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Case Report

Early surprise: managing natal tooth in a 22-day-old infant

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ABSTRACT

The presence of teeth at birth or earlier than expected is a rare phenomenon and can evoke a variety of reactions. Natal teeth are those present at birth, while neonatal teeth appear within the first 30 days after birth, constituting an unusual and rare occurrence. This case report describes the management of a 22-day-old female infant with presence of an excessively mobile tooth in the lower jaw since birth, causing breastfeeding difficulties. The tooth appeared whitish opaque in colour, with grade II mobility. Crown size, shape, and appearance were similar to normal teeth. Due to the association of natal teeth with breastfeeding discomfort, extraction was recommended. No vitamin K prophylaxis was administered as the baby had achieved normal safe levels. Topical anesthesia was applied, and the tooth was extracted using primary anterior forceps. Hemostasis was achieved with sterile cotton gauze, and the patient was discharged post-extraction.

Keywords: Natal tooth, Mandibular incisor, Extraction, Vitamin K, Pediatric dentistry

INTRODUCTION

It is essential for pediatricians and pediatric dentists to be well-informed about the normal features and abnormalities in a newborn's oral cavity for early detection of issues. One such dental anomaly is the presence of natal and/or neonatal teeth.[1] Typically, the first tooth to erupt in the oral cavity is the mandibular central incisor, usually around six months of age.[2] However, variations in dental development can result in teeth being present at birth or shortly thereafter.[3] In 1905, Massler and Savara introduced terminology to classify teeth present at birth as "natal teeth" and those appearing within the first month as "neonatal teeth." Other terms used to describe these teeth include congenital teeth, fetal teeth, predeciduous dentition, and dentitia praecox.[4]

The prevalence of natal teeth ranges from 1 in 2000 to 3500 live births. Although the exact cause is unknown, several factors are believed to contribute to their development. Maternal risk factors during pregnancy include infections, febrile illnesses, trauma, malnutrition, hormonal influences, and exposure to environmental toxins. In the infant, a superficial position of the tooth germ, hereditary factors (often an autosomal dominant trait), osteoblastic remodeling within the tooth germ, and exposure to environmental pollutants such as polychlorinated biphenyls (PCBs) may increase the likelihood of natal teeth.

The clinical appearance of natal teeth varies widely, ranging from normal size and shape to smaller, conical forms. The colour can differ from whitish opaque to yellowish brown. These teeth may appear in an immature form, with minimal root development, and are often attached to the gum pads by a thin layer of soft tissue over the alveolar ridge.[5] In 1997, Hebling categorized natal teeth into four clinical types based on their appearance (Table 1).[6]

Table 1: Hebling classification of natal/neonatal teeth (1997).

Hebling classification of natal/neonatal teeth (1997).	
Class 1	Shell-shaped crown which is poorly fixed to the alveolus by gingival tissue with absence of a root
Class 2	Solid crown which is poorly fixed to the alveolus by gingival tissue with presence of little or no root
Class 3	Eruption of the crown's incisal margin through the gingival tissue
Class 4	Edema of the gingival tissue with a palpable but unerupted tooth

If a tooth is present at birth or erupts very early, it can cause difficulties for both the mother and the infant, such as pain during suckling, refusal to feed, or struggling to feed. Most natal teeth are prematurely erupted primary teeth and should be carefully managed unless they interfere with nursing or cause tongue ulceration, leading to serious complications. If extraction is necessary, it should be done with caution due to the underdeveloped coagulation mechanism in infants.[7,8]

CASE REPORT

A 22 days old baby girl was referred by the Paeditrician to the Department of Pediatric and Preventive Dentistry, MGDCH, Jaipur. The infant's mother complained about the presence of one excessively mobile tooth in the lower jaw since birth, which was causing difficulty during breast feeding. The child was delivered by normal vaginal delivery, and the perinatal history of the mother was normal. Past medical and Family history was non-contributory. On intraoral examination, single tooth is present in the mandibular anterior region and position of the natal teeth represent the corresponding position of 71. The tooth was whitish opaque in colour, with grade II mobility according to Millers classification of mobility. The size of crown, shape and the appearance were similar to normal teeth (Figure 1). The lips, gingivae, palate, tongue, floor of the mouth, and buccal mucosa were clinically normal in appearance and there was no ulceration on the ventral surface of the tongue. There was no gross congenital malformation.

The maxillary and rest of mandibular gum pads and intraoral mucosa was normal. Because of the association of natal teeth with discomfort to the mother during breast feeding, the natal teeth were advised for extraction. The procedure was performed with the dentist and mother in the knee-to-knee position, and the baby reclined in the dentist's lap. No vitamin K prescription prophylaxis was performed because the baby had already achieved the normal safe levels. Initially, the mucosa was dried and a topical anesthetic was applied with cotton three times. The tooth was extracted using primary anterior forceps. Sterile cotton gauze was then applied with pressure for hemostasis. The extracted tooth had the crown structure only and was lacking in root (Figure 2). After achieving complete haemostasis patient was discharged (Figure 3). Post-operative instructions were given to the parents and the patient was recalled after 1 week for follow up.

Figure 1: Neonatal teeth in the region of lower central incisors and lack of ulcer on the ventral surface of the tongue.

Figure 2: Extracted natal tooth.

Figure 3: Postoperative haemostasis achieved.

DISCUSSION

The phenomenon of dens connatalis, or natal teeth, is surrounded by various folklore and myths across different cultures. In some societies, such as in Malaysia and England, the presence of fetal teeth is believed to herald good fortune, while in others, including China, Africa, Poland, and India, children born with natal teeth are often considered bearers of misfortune. This cultural perception of natal teeth is deeply rooted and has been perpetuated through generations. Interestingly, references to natal teeth can also be found in literature and historical accounts. For instance, in Shakespeare's play "King Henry the Sixth," there is mention of fetal teeth, where Richard the Third is told that he had teeth in his head when he was born, symbolizing his ability to conquer the world. This association between natal teeth and extraordinary abilities or destinies further adds to the mystique surrounding this dental anomaly.[9]

Natal teeth, occurring at birth, are three times more common than neonatal teeth, with an incidence ranging from 1:2,000 to 1:3,000 live births, and females are more predisposed to this anomaly.[10] Clinical cases often report the occurrence of neonatal teeth, predominantly affecting the lower central incisors (around 85% of cases) and the upper central incisors (around 11%).[11-13] Research by Cunha et al suggests that natal and neonatal teeth commonly appear in pairs, a finding corroborated in the presented cases.[2] Additionally, the two patients discussed in the cases were female, aligning with literature indicating a higher prevalence of this condition in females.[1]

The teeth most commonly affected by hypoplastic enamel in natal and neonatal teeth are the lower primary central incisors, accounting for approximately 85% of cases. Following these, the maxillary incisors are affected in about 11% of cases, while the mandibular canines and molars are affected in 3% of cases, and the maxillary canines and molars in 1% of cases. The gingival covering may contribute to discoloration of natal teeth, while incomplete root formation is the primary reason for the excessive mobility observed in natal and neonatal teeth.[14]

The exact cause of natal and neonatal teeth remains uncertain, although several factors have been suggested to contribute, including the superficial positioning of tooth germs, increased eruption rates due to fever episodes, developmental abnormalities, hormonal influences, and hereditary syndromes.[15,16] Some sources propose that an autosomal dominant gene may be the hereditary factor, as evidenced by a report detailing five siblings born with natal teeth.[17] A study revealed a prevalence of 9% among Indian newborns, with 62% of their relatives also exhibiting natal or neonatal teeth.[18] Environmental factors such as polychlorinated biphenyls (PCB) and dibenzofurans have been implicated in increasing the incidence of natal teeth.[19] Children exposed to these substances may exhibit additional symptoms such as dystrophic fingernails, hyperpigmentation, among others.[20]

Several syndromes have been associated with the presence of natal or neonatal teeth. Some of these syndromes include cleft lip and palate, Pfeiffer syndrome, Ellis-van Creveld syndrome, Pachyonychia congenita (Jadassohn-Lewandowsky), Rubinstein-Taybi syndrome, Pierre-Robin sequence, Pallister-Hall syndrome, Hallermann-Streiff syndrome, Sotos syndrome and epidermolysis bullosa simplex. These associations highlight the importance of thorough evaluation and assessment when natal teeth are present, as they may serve as a clinical indicator of an underlying genetic condition or syndrome. Early diagnosis and management of associated syndromes are essential for providing appropriate medical care and support to affected individuals.[9]

The removal of a natal tooth is advisable if it disrupts the child's nutrient intake, is highly mobile and poses a risk of aspiration, or is associated with soft tissue growth. Asymptomatic cases typically do not require treatment.[21] In our case, since the natal tooth was impeding feeding, extraction was planned. However, the decision to proceed with extraction should be made cautiously. Infants are particularly vulnerable to vitamin K deficiency bleeding (VKDB), which can result from vitamin K malabsorption, leading to severe bleeding in breastfed infants due to its crucial role in liver prothrombin production.[22] Prophylactic vitamin K administration may not be necessary for infants older than ten days, as this allows time for the establishment of commensal intestinal flora and vitamin K production.

In our case, since the infant was 22 days old, no prophylactic vitamin K administration was given before extraction. A case series conducted by Allwright (1958) involving 15 babies with 25 natal/neonatal teeth showed no instances of post-extraction hemorrhage, despite the absence of therapeutic precautions. The study also noted that all extractions were performed in babies older than 20 days.[23]

Extraction of the natal tooth should be followed by curettage of the socket to prevent the continued development of the cells of the dental papilla, as documented by Ooshima et al and Tsubone et al.[24,25] Failure to do so may result in the eruption of tooth-like structures several months later, a condition referred to as residual natal tooth by Tsubone et al.[25]

CONCLUSION

In conclusion, the case highlights the importance of vigilance in diagnosing and managing natal teeth in infants. Despite their rarity, natal teeth can pose significant challenges, particularly when they interfere with feeding or pose a risk of aspiration. In this case, the natal tooth was identified early, and appropriate measures were taken to ensure the infant's safety during extraction. Furthermore,

the decision not to administer prophylactic vitamin K prior to extraction was made based on the infant's age and risk factors. Overall, successful management of natal teeth in infants requires a multidisciplinary approach, careful consideration of individual patient factors, and timely intervention to prevent complications and promote optimal oral health.

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