

A Combined Case of Neonatal Teeth, Bohn's Nodules and Eruption Haematoma in an Infant Presenting as a Diagnostic Dilemma

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ABSTRACT

Abnormalities in the oral cavity of infants are not uncommon, but most are innocuous and resolve with age in the absence of treatment. Some of the most prevalent oral findings are oral inclusion cysts, vascular lesions, natal and neonatal teeth. The American Academy of Paediatric Dentistry (AAPD) recognises that perinatal and infant oral health are the basics upon which preventive education and dental care must be built to enhance the opportunity for a child to have a lifetime free from preventable oral disease. This report describes the clinical presentation, diagnosis and suggestive management for a 32-day-old male child patient reported with neonatal teeth, Bohn's nodules and further at the age of 18 months, with eruption haematoma in the maxillary alveolar region. "Bohn's nodules" are keratin-filled cysts with prevalence of 47.4% with no gender predilection. Natal and neonatal teeth considered as critically important conditions as their presence can lead to numerous complications such as ulceration on the ventral surface of the tongue caused by the sharp incisal edge of the tooth and condition known as Riga-Fede disease or syndrome. "Eruption haematoma" is circumcoronal cystic cavity which contains blood usually associated with an erupting primary or permanent tooth which is in its soft tissue eruption phase. Therefore, a thorough clinical examination and knowledge of the various lesions is essential for precise diagnosis, management, as well as parental counselling.

Keywords: Dental abnormalities, Intraoral, Newborns, Oral lesions

CASE REPORT

A 32-day-old male infant reported to the Department of Paediatric and Preventive Dentistry, with a chief complaint of erupted teeth in the lower front tooth region which were causing discomfort to the mother while breastfeeding [Table/Fig-1a]. Parents gave a history of teeth eruption after seven days of birth.

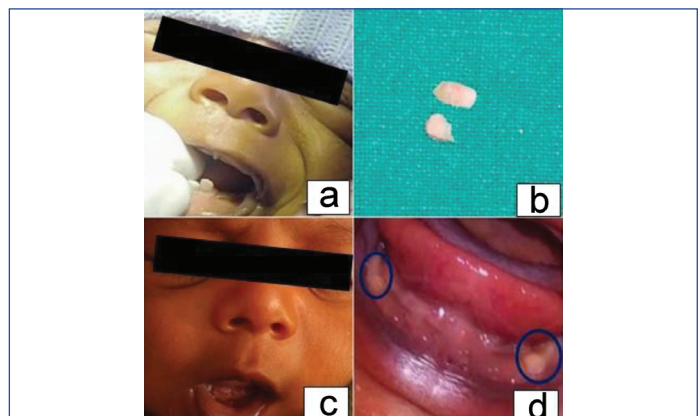
On intraoral examination, two teeth in the mandibular anterior region with grade 1 mobility were observed [Table/Fig-1a]. Based on clinical examination, diagnosis of neonatal teeth was confirmed. There was danger of aspiration and difficulty in breastfeeding, therefore, decision of extraction of neonatal teeth was made. Vitamin K was not administered as it was already given after 10 days of birth. After evaluating bleeding time and clotting time levels which were 3 ± 1 minutes and 10 minutes, respectively [1] followed by extraction of neonatal teeth [Table/Fig-1b] and uneventful healing was observed [Table/Fig-1c]. Syrup Ibugesic plus (200 mg/5 mL) was prescribed with dosage of 1 mL (BD*3 days) for pain.

On a one week follow-up visit, the parents complained of new teeth erupting in the lower right and left posterior alveolar ridge region. On examining, bilateral whitish nodules were observed [Table/Fig-1d]. They were firm on palpation, measuring upto 2 mm on the right-side and 5 mm on the left-side in the mandibular posterior region and were diagnosed as Bohn's nodules [Table/Fig-1d].

As Bohn's nodules are self-limiting in nature, therefore, no treatment was advised for the same. Parents were reassured to avoid unnecessary medical and surgical interventions. Normal physiological eruption of 81 at four months of age (where neonatal teeth were extracted in mandibular anterior region when child was of 32 days) was observed [Table/Fig-2].

The infant again reported at the age of 18 months with parents complaining of pain and swelling in upper left back tooth region. The patient had difficulty in chewing and experienced irritability since this swelling had occurred [Table/Fig-3a].

On intraoral examination, there was a bluish rounded swelling in the maxillary left posterior alveolar region that was translucent,



[Table/Fig-1]: a) Neonatal teeth in 32-day-old infant mandibular anterior region. b) Extracted neonatal teeth from mandibular anterior region in 32-day-old. c) Postoperative mandibular anterior region on follow-up. d) Bohn's nodules in mandibular right and left posterior region in 32-day-old.

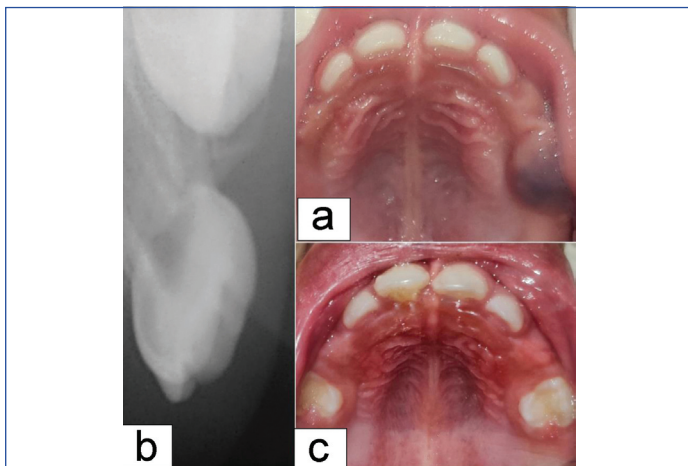


[Table/Fig-2]: Eruption of 81 at four months of age on subsequent follow-up visits.

dome-shaped, soft, and fluctuant lesion and measured approximately 1.5x2 cm. There was no prior history of infection or trauma in the concerned region. Based on the clinical findings, a provisional diagnosis of eruption cyst or eruption haematoma was suggested [Table/Fig-3a]. An intraoral periapical radiograph was recommended for the 64 region and it revealed a radiolucent area surrounding the erupting tooth [Table/Fig-3b]. As the examination showed a slight increase of volume in the alveolar mucosa, of bluish-red colour, in the region of the upper left deciduous molar, therefore, final diagnosis of eruption haematoma was achieved.

The clinical situation was described to the parents and they were guided to observe the swelling for another two weeks as it may rupture on its own and not require any intervention. Syrup Ibugesic plus (200 mg/5 mL) was prescribed with dosage of 1.5 mL (BD*3 days) for pain and advised gentle massage on the lesion.

On six months follow-up visit normal physiological eruption of 64 was observed [Table/Fig-3c].



[Table/Fig-3]: a) Eruption haematoma on Maxillary 64 region in 18-month-old; b) Periapical radiograph of 64 region showing eruption haematoma. c) Normal physiological eruption of 64 at follow-up visits.

DISCUSSION

Neonatal teeth erupt within the first month of life and natal teeth existing at birth. These are accompanied by several difficulties for both mother and the child, such as pain during breastfeeding and denial to suckle. The incidence of occurrence varies from 1:2,000 to 1:3,500 births [2]. Only 1-10% of natal and neonatal teeth are supernumerary teeth [3]. Even though the aetiology of this clinical condition is unknown, researchers have implicated various hypothetical causes such as infection (congenital syphilis), osteoblastic activity in the germ region, congenital syndromes, maternal exposure to environmental toxins [Polychlorinated Biphenyls (PCB) and dibenzofurans], febrile episodes during pregnancy and nutritional deficiency (hypovitaminosis) [4,5]. Another cause of this condition is thought to be endocrine disturbances in the mother's body due to excessive secretions of the pituitary, thyroid or gonad [5]. The most acceptable theory is the one postulated by Hals E in 1957, according to which presence of natal/neonatal teeth is due to superficial position of the tooth germ [6,7]. In the above mentioned case report, the neonatal teeth were in the mandibular incisor region and were categorised as supernumerary.

Bohn's nodules are smooth white cysts, commonly found in the buccal and lingual aspects of dental ridges that are filled with keratin and are true epithelial cysts containing acinar cells and ducts [8]. These need to be differentiated from natal teeth and Epstein's pearls which are more common in the centre of the alveolar ridge or along the mid-palatine raphe, respectively [9]. Bohn's nodules are assumed to arise from the cystic degeneration of the remnants of odontogenic epithelium or to be remnants of minor mucous salivary glands [10]. Literature states that they have occurred most commonly among Mexican newborns, where their frequency reached 70% of cases

and Indian newborns with the prevalence of 47.2% [10]. At the same time, another study among Indian children showed a very similar prevalence between Bohn's nodules (38.8%) and Epstein pearls (38.3%) [9]. Moreover, two Brazilian studies found Bohn's nodules in 26.3% cases [11]. Although the prevalence is high, these cysts are not often seen by the dentist or paediatrician because of the transient nature of these cysts, which fade within two weeks to five months of postnatal life [9].

In the present case report, the 32-day-old infant presented with various eruption abnormalities at different phases i.e., neonatal teeth in the mandibular anterior region [Table/Fig-1a], and Bohn's nodules in the mandibular posterior region [Table/Fig-1d] and later on eruption cyst on the region of 64 [Table/Fig-3a]. These findings of eruption abnormality in a single patient are hardly reported in literature. Whereas, Bodner L et al., found two cases of instances related to neonatal teeth out of twenty-two cases [12]. Muraleekrishnan M et al., presented a male infant with a congenital eruption cyst associated with natal teeth [13].

An eruption cyst is a soft tissue benign cyst associated with an erupting tooth. The lesion is called an eruption haematoma when the cystic cavity contains blood [14]. In context to eruption haematoma or cyst, some authors have found these similar to dentigerous cysts but others attribute their origin to degenerative changes of the reduced enamel epithelium after the end of amelogenesis or as remnants of the dental lamina [15]. Eruption haematoma can be challenging to differentiate from haemangioma, neonatal alveolar lymphangioma, and pyogenic granuloma [15]. Therefore, an intraoral periapical radiograph was taken for further confirmation of diagnosis showing half-moon radiolucency of cystic space and tooth in the soft tissue of the alveolar crest. As no bone association was seen the provisional diagnosis of dentigerous cyst was ruled out [14,15]. Majority of these cysts fade away on their own and generally do not require any treatment. If these are infected, may need surgical treatment to expose the tooth and drain the contents [16].

The AAPD recommends that the first dental visit should be by the age of 12 months. In developing countries, parents delay the establishment of dental homes for their children, seeking dental care only on occasions when children are in pain. When infants are referred to the dentist as early as 2-3 months of age for developmental anomalies, the dentist must grasp the opportunity to establish dental home for the infant [17]. This dental visit should not be focused on the treatment of natal or neonatal teeth, but as an opportunity to educate the parents about the oral hygiene measures and provide dietary recommendations. It is a good opportunity for counselling providing anticipatory guidance, and formulating a follow-up plan [18].

CONCLUSION(S)

Infant oral healthcare should be emphasised and implemented for new parents to seek adequate treatment with conservative approaches from paediatric dentists. While neonatal teeth are rare, their occurrence can result in sublingual ulceration (Riga-Fede disease). These oral conditions should be assessed properly and managed independently in order to come up with the best treatment option, apart from minimising the likelihood of a poor weight gain in the infant. Bohn's nodule and cyst is a common occurrence among newborns up until three months. Recognition of the lesion is essential to avoid unnecessary treatment since it is a condition that is self-limiting.

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