



Riga-Fede Disease Associated with Natal Teeth in a Premature Female Child: A Case Report

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Natal and Neonatal teeth area unit though not common tooth development process anomalies. They are oftentimes a section of teeth anomalies. The prevalence has been determined between one in 2000 to 3500 live births. The aim of this paper is to report a case of a ten- day old baby with natal teeth in mandibular anterior region associated with ulceration on ventral surface of the tongue. Clinical presentation disclosed natal teeth with no mobility within the mandibular anterior region and Riga–Fede disease. The treatment plan was to extract the natal teeth followed by surgical operation of the extraction socket to forestall aspiration, swallowing of teeth, and for early resolution of lesion. Satisfactory healing of lesion was resolute at ten days follow up visit.

Keywords: Aspiration; feeding; natal teeth; riga–fede; preterm, extraction.

1. INTRODUCTION

In 1950, Massler and Savara introduced the currently unremarkably used terms “natal teeth” for teeth gift at birth and “neonatal teeth” for teeth that erupt at initial first thirty days of life [1]. The teeth area unit usually

conditionally developed and can have a weak root. Natal teeth aren't common and they are not frequently encountered in daily practice as like neonatal teeth.

The presence of natal teeth were rumored throughout Roman times by historian (59 BC)

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and Caius Plinius Secundus (23 BC) and were delineate within the cuneiform inscriptions found at Nineveh [2]. Dentitia praecox, dens connatalis, nonheritable teeth, craniate teeth, infancy teeth, predeciduous teeth, and dentition area unit variety of the terminologies used previously [3]. Zhu and King rumored the incidence of every natal and baby teeth as ranging from 1:716 to 1:30 000 [4], whereas Chow rumored associate incidence of 1:2000 to 1:3500 [5]. Natal teeth unit encountered lots of usually than neonatal teeth in associate approximate magnitude relation of 3:1 with an even bigger predilection for women.

In 1997, Hebling classified natal teeth into four varieties supported the clinical appearance [6]:

- i. Shell shaped crown, poorly fastened to the alveolus by tissue tissue, and absence of a root
- ii. Solid crown, poorly fastened to the alveolus by tissue tissue, and tiny or no root
- iii. Eruption of the incisal margin of the crown through the tissue tissues
- iv. Edema of gingival tissue with associate unerupted however palpable tooth.

Risks for the kid because of presence of natal teeth includes (i) risk of swallowing or aspiration if the tooth is excessively mobile (ii) ulceration on the ventral surface of tongue due to sharp incisal edges (iii) possibility of traumatic injury (iv) their presence may cause soreness within the new born and (iv) they may interfere with breastfeeding with resultant feeding refusal and growth retardation. Difficulties for the mother because of presence of natal teeth (i)

inconvenience during suckling and (ii) Injury to the mother's breast like lacerations [7].

The presence of teeth at birth might cause traumatic ulcers which might be unremarkably placed on the ventral surface of the tongue or lip and so the mother's breast [8]. The lesion is usually unifocal, though multifocal lesions and recurrences are rumored [9,10]. The clinician's information of this entity is extremely important to provide an efficient treatment. Constant trauma will produce enough injury to interfere with diet and have an impact on the nutrition of the patient, as was the case in our patient, therefore, it is necessary to supply timely treatment for these patients and it must begin guardedly, orientated to eliminate the provision of the trauma [10]. Failure to properly diagnose and treat this injury will cause dehydration and inadequate nutrient intake with different medical sequelae [11].

2. CASE REPORT

A 10-day-old female infant accompanied by mother reported to the pediatric dental clinic, with a chief complaint of teeth in the lower front region of jaw and difficulty in feeding Fig. 1].

The teeth were surrounded by yellowish deposits. the dimensions of crown, shape and therefore the appearance were like normal teeth. The gingiva perceived to be slightly swollen. The maxillary and remainder of mandibular gum pads, dorsum of the tongue and intraoral mucosa was normal Fig. 2. There was discomfort to the mother during breast feeding because of the association of natal teeth.



Fig. 1. Extra-oral photograph of a ten days old child with natal teeth



Fig. 2. Natal teeth present within the lower anterior region of the jaw



Fig. 3. Ulcer within the ventral region of the tongue and lower incisor natal teeth

Inspection of ventral surface of the tongue revealed a large ulcerative lesion with a white fibrous plaque on the surface. Lesion size was 10mm x 12mm extending from tip of the tongue anteriorly to lingual frenum bilaterally. The ulcer was painful on palpation. Upon clinical examination, no evidence of excessive tooth mobility within the natal tooth was found, despite the x-ray having verified that root development was inadequate. The case was diagnosed as precocious Riga–Fede Disease. It had been decided to manage the case with the extraction of natal teeth because of difficulty during nursing and stop the resolution of the ulcerated lesion Fig. 3. The extraction of natal teeth was done under topical anesthesia ointment containing 20% Benzocaine Fig. 4 followed by curettage of the extraction socket. The extracted teeth were yellowish white, opaque without root

Fig. 5. Postoperative instructions got and demonstration of oral hygiene maintenance for the infant was given to the mother. There was healed sockets in lower anterior region of the jaw ulcer was reduced and improvement in suckling was observed at 10 day follow-up visit Fig. 6.

3. DISCUSSION

This article presents a case report of a natal teeth belonging to the conventional series of the deciduous dentition, present since birth, in an exceedingly ten day-old infant. The occurrence of a natal or neonatal tooth represents an alteration to the chronology of primary tooth eruption, considered rare [2]. In most cases, they're small, yellowish in color and with insufficient root development. The exact etiology is unknown.



Fig. 4. Tooth extraction, performed without complication



Fig. 5. Extracted Natal Teeth



Fig. 6. Follow up after 10 days with healed socket and reduced Riga Fede Disease

The precocious eruption can be with the association of many conditions such as infections, nutritional deficiency, fever, endocrine disorders, superficial position of tooth germs, and osteoblastic activity in the area of dental germs has been suggested [12]. The natal and neonatal teeth may be related to heredity and to more than 20 syndromes and abnormalities such as chondroectodermal dysplasia, congenital pachyonychia, Hallermann-Streiff Syndrome, craniofacial dysostosis, Pierre Robin Sequence, Sotos Syndrome, Syndrome of Wiedemann, and Meckel and Gruber Syndrome [13].

An extreme treatment would involve the extraction of the natal tooth, which is suggested within the case of a supernumerary tooth. The extraction is planned in such cases which are related to Riga-Fede syndrome which is one in all major complication from neonatal teeth, that's an ulceration on the ventral surface of the tongue caused by tooth's sharp incisal edge. Constant trauma may create ulceration sufficient to interfere with proper suckling and feeding and put the neonate in danger for nutritional deficiencies [14].

The lesion was first described by Antonio Riga, an Italian physician in 1881. Histologic studies and extra cases were subsequently published by F. Fede in 1890 [15]. It's been subsequently been referred to as "Riga-Fede disease". Treatment of Riga-Fede disease has varied over the years. Early treatment consisted of excision of the lesion. Thanks to the erroneous diagnosis of the etiology, resolution of the lesion occurred only upon weaning of the kid.

Zhu and King [4] reported that there was no relationship between wounding of the mother's nipple and the presence of natal teeth since the tongue is interposed between these teeth and the nipple during breastfeeding. Thus, traumatic injury would occur only to the baby's tongue.

The uniqueness of this case stems from the presence of the natal tooth in a very preterm newborn, whose data, as provided by the mother, were corroborated by hospital records. The reporting of natal or neonatal teeth in preterm newborns is incredibly rare, there being only {a few} studies about how frequently this happens and with only a few clinical reports appearing within the literature since, in general, dental eruption in children born preterm is delayed compared with full-term infants [16]. Factors like low birth weight and

prematurity may, in general, have a bearing on development, and it could even be possible for tooth development to be impacted specified preterm infants at the instant of birth aren't completely developed, thus their age doesn't correspond to their biological age.

In the cases of natal and neonatal teeth in preterm newborns, found during the bibliographic research, hypermobility of the tooth was a relentless, with the occurrence of spontaneous exfoliation, extraction [17].

According to Rushman [18], teeth mustn't be extracted in infants but 10 days due to increased bleeding from extracted socket as antihemorrhagic factor is synthesized by the gut bacteria nearly 10 days after the birth that's essential for the assembly of thrombin from the liver. If the natal teeth are symptomatic and are definite indicators for extraction before 10 days old, then naphthoquinone supplements are given and under careful monitoring of vitamin K levels the teeth are extracted. So, it's wiser to attend for 10 days if it's permits. Generally, 0.1 - 0.5 mg of naphthoquinone is run through intramuscular route to regulate haemorrhage.

For the Pediatric dentist due to presence of natal teeth before extraction or after diagnosis, a radiograph must be taken to seek out whether the tooth may be a of normal dentition or is supernumerary [7]. The management of Riga-Fede disease has varied over the years. Initially the treatment consisted of excision of the lesion. Due to the erroneous diagnosis of the etiology, resolution of the lesion occurred only upon weaning of the child. In case of mild to moderate irritation to the tongue, conservative treatment was approached such as smoothing the incisal edge with an abrasive instrument alternatively, a small increment of composite may be bonded to the incisal edges of the teeth to prevent ulceration of the tongue [19].

In our case, natal teeth belonged to Hebling's category 2 [6], where the crowns are solid but with tiny or no roots, hence natal teeth were extracted. After extraction curettage of the socket is suggested to forestall the event of dental papilla cells which will cause the odontogenic remnants [20] within the present case, natal teeth was immobile and immature. So, they're extracted with none curettage and radiographic examination.

Similar treatment was suggested and seen in a case report by Valderrama-Iracheta et al who presented a case report and observed that tooth extraction turned out to be an effective procedure by removing the two incisor neonatal teeth in the lower jaw that the patient had, 2 weeks after extraction the patient evolved favourably without presenting complications [21]. Jamani N.A et al. concluded from a case report of a baby girl neonatal teeth with Riga Fede Disease, that extraction of the neonatal tooth promoted rapid healing of oral ulcers and the reestablishment of breastfeeding [22].

4. CONCLUSION

An accurate *viva voce* is suggested in newborns, so as to ascertain the suitable diagnosis because the natal teeth aren't the sole oral alteration that may be observed in neonates. Early diagnosis helps in early resolution of ulcerative lesion and aids in resuming normal feeding. New born with prematurely erupted teeth must be carefully examined and further treatment planning, in addition as parent counseling must incline equal importance to bring awareness among parents. The interaction of specialists in neonatology, pediatrics and pediatric dentistry, within the evaluation and diagnosis of natal and neonatal teeth, was found to be important for a fast response through clinical and radiographic examinations, enabling a required treatment plan. Parental counseling and recall visits should be undertaken for supervising the event of the longer term dentition.

CONSENT

As per international standard, Parental consent was obtained, and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Massler M, Savara BS. Natal and neonatal teeth. A review of 24 cases reported in the literature. *J Pediatr*. 1950;36:349–59.
2. Seminario AL, Ivancakova R. Natal and neonatal teeth. *Acta Medica*. 2004;47:229–233. To EWH. A study of natal teeth in Hong Kong Chinese. *Int J* 1992;2:73–6.
3. Kates GA, Needleman HL, Holmes LB. Natal and neonatal teeth: A clinical study. *The Journal of the American Dental Association*. 1984;109(30):441–443.
4. Zhu J, King D. Natal and neonatal teeth. *ASDC J Dent Child*. 1995;62:123–8.
5. Chow MH. Natal and neonatal teeth. *J Am Dent Assoc*. 1980;100:215–16.
6. Hebling J, Zuanon AC, Vianna DR. Dente natal – A case of natal teeth. *Odontol Clín* 1997;7:37-40.
7. Mallineni SK, Nuvvula S. Management of supernumerary teeth in children: A narrative overview on published literature. *J Cranio Max Dis*. 2015;4:62-68.
8. Slaryton R. Treatment alternatives for sublingual traumatic ulceration (Riga-Fede disease). *Fed Dent*. 2000;22:413-4.
9. Chow MH. Natal and neonatal teeth. *J Am Dent Assoc*. 1980;100:215–16.
10. Campos-Muñoz L, Quesada-Cortés A, Corral-De la Calle M, Arranz-Sánchez D, Gonzalez-Beato MJ, De Lucas R, et al. Tongue ulcer in a child: Riga-Fede disease. *J Eur Acad Dermatol Venereol*. 2006;20:1357-9.
11. Guzman A, Mendoza G. Dientes natales y enfermedad de Riga-Fede. *Dermatol Pediatr Lat*. 2005;152-157.
12. Campos-Muñoz L, Quesada-Cortés A, Corral-De La Calle M, et al. Tongue ulcer in a child: Riga-Fede disease. *Journal of the European Academy of Dermatology and Venereology*. 2006; 20(10):1357–1359.
13. Leung AK, Robson WR. Natal teeth: a review. *Journal of the National Medical Association*. 2006;98(2):226–228,.
14. Choi SC, Park JH, Choi YC, Kim GT. Sublingual traumatic ulceration (a Riga-Fede disease): Report of two cases. *Dent Traumatol*. 2009;25:48-50.

15. Mhaske S, Yuwanati MB, Mhaske A, Ragavendra R, Kamath K, et al. Natal and neonatal teeth: An overview of the literature. *ISRN Pediatr*. 2013;956269.
16. Slaryton R. Treatment alternatives for sublingual traumatic ulceration (Riga-Fede disease). *Fed Dent*. 2000;22: 413-4.
17. Ramos SRP, Gugisch RC, Fraiz FC. The influence of gestational age and birth weight of the newborn on tooth eruption. *J Appl Oral Sci*. 2006;14(4):228-32.
18. Rusmah M. Natal and neonatal teeth: A clinical and histological study. *J Clin Pediatr Dent*. 1991;15(4):251-253.
19. Hegde RJ. Sublingual traumatic ulceration due to neonatal teeth (Riga-Fede disease). *J Indian Soc Pedod Prev Dent*. 2005;23:51-2.
20. Cizmeci MN, Kanburoglu MK, Uzun FK, Tatli MM. Neonatal tooth in a preterm infant. *Eur J Pediatr*. 2013;172(2):279.
21. Valderrama-Iracheta L, Hernández-Trejo KE, Rosales-Solis GM. Natal teeth associated with Riga-Fede disease (Sublingual traumatic disease/traumatic lingual ulceration): A case report and review of literature. *Clin Microbiol Infect Dis* 5; 2020.
22. Jamani NA, Ardini YD, Harun NA. Neonatal tooth with Riga-Fide disease affecting breastfeeding: A case report. *Int Breastfeed J*. 2018;13:35.

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