

Clinical case

Residual Natal Teeth. Review of the Literature and Report of a Rare Case

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Abstract

Introduction: Natal teeth are defined as dental organs present at birth in the oral cavity of infants; while neonatal teeth are those that erupt within the first thirty days of extrauterine life. There are protocols for the treatment of these dental organs, which aim to monitor correct feeding and avoid the formation of traumatic ulceration (Riga-Fede), as well as the possibility of the poorly implanted tooth being subject to swallowing or bronchoaspiration. **Objective:** to describe the clinical case of the development of a residual natal tooth (RNT) following extraction of natal teeth and a review of the literature on the most relevant aspects of natal teeth, neonatal teeth and the development of residual natal teeth. **Case presentation:** A 2-month-old male patient who developed an RNT after the indicated extraction following luxation of his natal teeth. Hopefully, this case will serve to warn general dentists and specialists who decide to extract a natal or neonatal tooth about the possibility of the remaining post-extraction tissue calcifying and forming an RNT.

Conclusions: a correct evaluation is necessary to prevent the development of an RNT and it is important that the subject is addressed in the educational programmes of universities.

Keywords: natal tooth, neonatal tooth, residual natal tooth

INTRODUCTION

Natal teeth are defined as dental organs present at birth in the oral cavity of infants, while neonatal teeth are those that erupt within the first thirty days of extrauterine life¹.

Another classification proposed by Spouge and Feasby (1966)² suggests that these teeth could be classified according to their degree of maturity (according to the amount of root, amount of enamel), with a mature natal or neonatal tooth being one that has normal development and has a relatively good prognosis; and the term immature for a natal or neonatal tooth implying defective development with a poor prognosis in terms of retention in the oral cavity.

The appearance of natal or neonatal teeth can be classified into one of the following four categories:

1. The crown of the tooth structure is weakly attached to the alveolus by a ring of gingival tissue, without root.
2. Solid crown weakly attached to the alveolus by buccal mucosa, small or no root.
3. The incisal edge of the crown erupted through the buccal mucosa.
4. Swollen buccal mucosa with unerupted but palpable tooth.

In 2002 Tsubone³ introduced the term residual natal tooth (RNT), which he described as the formation of dental hard tissue after the loss of the coronal part of natal and neonatal teeth. The prevalence of natal and neonatal teeth varies according to different studies and has been described within a population range of 1:716-1:30000⁴⁻⁷. There has been only one published report indicating the frequency of residual teeth development after the loss of natal and neonatal teeth. In 1989, King and Lee⁵ studied 44 infants with natal and neonatal teeth, of whom 9.1% developed residual teeth followed by extraction or exfoliation of those teeth. Despite the small size of the study group, these results provide a rough estimate of the prevalence of residual natal and neonatal tooth development at 9.1%; however, most are not recorded because of the fragility and loss of residual tissue.

The most commonly affected teeth are the lower central incisors (85%), followed by upper incisors (11%), lower canines and molars (3%) and upper canines and molars (1%), 38-76% of natal and neonatal teeth appear in pairs and are part of the normal primary dentition formula, and only 1-10% are supernumerary teeth^{1, 6-8}. The aetiology is unknown, some of the factors generally attributed to these are a superficial position of the developing tooth germs, which predisposes to premature eruption; hereditary patterns of autosomal dominant genes, febrile states, infectious states, malnutrition, premature births, association with genetic syndromes and systemic conditions⁸⁻¹⁰.

Residual natal and neonatal teeth are attributed to the presence of remnants of the underlying tissues of the dental papilla, following extraction of natal or neonatal teeth, which remain vital and maintain their ability to form hard tissues¹¹⁻¹⁵. The management of these

teeth depends on multiple factors^{6-8, 16} (Figure 1) to consider when making treatment decisions such as:

- Degree of mobility and implantation.
- Proper suction/swallowing complex.
- Interference during breastfeeding.
- Supernumerary tooth or part of the dentition.

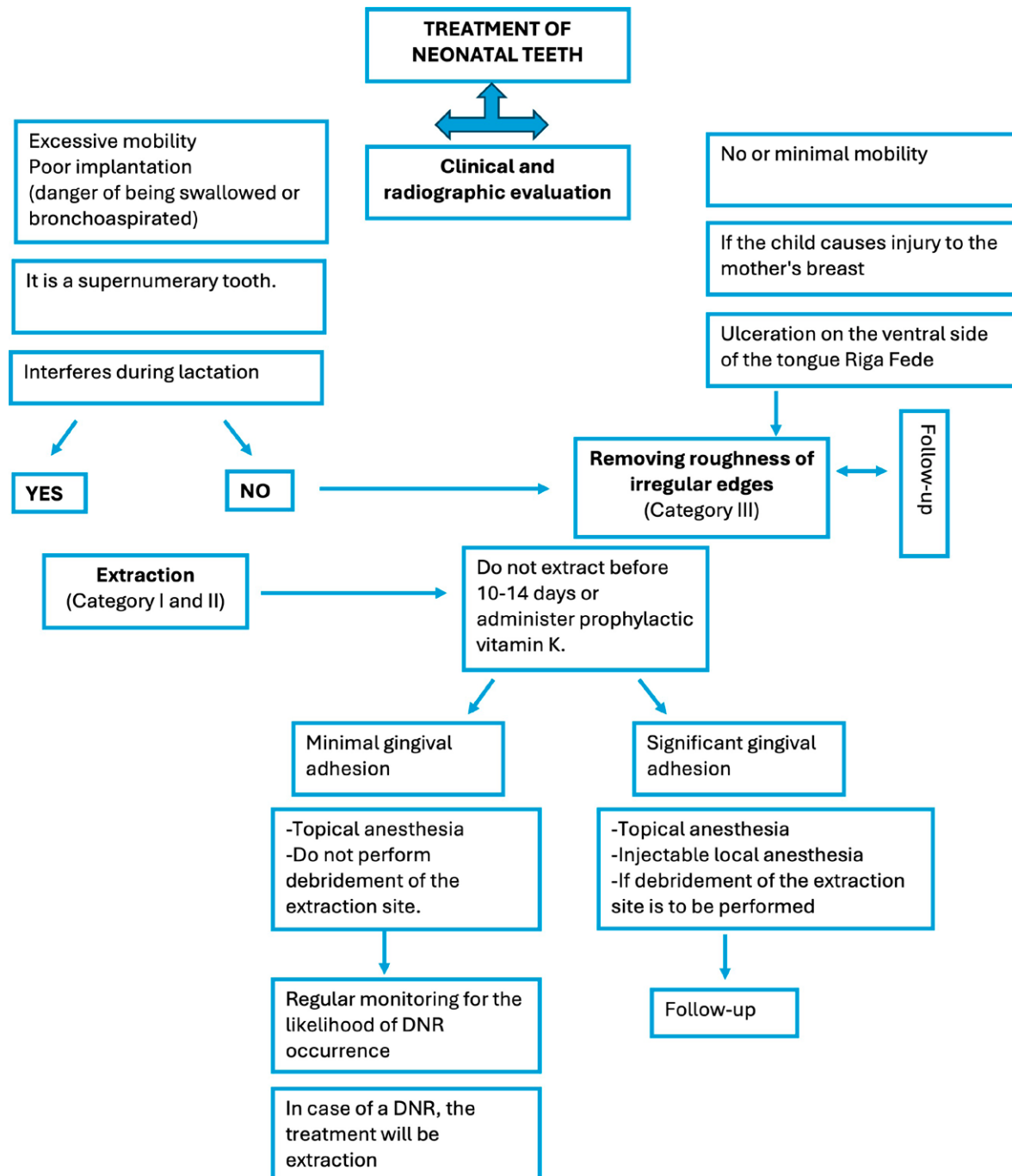


Figure 1. Clinical treatment pathway

Natal and neonatal teeth with category 1 and 2 should alert us to tooth detachment and its possible aspiration, which is why all authors^{6-9,16} agree on the need for extraction of these teeth. If teeth are to be extracted, it is advisable to wait until the nursing infant is at least 10-14 days old, so that vitamin K can be produced, or if the procedure is required before this time, prophylactic vitamin K can be administered^{4, 6, 8-10}. The extraction of this type of tooth does not present any difficulty at first, due to the poor development of the cells of the dental papilla and Hertwing's sheath, these are easily detached together with the calcified part of the tooth; however, if these cells remain in the alveolus, they can continue their development and structure formation. This occurs in 9.1% of children and in some children alveolar abscesses are possible. Therefore, extraction of a natal or neonatal tooth must be followed by adequate removal of the remaining tissue to prevent future development of the cells of the dental papilla^{3, 4, 6, 11-13, 15, 17}. The third category describes teeth whose incisal edges have erupted into the oral cavity; this may cause difficulties for breastfeeding due to the injuries that the child may cause to the mother and those that the child may cause to him/herself. The lesion that frequently occurs is ulceration of the ventral side of the tongue, the "Riga Fede disease", which can interfere with feeding and result in malnutrition of the child¹⁸⁻²⁰. The treatment of choice for this ulcer includes smoothing the rough incisal edges^{8, 9, 16, 20}.

The purpose of this article is to describe a clinical case of residual natal tooth eruption following extraction of natal teeth and a review of the literature on the most relevant aspects of natal and neonatal teeth and, residual natal tooth emergence.

CLINICAL CASE PRESENTATION

A 2-month-old male patient, with no personal or heredofamilial history of relevance to the current condition, who attended the Stomatology service of the National Institute of Paediatrics (Estomatología, Instituto Nacional de Pediatría) for assessment due to the presence of teeth since birth. The mother reports that the child was born with two teeth on the "bottom", which hurt her breast, preventing breastfeeding, and she also noticed that they moved a lot, which caused her anxiety for fear that they would fall out.

The intraoral examination revealed the presence of two teeth, located in the anteroinferior region, with the entire clinical crown erupted, yellowish-white in colour, with the appearance of enamel hypomineralisation, which showed rotation, surrounded by a violet-red, edematous gingiva, with severe mobility (classification 1 of natal teeth).

A dentoalveolar radiograph was taken, which confirmed that these teeth were not supernumerary (Figure 2A) and corresponded to the formula of the primary dentition (71 and 81), which did not show root formation. It was explained to the mother that these were natal teeth and that due to their mobility and the difficulty in breastfeeding, they should be extracted. With written consent from the mother and confirmation that the infant had received prophylactic doses of vitamin K at birth, extraction was initiated. Lidocaine with 2% epinephrine was infiltrated and the extractions of teeth 71 and 81 were performed (Figure 2B), haemostasis was confirmed and postoperative instructions were given. One week later, the patient was presented for examination (Figure 2C), and adequate healing was observed with no evidence of infection; only traces of milk were observed, and hygiene instructions were given.

Three months later, the mother returned to the consultation with the child, stating that "one of the teeth that had been removed is coming out again", with no painful symptoms. The patient was examined and an elevation in the gum was observed (Figure 2D), corresponding to

the area where tooth 71 had previously been extracted. Subsequently a dentoalveolar radiograph was taken, which showed the formation of a tooth-like structure in the space occupied by tooth 71 (Figure 2E), as well as the tooth germs corresponding to the temporary laterals and the absence of tooth 81.

A residual natal tooth (RNT) was found to be present at the site of 71, so an appointment was scheduled in three weeks to assess extraction; the child's mother attended the scheduled appointment, where she reported that the tooth had erupted and looked small and yellow in colour, and that later, when she was feeding him, she noticed that it was no longer there. It appears that the RNT avulsed spontaneously due to the shallow position of the tooth.

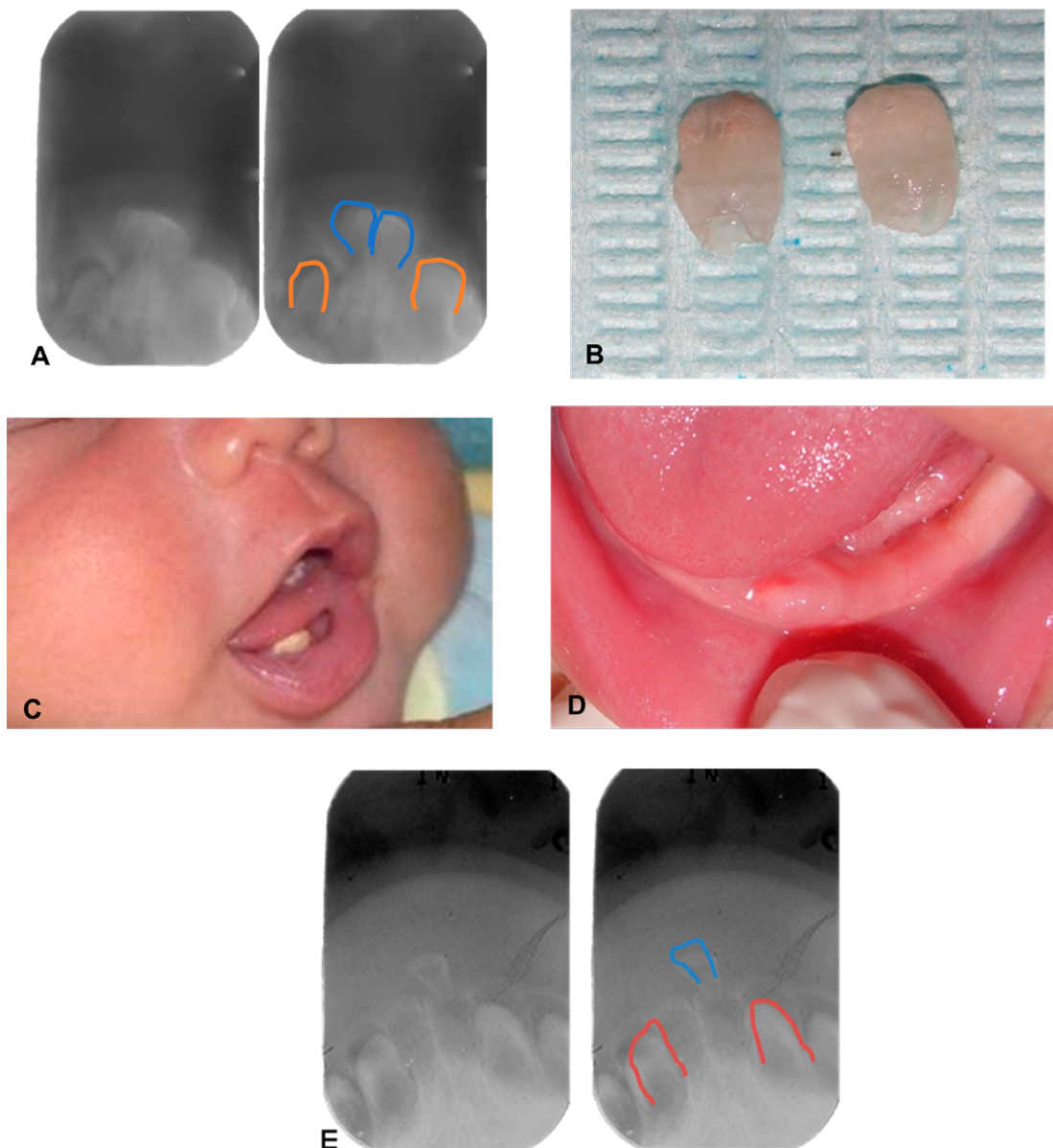


Figure 2. Clinical procedure. A. Dentoalveolar radiography, showing the natal teeth, right image 71 and 81 (blue), 72 and 82 (red). B. Teeth 71 and 81 without root presence, after extraction. C. Evolution after the surgical procedure, with the presence of milk residue. D. Increased volume in the lower alveolar ridge. E. Dentoalveolar radiograph, showing an RNT, right image 71 (blue), 72 and 82 (red).

DISCUSSION

There are several reports: Tsubone *et al.*³, Dymment *et al.*⁴, Zhu *et al.*⁶, Ryba *et al.*¹¹, Southam *et al.*¹², Nedley *et al.*¹³, Ooshima *et al.*¹⁴ and Berendsen *et al.*¹⁵, on cases describing the appearance, a few months after the extraction of natal teeth, in the area of the dental arch where the teeth were located, of small dental structures possibly corresponding to remnants of the dental lamina that have remained after extraction and have continued their odontogenic mission. This coincides with what happened with the patient described in the clinical case, who, three months after the indicated extractions of his natal teeth, developed a residual natal tooth.

The case is in agreement with that described by the majority of authors: Spouge *et al.*², King *et al.*⁵, Zhu *et al.*⁶, De la Teja *et al.*⁸ and Anegundi *et al.*¹⁰, in relation to the fact that the natal teeth most frequently present are the mandibular central incisors (85%), and that 90% of the cases of natal or neonatal teeth usually belong to the formula of the primary dentition, and are not supernumerary.

In relation to the management of the natal teeth, this is in line with the literature reported by Tsubone *et al.*³, Dymment *et al.*⁴, Zhu *et al.*⁶, Chicurel *et al.*⁷, De la Teja *et al.*⁸, Kana *et al.*¹⁶ and Cunha *et al.*²⁰, where there is luxation of the teeth and consequently excessive mobility, as well as discomfort or pain for the mother during lactation and/or no root formation, hence the decision to carry out extractions.

CONCLUSIONS

In case extractions are indicated in children less than 14 days of age, vitamin K should be administered. Also, if extraction of natal or neonatal teeth is required, the degree of mobility as well as the amount of epithelial attachment should be taken into consideration to determine the type of anaesthetic required. On the other hand, when there is minimal gingival attachment it is recommended to use topical anaesthesia and not to perform mechanical debridement of the extraction site, and in all cases to follow up regularly, because of the possibility of residual natal teeth. For the extraction of natal or neonatal teeth where epithelial attachment is more significant, topical anaesthesia is recommended followed by a small amount of injectable local anaesthesia and debridement of the area is indicated to avoid the formation of an RNT.

In university educational programmes on benign pathology of the newborn, the topic of natal and neonatal teeth should include the topic of residual natal teeth due to the possibility of these being present and not being confused with other pathologies.

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