CASE REPORT

Neonatal teeth - A case report with review of literature

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Abstract

First emergence of the deciduous teeth in the oral cavity occurs at 6 months of age. Eruption of teeth at or immediately after birth is relatively rare phenomenon. Natal teeth and neonatal teeth are the teeth that are found in the oral cavity of an infant either at birth or shortly after birth within a month. The present paper reports a case of neonatal tooth and also summarizes the various characteristics associated with these conditions. It is important to know the complications and their management to avoid the discomfort for the infant.

Key words: Complications, natal teeth, neonatal teeth, precocious dentition, predeciduous teeth.

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Introduction

According to a Persian saying, “children are the bridge to heaven.” Every milestone that takes place in a child’s life is an important event in the life of a parent and one such major milestone in child’s life is that of tooth eruption. Tooth eruption is an emotional event for the parents as it brings about major changes in a child’s life in terms of functional and psychological aspects and it usually begins at about 6 months of age. However, any change in this milestone brings about anxiety among the parents. Natal or neonatal teeth sometimes compromise the child’s ability to suck the milk while feeding. These teeth because of their rarity are associated with superstition and folklore, being related to good and bad omen. These teeth may be of interest to the parents and doctors since they are associated with some complications.

Case Report

A 10-day-old female infant reported to the dental clinic with an erupted tooth in the anterior mandibular region [Figure 1]. She was referred by her pediatrician for evaluation of the same. Parents of the infant complained of mobile tooth in the lower front tooth region and difficulty in feeding the infant as there was injury to the breast during feeding the infant. History revealed that the tooth was not present at the time of her delivery. History revealed that the baby had a birth weight of 2.45 kg and was healthy, and Vitamin K supplement was already given to the patient by a pediatrician.

Intraoral examination of the oral cavity revealed that the teeth present corresponded to tooth 71 but tilted toward midline [Figure 1]. The tooth was mobile and the child had difficulty in feeding. Hence, the treatment plan was to extract the neonatal tooth. The procedure was explained to the parent, and informed consent was obtained. Before extraction of the tooth, topical anesthetic agent was applied to the gingiva at the site of the tooth and a piece of gauze was placed lingually to the tooth which acted as a pharyngeal guard. Extraction of the tooth was done using extraction forceps. The postoperative site was fine before the baby was sent [Figure 2].

Review of Literature

Synonyms

Natal teeth are present at birth while neonatal teeth erupt 30 days or 1 month after birth into the oral cavity. Literature on chronology of the teeth confirms that there is a definitive time period to show when a particular tooth will erupt in the oral cavity which further varies depending on the hereditary, endocrine,
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Due to the social stigma and negativity associated with natal teeth, the correct incidence may not be known. Natal tooth is more frequently reported than the neonatal tooth, with a ratio about 3:1. The incidence of natal and neonatal teeth ranges from 1: 2,000 to 1: 3,500. In many cases, mostly in the mandibular anterior region, these teeth may belong to the normal deciduous set of dentitions. \(^{[5-6]}\) 85% are deciduous mandibular incisors, <0.01% lateral mandibular incisors, 2.5% other mandibular teeth, 4% maxillary central incisors, and <0.01% other maxillary teeth. Some believe that these teeth belong to primary dentition while others argue that they are accessory teeth. More than 90% of teeth belong to deciduous dentition while 10% and less are supernumerary teeth. Among 116 natal teeth, Bodenhoff found that 103 were primary teeth and 13 were hyperdontia (0.8% were primary and 2.1% secondary teeth overall). A prior radiograph before extraction is a must to confirm that the tooth is not of normal primary dentition. \(^{[5]}\) No gender predilection has been noted. A female predilection has been reported by Kates et al with 66% females showing these teeth. \(^{[6]}\) According to a study conducted by Anegundi, the prevalence of these teeth is more common among females than in males. \(^{[7]}\) Prevalence of natal with bilateral cleft lip/palate in children showed a male predilection while natal tooth with unilateral clefts was more common in females. Prematurely born infant rarely presents natal and neonatal teeth. \(^{[8]}\)

**Etiology**

The exact etiological factor for the occurrence of natal and neonatal teeth is unknown, but infection, febrile illness, injury, poor nutritional status, superficial positions of the tooth germ, hormonal influence, and exposure to environmental toxins during gestation are a few suggested etiologic factors. \(^{[5-6]}\) Autosomal-dominant mode of inheritance has also been suggested as etiology with up to 60% of cases reported in family members. Bodenhoff and Gorlin reported that 15% of children with these teeth had parents, siblings, or close family members who also have such teeth. \(^{[5]}\) It is also said that activity of osteoblasts inside the tooth bud region is associated with the condition. Vitamin deficiency has also been suggested as one of the etiological factors. Natal and neonatal teeth are associated with unilateral and bilateral cleft lip and palate. \(^{[5]}\) Association with Ellis-van Creveld Syndrome, Hallermann-Streiff syndrome, Jadassohn-Lewandowski Syndrome, Soto syndrome, Meckel-Gruber syndrome, and Pierre Robin sequence is also suggested in the published literature. Environmental factors such as polychlorinated aromatic hydrocarbons, namely polychlorinated biphenyls, Polychlorinated dibenzo-p-dioxin (PCDDs), and dibenzofurans, have also been suggested as causative factors. \(^{[9,10]}\)

Reports of natal and neonatal molars though rare have been reported, and they are said to be associated with some conditions such as Pfeiffer syndrome and Histiocytosis X. \(^{[11,12]}\)

The appearances of these teeth in pairs have been reported to be between 38% and 76%. \(^{[2,14,15]}\) The presence of the dental follicles in superficial area of the alveolar ridges probably related to hereditary factor is thought to be the most accepted etiology. \(^{[16]}\)
Classification

Heblng et al. in 1997 classified these teeth based on their appearance into four clinical categories:
1. Shell-shaped crown poorly fixed to the alveolus by the gingival tissue and absence of a root;
2. Solid crown poorly fixed to the alveolus by the gingiva and little or no root;
3. Eruption of the incisal margin of the crown through the gingiva;
4. Edema of the gingiva with an unerupted but palpable tooth.

Spouge and Feasby further classified these teeth clinically according to the degree of maturity, as:
1. A mature natal or neonatal tooth, which is nearly or fully developed and has a good prognosis.
2. Immature natal or neonatal teeth, which is a tooth with incomplete or substandard structure and has a poor prognosis.

If the tooth mobility is more than 2 mm, with the tooth belonging to either of the two above mentioned categories, then extraction is advised. Similar conditions such as supernumerary, early eruption, predeciduous dentition (premature eruption), explosive folliculitis, or true deciduous teeth may be differentiated by thorough anamnesis, clinical, and radiographic examinations.

Clinical presentation

The terms natal and neonatal were named mainly based on their timing of eruption and not related to any other anatomical, morphological, and structural characteristics. Structurally, these teeth are poorly developed. According to Lautrou (1986) said that these teeth show smaller size of crowns than those for deciduous teeth under normal conditions. These teeth show variation in size and shape being small and conical and may resemble normal teeth. The look of these teeth depends on the degree of maturity. They are usually mobile, small, discolored, and hypoplastic as seen in the present case. Hypoplasia/hypomineralization of enamel and short root development suggest their immature nature. These teeth may be brown, yellow, white, or opaque in color. Most of them are loosely attached to the gingival tissue due to incomplete or defective root formation as seen in the present case. Mobile teeth pose a risk of swallowing or aspiration. Mobile teeth further lead to the degeneration of Hertwig’s epithelial root sheath which hampers root development.

Histological characteristics

Histologically, the major portion of natal and neonatal teeth has dysplastic or hypomineralized enamel with varying degrees of severity. Dentin is irregular and interglobular dentin is seen in the coronal regions, and osteodentin is noticed in the cervical portions. Reduced number of dentinal tubules and irregular arrangement of tubules may be noticed in the crown till the cervical region. Dentinal tubules are straight incisally while irregular in the cervical region. Cervical portion of dentin is devoid of tubules and may show cell inclusions. Predentin thickness might vary, and calcospherites may be noticed. Enamel may be missing incisally. Both Hertwig’s epithelial root sheath and cementum formation may not be observed. Scallop of the dentinoenamel junction may not be seen which is the same as that of primary teeth. There may be absence of root formation, wider pulp canal and pulp chamber. Vascularized pulps along with few inflammatory cells and lack of cementum formation have also been reported. Some authors reported continued development of tooth-like substance after spontaneous exfoliation and extraction of natal and neonatal teeth which is referred as “tumorlike masses,” “toothlike structures,” “irregular masses of dentin,” “odontogenic remnants,” and “pearls of hard tissue.” Tsubone et al. reported such calcified masses in a case and used the term “residual natal tooth” to describe them.

Differential diagnosis

Clinical findings and radiographic investigations play a very important role in the diagnosis of the natal and neonatal teeth since these teeth need to be differentiated from the teeth of normal dentition and supernumerary tooth. Radiographs provide important information on the amount of root formation, their fixity to the gingival tissue, and presence of the corresponding deciduous tooth germ in the jaw. Differential diagnosis of natal and neonatal teeth may include inclusion cysts, namely Epstein’s pearls, Bohn’s nodules and dental lamina cysts, of newborn. Epulis and odontogenic hamartomas should also be ruled out.

Complications

Many problems can be encountered with these teeth such as laceration of the mother’s nipple, inconvenience in suckling, feeding difficulty due to sublingual ulceration of the tongue resulted by trauma due to sharp incisel edge (Riga-Fede disease or syndrome), pain generated by pressure on the mobile tooth, possibility of swallowing and aspiration of the tooth if it is mobile, and teething symptoms similar to those associated with the eruption of the deciduous teeth or diarrhea, drooling, and malaise. Abscess formation has also been reported rarely. Reports of associated reactive fibrous hyperplasia have also been published. Infection of these hypoplastic teeth may lead to osteitis and are said to result in small size permanent successors. Caries, chronic hyperplastic pulps, and early eruption of successor teeth are other associated risks of these teeth.

Management

On radiographic examination, if the natal or neonatal tooth belongs to normal deciduous dentition, it has to be retained. If the tooth is mobile and there is a risk of aspiration, thus extraction is advised. Extraction is advised when it is causing injury to the infant and causing difficulty in feeding. In case of sharp incisel edges, smoothing of the incisel margin is the treatment so as to prevent the injury of the mother’s breast while feeding. These teeth can be removed with forceps or even with the fingers. Some precautions include delaying the extraction until 10th day of life to prevent hemorrhage, Vitamin K administration before extraction, considering the general health status of the infant.
and avoiding injury to the adjacent gingival tissue and need to be extra cautious to prevent any aspiration during extraction. Few authors have considered extraction of tooth as a contraindication in newborns due to the risk of hemorrhage and also suggested that the administration of Vitamin K before the extraction procedure can reduce the risk of hemorrhage.[20,30]

Allwright reported extractions of these teeth in infants older than 20 days. The author suggested that this lag of time is essential to allow the establishment of normal intestinal commensal flora and production of Vitamin K which promotes hepatic prothrombin formation. Intramuscular injection of Vitamin K with a dose of 0.5-1 mg is usually advised to prevent hemorrhage.[11,20]

Conclusion

Proper diagnosis of natal and neonatal teeth is must for the proper management. Awareness on these teeth among pregnant women is essential to prevent unwanted anxiety. Knowledge on proper management of the complications associated with natal and neonatal teeth among pediatrician is as well important for proper referral to a pediatric dentist. All possible precautionary measures should be taken before extraction of the tooth. Extraction and other associated procedures have to be carried out by a dentist to prevent further complications.

References
