

RIGA FEDE DISEASE ASSOCIATED WITH NATAL TOOTH AND ITS MANAGEMENT - A CASE REPORT

Pedodontics

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ABSTRACT

Teeth that are present at birth in infants are referred to as "natal teeth." In certain instances, infants are born without teeth, although eruption may occur within the first four weeks post-delivery. These teeth are called as "neonatal teeth." The most frequently observed natal teeth are the mandibular central incisors, which typically erupt first. Natal teeth can cause discomfort to the nursing mother and pose a risk of aspiration and swallowing for the infant if they are mobile. Additionally, they may lead to irritation and trauma to the infant's soft tissues. In such cases, extraction of the natal teeth is necessary. This article presents a case report of an infant with two natal teeth located in the mandibular incisor region, which were found to be excessively mobile. Due to the difficulties they presented during nursing and the risk of aspiration, these teeth were extracted.

KEYWORDS

Natal teeth, Neonatal teeth, Riga fede disease, Extraction

INTRODUCTION

Roman scholars Titus Livius (59 BC) and Caius Plinius Secundus (23 BC) were the first to observe natal teeth, which they later documented in cuneiform tablets discovered at Nineveh. Dentitia praecox, dens connatalis, congenital teeth, fetal teeth, or precocious dentition are other names for natal and neonatal teeth. Teeth present at birth are known as natal teeth, while neonatal teeth are those that erupt within the first 30 days of birth. Natal teeth occur more often than neonatal teeth at a ratio of approximately 3:1. Bodengoff's study revealed that the majority, 85%, of natal teeth are mandibular incisors, while 11% are maxillary incisors, 3% are mandibular canines, and 1% are either maxillary canines or molars. It was also noted that natal teeth are typically found in pairs.⁽¹⁾

The specific cause is not known. Natal teeth have been linked to imbalances in the endocrine system, vitamin deficiencies, fever, injuries, and syphilis. Genetic factors and conditions such as cleft lip and palate, Pierre Robin syndrome, craniofacial dysostosis, and Rubinstein-Taybi syndrome have also been connected to these teeth. It is currently believed that natal teeth are due to the superficial placement of the developing tooth germ.⁽²⁾

Riga Fede disease (RFD) is a rare, non-cancerous lesion that often occurs on the dorsal side of the tongue, resulting from the constant rubbing against the mandibular anterior teeth as the tongue moves forward and backward. This can lead to a complete loss of the suckling reflex due to the intense pain experienced.⁽³⁾

There are multiple names used to refer to the condition, such as Riga's disease, Riga-Fede's disease, sublingual ulcer, sublingual granuloma, traumatic sublingual ulceration, eosinophilic granuloma, traumatic eosinophilic ulceration of the tongue and oral mucosa, sublingual fibrogranuloma, sublingual growth in infants, and traumatic atrophic glossitis.⁽⁴⁾

Clinical Case Report

A 3 week old female infant was reported to the Department of Pediatric and Preventive dentistry of VS Dental College and hospital, Bangalore with a chief complaint of pain, ulceration on the lower surface of the tongue and presence of teeth in the lower front region of the mouth; causing difficulty in breastfeeding. Her parents conveyed that the child was experiencing insufficient nutrient intake, attributed to challenges in suckling and recurrent bleeding from the tongue. [Figure 1]

On intra oral examination, a definitive link was established between the ulcer and the presence of a partially erupted calcified shell like teeth structures in the lower central incisors region which were whitish yellow in colour and was of grade II mobility. [Figure 2] The shell like teeth structures were smaller in overall dimensions when compared to the corresponding primary teeth. It appears that the infant was experiencing discomfort, resulting in the mouth being consistently kept open during feeding, necessitating the use of a spoon.

The teeth were identified as "natal teeth" because they were present in the infant's mouth at birth. The decision to remove these mobile natal

teeth was made for two primary reasons: to avoid choking hazards and to guarantee the baby received adequate nutrition. The two natal teeth were extracted under local anesthesia. [Figure 3]. Post-extraction hemostasis was achieved. [Figure 4]

There were no post operative complications, including instances of bleeding or infection. The mother was given instructions regarding oral hygiene for the newborn baby and breastfeeding. Upon re-evaluation after 2 weeks, uneventful wound healing was observed. [Figure 5]

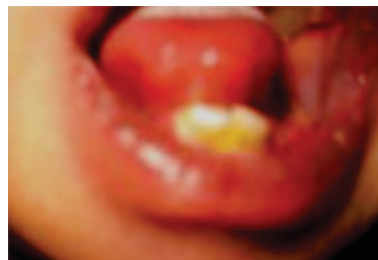


Figure 1: 3 Week Old Infant With Mandibular Natal Teeth



Figure 2: Natal Tooth In Mandibular Anterior Region With Ulcer On Tongue



Figure 3: Extracted Natal Tooth



Figure 4: Post Extraction Picture Showing Hematoma Formation

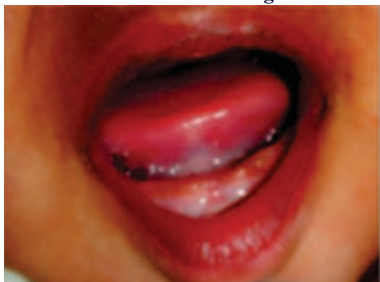


Figure 5: Uneventful Healing During Follow Up Visit After 2 Weeks

DISCUSSION

The occurrence of teeth in newborns is a rarity, attributing this peculiar phenomenon to a multitude of myths across diverse cultures. For instance, within British culture, the presence of natal teeth in infants is heralded as a sign of exceptional future military prowess, while in China, India, and Poland, such infants are traditionally viewed as symbols of ill luck. Moreover, in France and Italy, it is believed that those born with this condition will go on to become the world's greatest conquerors, citing historical figures like Napoleon Bonaparte and Julius Caesar as examples.⁽⁵⁾

Pertaining to the causes and risk factors implicated in the development of neonatal teeth, it is currently acknowledged that there is neither a definitive nor established singular cause. Researchers have implicated a range of theoretical factors, including congenital syphilis (resulting from infection), osteoblastic activity in the germ region, genetic syndromes, exposure of the mother to environmental toxins (particularly polychlorinated biphenyls (PCB) and dibenzofurans), episodes of fever during pregnancy, and nutritional insufficiencies (specifically hypovitaminosis).⁽⁶⁾

However, the prevailing hypothesis is the one proposed by Hal in 1957, suggesting that the presence of natal/neonatal teeth is attributable to their superficial position relative to the tooth germ. This suggests that the tooth does not occupy a normal alveolar space but rather lies beneath the surface of the alveolar bone, above the germ of the permanent successor tooth.⁽⁷⁾ Moreover, the validity of this theory was supported by Boyd and Miles through their analysis of mandibular anatomical sections from a stillborn fetus⁽⁸⁾. Consequently, this peculiar location appears to facilitate the tooth's eruption at an earlier stage and appears to be associated with a genetic predisposition.⁽⁹⁾ Furthermore, the hypothesis was corroborated by a study conducted by Kates et al. in 1984⁽⁵⁾. The research team identified that seven out of the 38 infants with natal/neonatal teeth had a family history of such teeth, spanning two siblings, one mother, three paternal grandfathers, and one paternal grandmother.

Hebling et al.⁽¹⁰⁾ classified these into the categories:

- (1) shell-shaped crown loosely attached to the alveolus by a rim of oral mucosa without any root,
- (2) solid crown loosely attached to the alveolus by oral mucosa with little or no root,
- (3) incisal edge of crown just erupted through oral mucosa, and
- (4) a mucosal swelling with palpable but unerupted tooth

Diagnosis is completely dependent on a thorough examination of medical history and physical examination. Whenever feasible, a radiographic examination is conducted to ensure that there are no normal teeth or extra teeth present, thereby preventing unnecessary extractions. It is commonly understood that approximately 1% to 10% of cases involve supernumerary teeth, with over 90% being attributed

to the premature eruption of primary teeth⁽¹¹⁾.

When formulating a treatment plan, several factors must be taken into consideration:

- 1) The extent of tooth movement and potential for implantation (movement > 2mm)
- 2) The ease with which feeding can occur
- 3) Any impact on breastfeeding
- 4) Whether the tooth is supernumerary or belongs to the typical dentition
- 5) Systemic health concerns.

Extraction should be the preferred course of action, it is often advisable to postpone the procedure until the child is 10 days old. This delay is aimed at ensuring the child reaches adequate levels of vitamin K in their blood. Additionally, this period allows the normal gut microbiota to establish, which is crucial for vitamin K synthesis in the liver, a process necessary for prothrombin production. The American Academy of Pediatrics endorses the administration of a single, intramuscular dose of vitamin K to newborns, with a recommended dosage ranging from 0.5 to 1 mg. This recommendation is provided with the consent of the parents.⁽¹²⁾

Some infants were observed to present sublingual ulcerations, a condition known as Riga-Fede disease, which is believed to be the result of continuous traction inflicted by the tooth on the tongue. In instances characterized by minor tongue irritation, a conservative treatment strategy, such as the smoothing of the incisal edge, could be explored. Nonetheless, in situations involving significant, ulcerated areas, the persistence of irritation might necessitate the extraction of the affected tissue⁽¹³⁾. As per the findings of Padmanabhan et al., the smoothing of the incisal edge not only diminishes the incidence of ulceration but also aids in preventing injury to the mother during breastfeeding.⁽¹⁴⁾ On the contrary, few authors like Zhu and his colleague King et al. proposed that there is no correlation between trauma to the mother's nipple and the presence of natal teeth.⁽¹⁵⁾

The significance of the pediatric dentist's role in managing natal and neonatal teeth is paramount. The decision regarding whether to retain or extract these teeth necessitates a thorough evaluation of their associated risks and benefits. It is important to educate parents regarding natal teeth and its potential consequences.

CONCLUSION

Newborns with natal or neonatal teeth require meticulous examination and proper treatment planning. It is crucial to give parental counseling equal importance. Pediatricians are often the first to discover natal teeth, and early consultation with a pediatric dentist can prevent complications. Pediatric dentists play a vital role in both management and parental education, as well as in creating awareness regarding natal teeth.

Declaration Of Patient Consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/ her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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