85% of the teeth are mandibular incisors, 11% are maxillary incisors, 3% are mandibular canines and molars, and only 1% are maxillary canines and molars.^[4] Basavanhappa *et al.* (2011) reported 15 cases in which all natal and neonatal teeth were supernumerary, as demonstrated in radiographic examinations.^[6] Differential diagnosis of natal teeth includes cysts of natal teeth, Bohn's nodules, and Epulis.^[7]

TREATMENT CONSIDERATIONS

Risks for the child due to presence of natal teeth include (1) ulceration on the ventral surface of tongue due to sharp incisal edges, (2) risk of swallowing or aspiration if the tooth is excessively mobile, (3) possibility of traumatic injury, (4) their presence may cause soreness in the newborn, and (5) they might interfere with breastfeeding with resultant feeding

refusal and growth retardation. Mothers can feel inconvenience during suckling due to the presence of natal teeth.^[8]

Presence of natal and neonatal teeth may be a source of uncertainty about the treatment plan.

Few factors such as implantation and degree of mobility, inconveniences during suckling, interference with breastfeeding, and possibility of traumatic injury should be considered. In general, no intervention or treatment required if these natal and neonatal teeth remain asymptomatic and/or if there is no interference in breastfeeding.

Martin *et al.* (1998) suggested smoothening of the incisal margin to prevent wounding of the maternal breast during breastfeeding. Some authors also reported no relation between natal teeth and wounding of mother's nipple, as the tongue is interposed between these natal teeth and the nipple during breastfeeding. Hence, trauma would occur to the baby's tongue. Caldarelli (1857) first described this condition in association with general organ failure in a child, followed by death.

Goho (1996) reported his treatment of a natal tooth by composite resin, covering the incisal portion of the tooth.^[9] Extraction of natal and neonatal teeth should not pose any difficulties since these teeth can be removed with a forceps or even with fingers. Moura *et al.* (2013) suggested that infants would be treated in the knee-to-knee position under indirect fluorescent ceiling light.^[10]

One of the major complication of natal or neonatal teeth is ulceration on the ventral surface of tongue, called Riga-Fede disease (Riga first described the lesion and Fede published histological studies of the lesion).^[11] Elzay (1983) framed the expression "traumatic ulcerative granuloma with stromal eosinophilia" implying to a chronic but self-limiting reactive ulcer of the oral mucosa.^[12] Hegde (2005) published a Riga-Fede case, where he has chosen extraction of the teeth as treatment of choice over more conservative treatment which slower healing. Extraction was done under topical local anesthesia, which patient tolerated well. Follow-up done after 10 days and the lesion was fully resolved.^[13]

Extraction can be treatment of choice if tooth is supernumerary or excessively mobile, which can be associated with risk of aspiration. Once extraction is performed, it is essential to remove the underlying dental papilla and Hertwig's epithelial root sheath during the extraction of natal tooth/teeth to prevent the development of root structure that could continue if these structures are left *in situ*.^[3]

According to Rusmah (1991), tooth extraction in the newborns is contraindicated because of the risk of hemorrhage. However, administration of Vitamin K before the procedure permits safe extraction.^[14] Berendsen and Wakkerman (1998) also reported the risk of hemorrhage in extractions performed before 10 days of life when Vitamin K was not administered. This waiting period before performing tooth extraction is due to the need to wait for the commensal flora of the intestine to become

established and to produce Vitamin K, which is essential for the production of prothrombin in the liver. Thus, it is safer to wait until a child is 10 days old before extracting the tooth. If it is not possible to wait, then it is advisable to evaluate the need for administration of Vitamin K with a pediatrician, if the newborn was not medicated with Vitamin K immediately after birth. Vitamin K (0.5–1.0 mg) is administered intramuscularly to the baby as part of immediate medical care to prevent hemorrhagic disease of the newborn.^[4] Prophylactic administration of Vitamin K is advocated because of the risk of hemorrhage, since blood coagulation may not be established until the child is 10 days old.^[15]

Leung (1986) voiced about the concerns such as premature loss of a primary tooth as a function of the possible space loss for the permanent tooth. As these teeth erupt prematurely with incomplete mineralization, other concerns include need of prevention of dental caries by controlling bacterial plaque and through fluoride application.^[4]

CONCLUSION

The role of pediatric dentist is very important in management of natal and neonatal teeth, since they might pose a variety of complications as mentioned above and management, whether to retain or extract the tooth should be weighed against the risks and benefits with these natal teeth. Periodic review of the infant has to be done regularly and every effort has to be made to educate the parents about natal teeth and its consequences. It is the responsibility of pedodontist to have an interdisciplinary approach with the pediatrician whenever infants with natal or neonatal teeth are detected. Pediatricians are usually the first

to encounter these teeth and early consultation with the dental professionals can prevent complications.

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