

CASE REPORT

Natal teeth: Case report and review of literature

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ABSTRACT

The presence of teeth at birth or within a month post-delivery is a rare condition. A newborn, a 2 days old female, with two mandibular incisor natal teeth was examined. The teeth were mobile and were extracted because of the fear of aspiration and refusal to feed. The purpose of this report is to review the literature related to natal teeth epidemiology and discuss their possible etiology and treatment.

Key words: Mandibular incisor, natal teeth, neonatal teeth

INTRODUCTION

The presence of teeth in newborns is uncommon, varying from 1:6000 to 1:800 cases, occurring in general with incidences of two or three teeth.^[1]

One of the major events in a baby's first year of life is the eruption of the first tooth. The eruption of the baby's first tooth will bring immense joy to the parents. It is associated with lots of emotions. If a tooth is found at the time of birth or too early, it leads to a plethora of reactions, which are combined with a lot of misconceptions. To complicate matters further, there are various difficulties, like pain on suckling, refusal to feed, faced by the mother and the child due to the natal tooth or teeth.

CASE REPORT

A 2-day-old female infant was referred to the M. S. Ramaiah Dental College and Hospital with complaint of two teeth in the lower jaw since birth, continuous crying, and refusal to suck milk.

Oral examination revealed two crowns of the teeth in the mandibular anterior region [Figure 1], whitish opaque in color and exhibiting grade III mobility. The crown size was normal; the gingiva was of normal appearance. A diagnosis of natal tooth was made.

Since immediate extraction was the treatment of choice, a pediatrician was consulted and vitamin K (0.5 = 1.0 mg) was administered intramuscularly as a part of immediate medical care to prevent hemorrhage; and the teeth were extracted under topical local anesthesia, which the patient tolerated well. The patient was reevaluated after 2 days, and the recovery was found to be uneventful. The extracted teeth had a crown but were devoid of roots.



Figure 1: A 2-day-old female infant showing crowns of the teeth in the mandibular anterior region

REVIEW OF LITERATURE

Presence of natal tooth is one of the variations observed in the newborn's oral cavity.^[2] The folklore and misconceptions surrounding natal and neonatal teeth vary; in some cultures like Malaysian communities, a natal tooth is believed to herald good fortune; in others, its occurrence is considered bad omen. In China, Poland, India, and Africa, the affected children are considered to be monsters and bearers of misfortune. Shakespeare contributed his thoughts on natal teeth in 'King Henry the Sixth,' when he refers to Richard the Third in his quotation "teeth hadst thou in thy head when thou wast born to signify thou camest to bite the world".^[3] In England, the belief was that this condition would guarantee the conquest of the world.^[4]

The presence of teeth at birth or within a month post-delivery is a rare condition. Massler and Savara have divided these teeth into two groups according to the time of eruption. They termed all teeth that are present at birth as natal teeth and those

that erupt during the neonatal period (first 30 days of life) as neonatal teeth.^[3,5-7]

SYNONYMS

Terms such as congenital teeth, fetal teeth, predeciduous teeth, and precocious dentition (Mayhall and Bodenhoff), as well as dentitia praecox and dens connatalis, have been used to describe these teeth. More recently, it was been found that these terms were too broad to accurately describe teeth that erupted at birth or shortly thereafter. Currently the terminologies 'natal' and 'neonatal,' used by Massler and Savara, have been adopted. Even these terms only define the time of eruption and give no consideration to anatomy and histology or whether the tooth is a component of primary dentition or whether it is supernumerary.^[3,8]

CLASSIFICATION

Spoug and Feasby (1966) have suggested that clinically, natal and neonatal teeth be further classified according to their degree of maturity.^[4]

1. A mature natal or neonatal tooth is one which is nearly or fully developed and has relatively good prognosis for maintenance.
2. The term immature natal or neonatal tooth, on the other hand, implies a tooth with incomplete or substandard structure; it also implies a poor prognosis.

The appearance of each natal tooth into the oral cavity can be classified into four categories as the teeth emerge into the oral cavity.^[4,9]

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

If the degree of mobility is more than 2 mm, the natal teeth of category (1) or (2) usually need extraction.^[9]

PREVALENCE

The prevalence is 1:700 to 1:30,000 depending on the type of the study; the highest prevalence is found in the only study that relies on personal examination of patients.^[9] Other reports reveal it to be around 1 in 2000–3500 live births (Massler and Savara, 1950; Bodenhoff and Gorlin, 1963; Spouge and Feasby, 1966).

INCIDENCE

The reported incidences vary greatly, from those of Mayhall at 1:11 and Gordon at 1:100 through those of Massler and Savara, Gardiner, Spouge, all at 1:2000; down to those of Ballantyne at 1 in 6000 births, and Howkins at 1:10,000.^[8,10,11]

CLINICAL FEATURES

Reports about significant differences between males and females are conflicting, with females, in general, being more affected; and also Muslim children exhibited more natal/neonatal teeth as compared to Hindu children. Natal teeth are more frequent, approximately three times more common than neonatal teeth,^[3] with the most common localization being the mandibular region of central incisors (85%), followed by maxillary incisors (11%), mandibular cuspids or molars (3%), and then maxillary cuspids or molars (1%).^[3] Natal or neonatal cuspids are extremely rare.^[1]

As has been noted, the natal and neonatal teeth are more frequently seen in the mandibular incisor regions and are more frequently bilateral.

Most commonly, these teeth are precociously erupted from the normal complement of primary teeth (90%-99%). Only 1% to 10% of natal and neonatal teeth are supernumerary.^[12-14]

ETIOLOGY

Etiology of natal and neonatal teeth is debatable. The various hypothetical factors reported by investigators include the following:

1. The rate at which baby's teeth come through will depend on his 'genetic blueprint',^[9] i.e., hereditary transmission of a dominant autosomal gene appears to be an important factor.^[4,15] In other words, if one or both of his parents were very late or very early teetherers, there is a strong chance that he too will be a very late or very early teether respectively. Unlike his body growth, the appearance of baby's first teeth is not influenced by how well he eats or how healthy he is. Teeth appear when they are ready! Bodenhoff and Gorlin have verified that 15% of children with natal and neonatal teeth had parents, siblings, or close relatives with a history of having presented with the same condition.^[13] Tlingit Indians in Alaska showed a prevalence of 9% of their newborns having natal or neonatal teeth; 62% of them had affected relatives.^[12] A hereditary factor has been traced in 10 out of 24 cases of natal teeth studied by Massler and Savara (1950), and in 7 out of 19 cases reported by Gardiner (1961). Halls (1957) reports a family of three brothers, one of whom

had 2 incisors present at birth; and in another, a tooth had erupted 9 days after birth. Allwright (1958) describes a series of 26 cases of natal or neonatal teeth in Chinese babies in Hongkong, in only one of which was he able to trace any hereditary influence. In this series, 20 of the 26 cases were of female infants.^[15]

2. Endocrine disturbances: It is thought to be because of excessive secretion of the pituitary, thyroid or gonads.
3. Jasmin and Clergeau-Guerithault reported that the eruption of natal and neonatal teeth could be dependent on osteoblastic activity within the area of the tooth germ.^[4,15]
4. Infection: For example, congenital syphilis appears to have varying effect; in some cases, it has erupted early, while in others it has been retarded.^[15]
5. Nutritional deficiency, e.g., hypovitaminosis (which in turn is caused by poor maternal health, endocrine disturbances, febrile episodes, pyelitis during pregnancy, and congenital syphilis).^[3,15]
6. Febrile status: Fever, exanthemata during pregnancy tend to accelerate eruption as they do in various other processes.
7. Superficial position of the tooth germ.
8. Environmental factors: Polychlorinated biphenyls (PCB) and dibenzofurans^[16] seem to increase the incidence of natal teeth. These children usually show other associated symptoms, such as dystrophic finger nails, hyperpigmentation, etc.^[15]

The most acceptable theory is based upon the result of a superficial localization of the dental follicles, probably related to a hereditary factor.^[1,12,17]

Natal teeth and neonatal teeth are frequently found associated with developmental abnormalities and recognized syndromes. These syndromes include Ellis-van Creveld (chondroectodermal dysplasia), pachyonychia congenita (Jadassohn-Lewandowsky), Hallerman-Streiff (oculo-mandibulo dyscephaly with hypotrichosis), Rubinstein-Taybi, steatocystoma multiplex, Pierre-Robin, cyclopia, Pallister-Hall, short rib-polydactyly type II, Wiedeman-Rautenstrauch (neonatal progeria), cleft lip and palate, Pfeiffer, ectodermal dysplasia, craniofacial dysostosis, multiple steacystoma, Sotos, adrenogenital, epidermolysis bullosa simplex including van der Woude and Walker-Warburg Syndromes.^[3,10,18-25]

Infants are generally brought to the dental clinic due to one of the following reasons:

- a. Potential risk of the infant inhaling the tooth into his/her airway and lungs if the tooth becomes dislodged during nursing, due to its great mobility.
- b. Ulceration to ventral surface of tongue. Coldarllin first described this condition in 1857. Riga and Fede histologically described the lesion, which was then started to be called Riga-Fede disease.^[4,26]
- c. Difficulty in feeding or refusal to feed due to pain.
- d. Ulceration to the nipple of the mother and interference with breast feeding. Hals, Zhu, and King; and Walter

et al. reported that there is no relationship between injury to mother's nipple and the presence of the natal teeth since the tongue is interposed between these teeth and the nipple during breastfeeding.^[4]

- e. Myth of bad omen or devil's incarnation.
- f. To know whether the tooth is part of the normal dentition or is supernumerary.^[4]

CLINICAL ASPECTS

Clinically, the natal teeth; are small, or of normal size, conical/ or of normal shape. They may reveal an immature appearance with enamel hypoplasia and small root formation. Natal teeth may exhibit a brown-yellowish/whitish opaque color. They are attached to a pad of soft tissue above the alveolar ridge, occasionally covered by mucosa and as a result have an exaggerated mobility, with the risk of being swallowed or aspirated, in most of the cases.^[1,13] Bigeard *et al.* revealed that the dimensions of the crown of these teeth are smaller than those for the primary teeth under normal conditions.

The literature reflects the association of natal teeth with reactive fibrous hyperplasia,^[9] congenital hydrocephalus associated with congenital glaucoma Walker Warburg syndrome,^[26] bilateral mandibular hamartomas,^[26] pyogenic granuloma,^[27] peripheral ossifying fibroma, eruption cyst,^[9] gingival fibrous hamartoma.^[28] Darwish *et al.*^[10] reported a case of natal teeth in association with bifid tongue and deaf mutism.

RADIOGRAPHIC FEATURES

The usual radiographic feature of the tooth consists of a hollow calcified cap of enamel and dentin without pulp tissue, rather like a celluloid crown in shape.

HISTOLOGIC FEATURES

First report on microscopic observation of natal and neonatal teeth was done by Howkins (1932). Histological investigations of natal teeth have been well detailed by Boyd and Miles.^[8]

The histological aspect shows a thin enamel layer, with varying degrees of mineralization, and/or hypoplastic to total absence of enamel in some regions. Friend *et al.* demonstrated that the alteration in amelogenesis was detected due to premature exposure of the tooth to the oral cavity, which resulted in metaplastic alteration of the epithelium of the normally columnar enamel to a stratified squamous configuration.^[4]

Atubular osteodentin such as that observed in the occlusal central fossa is equivalent to the irregular tertiary dentin deposited in response to untoward stimuli such as caries or attrition.^[26] This suggests that odontoblasts in the central fossa were exposed to the oral environment before developing a

covering enamel and normal tubular dentin, and responded by depositing the atubular substance. The dentin may show alterations with atypical disposition of dentinal tubules chiefly in the cervical third; and occasionally of osteodentin, which is attributed to stimulation by movement of the teeth. It has been further postulated that the mobility may cause degeneration of Hertwigs sheath, thus preventing root development and stabilization.^[4,13,25] The usually increased mobility causes histological changes in the cervical dentin and cementum.^[12]

The pulp cavity and the radicular canals are wider, although the pulp shows normal development.^[13] Weil's zone and cell-rich zone are missing.^[8] Absence of root formation, lack of cementum formation, large pulpal chamber, an irregular dentin formation were also observed.

In the polarized light and micro-radiographic studies, these teeth showed enamel hypoplasia and dentinal disturbances including the formation of osteodentin and irregular dentin in the cervical portions and interglobular dentin in the coronal region.^[18]

Natal teeth with no enamel formation are extremely rare; there has been only one case reported, in which cartilage-like teeth erupted prematurely at birth.^[25]

DIAGNOSIS

The diagnosis of these teeth is done based on a complete history, physical examination of the infant, and by clinical and radiographic findings to rule out them being part of normal dentition or supernumerary — so that no indiscriminate extractions would be performed. A proper examination can reveal a relationship between a natal/neonatal tooth and adjacent structures, nearby teeth; and presence or absence of a tooth germ in the primary dentition would determine whether or not later belongs to normal dentition. Investigators have observed that most of these teeth are primary teeth of normal dentition and not supernumerary teeth. According to the citations, diagnosis is important to plan treatment, keeping in view the maintaining of the normal dental occlusion.^[4]

TREATMENT AND MANAGEMENT

If the natal or neonatal tooth is of primary dentition, then evaluation of eruption and space maintenance would be required.^[29] Neighboring deciduous teeth may drift towards site of extracted natal/neonatal tooth on eruption. Despite this, it is widely accepted that space loss and anterior crowding in the permanent dentition are not a sequelae of extraction of deciduous incisor teeth. If extraction is carried out, it is necessary to ensure that the underlying dental papilla and Hertwigs epithelial root sheath are removed by gentle curettage as root development can continue if these structures are left *in situ*.

Many of these teeth show evidence of hypomineralization, and there is limited surface of enamel for bonding of resin. These factors, combined with difficulty of access, adequate moisture control, and etching of enamel surface, mean that achieving adequate retention of the resin could be questionable. Should the restoration fail, the composite resin could also be swallowed or inhaled! Both of these treatment regimes present practical difficulties considering the age of the children involved.^[30]

Removal of natal teeth is indicated when they are poorly developed, interfere with feeding, highly mobile, and associated with soft tissue growth. Prophylactic administration of vitamin K (0.5–1.0 mg, i.m.) is advocated because of the risk of hemorrhage as the commensal flora of the intestine might not have been established until the child is 10 days old, and since vitamin K is essential for the production of prothrombin in the liver.

The ulcerations caused by the natal teeth could be managed by rounding of the incisal edges of the teeth.^[13] Treatment of this ulcerative lesion (Riga Fede disease) has varied over the years. Early treatment consisted of excision of the lesion. Allwright advocated maintaining the neonatal tooth by smoothening of incisal edge with an abrasive instrument. In cases of mild-to-moderate irritation to the tongue, such treatment may suffice. If the ulcerated area is large and denuded, however, even the reduced incisal edge may still contact and traumatize the tongue during suckling to an extent enough to delay healing.^[29]

DISCUSSION

A few babies are born with one or two teeth (known as natal teeth) already visible in the gum. It is necessary to investigate the possible local or systemic factors that could be related to the eruption of natal teeth, their association with other pathologies, and the basis of differential diagnosis, in order to promote a better oral condition. Teeth which have good support do not need to be removed, since experience has shown that these elements will probably compound the deciduous dentition. It is also important to consider that natal teeth are not the only oral alteration that can be observed in neonates, remembering other lesions such as cysts and developmental disturbances. A complete oral examination is recommended in newborns, in order to establish the differential diagnosis.^[1,31]

The strong predilection for the lower central incisors is not surprising in view of the fact that they are normally the first teeth to erupt. The timing of eruption is not nearly as important as their degree of maturity. A mature natal tooth has better prognosis than an immature tooth.^[3]

The reason usually given for eruption of teeth during perinatal period is superior placement of the tooth germ; but in most cases, specific pathogenetic factors cannot be identified.^[25] In the present case, no underlying cause for the natal tooth was

apparent; but it could be because of the superior placement of the tooth germ. There was no hereditary influence, and periodic follow-up for one year disclosed no other defects.

If the natal teeth are loose, they should be removed shortly after birth while the newborn infant is still in the hospital. The possibility of aspirating or ingesting natal teeth is reported to be a reason for extraction of mobile teeth.

Teeth that are stable beyond four months have a good prognosis. Esthetically, they are not pleasing due to the discoloration.^[12] Pediatric dentists should make every effort to educate parents and the medical community on the preferred treatment for natal teeth. If extraction of a natal tooth is indicated, then it should be performed by a dentist to avoid unnecessary trauma to the area.^[27] Periodic follow-up by a pediatric dentist to ensure preventive oral health care is very essential. Hence to avoid any complication, early diagnosis and adequate treatment should be of prime concern in the management of natal teeth.^[9]

Extraction of the natal tooth should be followed by the curettage of the socket to prevent continued development of the cells of the dental papilla as it would continue to grow resulting in eruption of tooth-like structures several months later, as reported by Ooshima *et al.*^[32] and Tsubone *et al.*^[33] Tsubone *et al.* termed it as 'residual natal tooth'.^[37] We did not observe any such alterations after a follow-up for one year.

Teething symptoms such as those seen with the eruption of other primary teeth (infantile diarrhea, drooling of saliva, malaise, etc.), though reported by Massler, Savara, and Spouge, were not seen in the present case report.^[6]

We conclude that infants with prematurely erupted teeth must be carefully examined for further treatment planning, and parent counseling to bring about awareness is also equally important. Longitudinal and more divergent studies are also necessary to confirm the etiology and nature of natal teeth and to determine whether they are deciduous or supernumerary teeth.

REFERENCES

- Goncalves FA, Birmani EG, Sugayai NN, Melo AM. Natal teeth: Review of literature and report of an unusual case. *Braz Dent J* 1998;9:53–6.
- da Silva CM, Ramos MM, Carrara CF, Dalben Gda S. Oral characteristics of Newborns. *J Dent Child (Chic)* 2008;75:4–6.
- Alvarez MP, Crespi PV, Shanske AL. Natal molars in Pfeiffer syndrome type 3: A case report. *J Clin Pediatr Dent* 1993;18:21–4.
- Anegundi RT, Sudha P, Kaveri H, Sadanand K. Natal and neonatal teeth: A report of four cases. *J Indian Soc Pedo Prev Dent* 2002;20:86–92.
- Rusmah M. Natal and neonatal teeth: A clinical and histological study. *J Clin Pediatr Dent* 1991;15:251–3.
- Chawla HS, Subba Reddy VV. A follow-up study of 25 cases of Natal/Neonatal teeth. *J Indian Soc Pedo Prev Dent* 1988;6:57–61.
- Barfiwala DR. Natal and neonatal teeth: A review of 50 cases. *J Indian Soc Pedo Prev Dent* 1996;14:21–3.
- Anderson RA. Natal and neonatal teeth: Histologic investigation of two black females. *ASDC J Dent Child* 1982;49:300–3.
- Singh S, Subbba Reddy VV, Dhananjaya G, Patil R. Reactive fibrous hyperplasia associated with a natal tooth: A case report. *J Indian Soc Pedo Prev Dent* 2004;22:183–6.
- Darwish S, Sastry RH, Ruprecht A. Natal teeth, bifid tongue and deaf mutism. *J Oral Med* 1987;42:49–53.
- Sureshkumar R, McAulay AH. Natal neonatal teeth. *Arch Dis Child Fetal Neonatal* 2002;87:F227.
- Available from: <http://www.newdao.com/natal-teeth-baby-born.html>. [last updated on 2007 Nov. 9]
- Delbem AC, Faraco Junior IM, Percinoto C, Delbem AC. Natal teeth: Case report. *J Clin Pediatr Dent* 1996;20:325–7.
- El Khatib K, Abouchadi A, Nassih M, Rzin A, Jidal B, Danino A, *et al.* Natal teeth: Study of five cases. *Rev Stomatol Chir Maxillofac* 2005;106:325–7.
- McDonald RD, Avery DR, Dean JA. *Dentistry for the Child and Adolescent*. 8th ed. Missouri: Mosby; 2004.
- Alaluusua S, Kiviranta H, Leppäniemi A, Hölttä P, Lukinmaa PL, Lope L, *et al.* Natal and neonatal teeth in relation to environmental toxicants. *Pediatr Res* 2002;52:652–5.
- Portela MB, Damasceno L, Primo LG. Unusual case of multiple natal teeth. *J Clin Pediatr Dent* 2004;29:37–9.
- Uzamis M, Olmez S, Ozturk H, Celik H. Clinical and ultrastructural study of natal and neonatal teeth. *J Clin Pediatr Dent* 1999;23:173–7.
- Mandal AK, Hornby SJ, Jones RB. Congenital hydrocephalus associated with congenital glaucoma and natal teeth. *Indian J Ophthalmol* 2002;50:322–3.
- Rao BB, Mamatha GR, Jameera KM, Hegde RB. Natal and neonatal teeth: A case report. *J Indian Soc Pedo Prev Dent* 2001;19:110–2.
- Hersh JH, Verdi GD. Natal teeth in monozygotic twins with vander Woude Syndrome. *Cleft Palate Craniofac J* 1992;29:279–81.
- Leachman SA, Kaspar RL, Fleckman P, Florell SR, Smith FJ, McLean WH, *et al.* Clinical and pathological features of Pachonychia Congenita. *J Investig Dermatol Symp Proc* 2005;10:3–17.
- Mandal AK, Hornby SJ, Jones RB. Congenital hydrocephalus associated with congenital glaucoma and natal teeth. *Indian J Ophthalmol* 2002;50:322–3.
- Ziai MN, Bock DJ, Da Silveira A, Daw JL. Natal teeth: A potential impediment to nasoalveolar molding in infants with cleft lip and palate. *J Craniofac Surg* 2005;16:262–6.
- Masatomi Y, Abe K, Ooshima T. Unusual multiple natal teeth: Case report. *Pediatr Dent* 1991;13:170–2.
- Sigal MJ, Mock D, Weinberg S. Bilateral mandibular hamartomas and familial natal teeth. *Oral Surg Oral Med Oral Pathol* 1988;65:731–5.
- Muench MG, Layton S, Wright JM. Pyogenic granuloma associated with a natal tooth: Case report. *Pediatr Dent* 1992;14:265–7.
- Oliveira LB, Tamay TK, Wanderley MT, Rodrigues RM, Barboza CA, de Souza SO. Gingival fibrous hamartoma associated with natal teeth. *J Clin Pediatr Dent* 2005;29:249–52.
- Goho C. Neonatal sublingual traumatic ulceration (Riga-

- Fede disease): Reports of cases. *ASDC J Dent Child* 1996;63:362–4.
30. Buchanan S, Jenkins CR. Riga-Fede syndrome: Natal or neonatal teeth associated with tongue ulceration: Case report. *Aust Dent J* 1997;42:225–7.
31. Nik-Hussain NN. Natal and neonatal teeth. *J Pedod* 1990; 14:110–2.
32. Ooshima T, Mihara J, Saito T, Sobue S. Eruption of toothlike structure following the exfoliation of natal tooth: Report of a case. *ASDC J Dent Child* 1986;53:275–8.
33. Tsubone H, Onishi T, Hayashibara T, Sobue S, Ooshima T. Clinico-pathological aspects of a residual natal tooth: A case report. *J Oral Pathol Med* 2002;31:239–41.

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