

Surgical Treatment of Natal Teeth from Standpoint of Haemorrhage Control, Infection Prevention and Application on Anaesthetics



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Mini Review

Most babies, new-borns, get their first tooth between 5 and 8 months of age. The first teeth that poke through the gums are the central incisors, which are located on the bottom front. While most infants get their first teeth months after birth, some babies are born with one or more teeth. These are called natal teeth. Natal teeth are relatively rare [1]. Most studies however give an incidence between 1 in 2000 to 1 in 3500 live births. The incidence probably varies between different racial groups, with some American Indian tribes reported to commonly present with natal teeth. Statistical significance between regions is yet to be shown. [2] Natal teeth are said to be three times more common than neonatal teeth [3]. The male to female ratio varies in different studies with some reporting a male predominance and others no difference or a female predominance. Natal and neonatal teeth are rarely seen in very premature babies [1]. There appears to be an inherited tendency to developing natal teeth with up to 60% of cases reporting a positive family history with an autosomal dominant pattern, meaning about half the children of an affected individual are affected [4]. Natal teeth are associated with cleft lip/palate: 10% of children with bilateral cleft lip/palate have natal teeth and 2% of unilateral cleft lip/palate have natal teeth. Cleft lip/palate can be a feature of a number of syndromes in which natal teeth have also been reported:

- a) Meckel-Gruber syndrome (MIM249000).
- b) Pierre Robin sequence (MIM261800).

Syndromes in which natal teeth are a recognized feature:

- c) Ellis-van Creveld syndrome (chondroectodermal dysplasia, MIM225500).
- d) Jackson-Lawler (pachyonychia congenita 2, MIM167210).
- e) Steatocystoma multiplex with natal teeth (MIM184510).

f) Hallerman-Streiff (oculomandibulofacial syndrome with hypotrichosis, MIM234100).

There have been many single case reports of natal or neonatal teeth occurring in association with other syndromes. These probably do not represent a true feature of the syndrome [5].

Maternal factors reported to be associated with an increased risk of natal teeth:

- g) Babies born to mothers exposed to high levels of polychlorinated biphenyls and dibenzofurans during the Yusheng environmental accident in Taiwan were found to have a 10% risk of natal teeth [6].
- h) Infection and febrile states.
- i) Malnutrition including hypovitaminosis.
- j) Trauma.

Extraction was considered in this case as the tooth is: [7]

- k) Supernumerary.
- l) Very loose.
- m) Because of interference with the nasoalveolar molding appliance.

Extraction (or spontaneous loss) can be complicated by the development of 'residual neonatal teeth', said to occur in approximately 9% and necessitating a second surgical procedure. Vitamin K is an important coagulation factor and it is found to be deficient in newborns. This deficiency state arises due to endogenous factors like insufficient bacterial colonization and exogenous factors such as low concentration of vitamin K in breast milk and poor placental transport [8]. Low levels of Vitamin K in

neonates is known to cause vitamin K deficiency bleeding (VKDB), therefore 0.5 mg (birth weight 1500 g or less) or 1 mg (birth weight greater than 1500 g) of vitamin K is the recommended dosage administered intramuscularly to all newborns within the first 6 hours after birth for initial stabilization [9] as approved by the Canadian paediatric Society [10]. No antibiotic coverage was suggested prior to the extraction if the child was on breast milk. Human breast milk is a reservoir of nutrients and biologically active compounds.

The most recognized immune protective components in human breast milk are immunoglobulins, IgA being present in large quantities followed by IgM and IgG. IgA provides protection against infection by blocking the contact of the pathogen with the intestinal epithelial layers and entrapping the pathogen within the mucin layers. Immune cells in the breast milk produce cytokines such as transforming growth factor beta (TGF β), interleukin 1 (IL1) and interleukin 13 (IL13) which help in suppressing inflammation [11]. For newborns, the amount of L.A to be administered is calculated based on the child's body weight, medical history, duration of the dental procedure, need for haemorrhage control, it should comply with the American Academy of Pediatric Dentistry (AAPD) recommendations and never exceed the maximum total dosage. The recommended dosage is 7 mg/Kg body weight for pediatric patients, in the present case the child weighed 2.5 kg, therefore a total of 1.5 ml of L.A (2% lidocaine with adrenaline 1:100,000) was administered as infiltration. Literature studies state that a mandibular buccal infiltration is as effective as an inferior alveolar nerve block according to Clinical guidelines [12].

Conclusion

Natal teeth can seem strange thing, but there are certain conditions that can increase the chances of babies being born with teeth. These teeth may be seen in babies with a cleft palate or lip. Babies who are born with irregularities in dentin (the calcified tissues that help form teeth) may also have natal teeth. According to the published reports, neonatal teeth are even rarer than natal teeth. In other words, the baby has a higher chance (though rare) of being born with teeth than getting teeth a few weeks after birth. Though commonly managed by extraction, Conservative management if preferred, options include:

- grinding/smoothing sharp edges of the tooth
- composite resin to form a dome shape over the edge of the tooth so the tongue glides over the tooth
- protective Stomahesive wafers/rings
- changes in feeding technique
- dental hygiene including topical fluoride application

The best line of management is decided by the Pediatric dentist according to the clinical situations..

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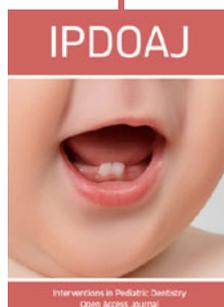
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