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RESEARCH ARTICLE

Neonatal Teeth: A Review Of Literature.

Dr. Gaurav Kumar Mittal, Dr. Ankit Chaudhari, Dr. Fehan Ahmed Khan, Dr. Basavaraja B, Dr. Ekta B Pansheriya, Dr. Sujata Kumari, Dr. Sorav Gupta, Dr. Hansika Pahuja, Dr. Ramphal Singh and Dr. Bhavna Tyagi.

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Abstract

Child development from conception during the first years of life has shown many changes. A chronological order is followed since the first teeth erupts in the oral cavity. These dates have been established in the literature and are subjected to small variations depending on hereditary, endocrine and environmental features. At times, however, the chronology of tooth eruption suffers a more significant alteration in terms of onset, and the first teeth may be present at birth or arise during the first month of life. The expectations about the eruption of the first teeth are great and even greater when the teeth appear early in the oral cavity.

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Introduction:-

Tooth eruption follows a chronology corresponding to the date when the tooth erupts into the oral cavity. This date has been established in the literature and is subject to small variations depending on hereditary, endocrine and environmental features. At times, however, the chronology of tooth eruption suffers a more significant alteration in terms of onset, with the possibility that the first teeth will be present at birth or arise during the first month of life. Several terms have been used in the literature to designate teeth that erupt before the normal time, such as congenital teeth, fetal teeth, predeciduous teeth, and dentitia praecox. According to the definition presented by Massler and Savara (1950), taking only the time of eruption as reference, natal teeth are those observable in the oral cavity at birth and neonatal teeth are those that erupt during the first 30 days of life. This definition has been accepted and utilized by most authors¹.

It has been suggested that early eruption of the deciduous dentition is a result of abnormal location of the developing tooth germ above the alveolar bone. Hals suggested that this is a result of hereditary influences. Histological studies have shown that despite normal structure of the enamel of natal and neonatal teeth, early eruption interrupts the mineralization process of enamel. Hence, the enamel has often been described as dysplastic or hypomineralized and is prone to wear and discoloration.

The majority of natal and neonatal teeth are early erupting teeth of the normal deciduous dentition, the incidence of supernumerary teeth has been reported as ranging from 1 to 10 per cent².

The presence of teeth at birth was considered a bad omen by the family of Chinese children, who believed that when these natal teeth would start to bite one of the parents would die. In England, the belief was that babies born with

teeth would grow to be famous soldiers, whereas in France and Italy the belief was that this condition would guarantee the conquest of the world.

The incidence of natal teeth is usually quoted in the range of 1:2000 to 1:3500 live births. Leung studied 50892 infants over 17 years and found the incidence of natal teeth to be 1:3392 live births. Kates, Needleman and Holmes carried out a study of the incidence of natal teeth in 18155 infants which showed an incidence of 1:716 live births. In both studies, all cases involved teeth in the mandibular incisor region³.

Prevalence:-

The prevalence of this phenomenon—reported in the literature is summarized in Table 1, and it is a somewhat rare event.

Table 1. Prevalence of Natal and Neonatal Teeth Reported in the Literature		
Authors	Prevalence	No. of children in the sample
Magitot, 1876	1:6000	17,578
Puech, 1876	1:30000	60,000
Ballantyne, 1897	1:6000	17,578
Massler & Savara, 1950	1:2000	6,000
Allwright, 1958	1:3408	6,817
Bodenhoff, 1959	1:3000	—
Wong, 1962	1:3000	—
Bodenhoff & Gorlin, 1963	1:3000	—
Mayhall, 1967	1:1125	90
Chow, 1980	1:2000 to 3500	—
Anderson, 1982	1:800	—
Kates et al., 1984	1:3667	7,155
Leung, 1986	1:3392	50,892
Bedi & Yan, 1990	1:1442	—
Rusmah, 1991	1:2325	9,600
To, 1991	1:1118	53,678
Almeida & Gomide, 1996	1:21.6	1,019

Etiology:

The presence of natal and neonatal teeth is definitely a disturbance of biological chronology whose etiology is still unknown.

It has been related to several factors, such as superficial position of the germ, infection or malnutrition, febrile states, eruption accelerated by febrile incidents or hormonal stimulation, hereditary transmission of a dominant autosomal gene, osteoblastic activity inside the germ area related to the remodeling phenomenon, and hypovitaminosis⁴.

Fauconnier and Gerardy (1953) presented an excellent discussion of the difference between “early eruption” and “premature eruption” in which they also proposed an etiology of natal and neonatal teeth. They considered “early eruption” to be that occurring because of changes in the endocrine system, whereas “premature eruption” would be a clearly pathological phenomenon with the formation of an incomplete rootless tooth that would exfoliate within a short period of time. This structure, designated “expulsive Capdepon follicle,” may result from trauma to the

alveolar margin during delivery, with the resulting ulcer acting as a route of infection up to the dental follicle through the gubernacular canal, causing premature loss of the tooth⁵.

Clinical characteristics:-

Morphologically, natal and neonatal teeth may be conical or may be of normal size and shape and opaque yellow-brownish in color. According to Bigeard et al (1966), the dimensions of the crown of these teeth are smaller than those obtained by Lautrou (1986) for primary teeth under normal conditions.

Spouge and Feasby(1966) recognized the need to classify these teeth. On the basis of clinical characteristics, these teeth were then classified into:

Mature—when they are fully developed in shape and comparable in morphology to the primary teeth.

immature—when their structure and development are incomplete. The term mature may suggest that the tooth is well-developed compared to the remainder of the primary dentition and that its prognosis is relatively good. In contrast, the term immature assumes the presence of an incomplete structure and implies a poorer prognosis for the tooth in question.

On the basis of literature data, Hebling(1997)recently classified natal teeth into 4 clinical categories:

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 gingival tissue.
4. Edema of gingival tissue with an unerupted but palpable tooth.



Figure 1:- Neonatal Teeth

Diagnosis:-

The importance of a correct diagnosis of natal and neonatal teeth has been pointed out by several investigators who used clinical and radiographic findings in order to determine whether these teeth belonged to the normal dentition or were supernumerary, so that no indiscriminate extractions would be performed. A radiographic verification of the relationship between a natal and/or neonatal tooth and adjacent structures, nearby teeth, and the presence or absence of a germ in the primary tooth area would determine whether or not the latter belongs to the normal dentition. It should be pointed out that most natal and neonatal teeth are primary teeth of the normal dentition and not supernumerary teeth. These teeth are usually located in the region of the lower incisors, are double in 61% of cases and correspond to teeth of the normal primary dentition in 95% of cases, while 5% are supernumerary. Ooshima et al (1986) emphasized that multiple natal teeth are extremely rare. However, some rare reports are available in the literature about the involvement of natal molars and canines. According to Bodenhoff and Gorlin (1963) 85% of the teeth involved are lower incisors, 11% are upper incisors, 3% are lower canines and molars, and only 1% are upper canines and molars. Tay(1970)reported a case of natal teeth in which a second upper molar and a lower canine were involved. Other oral manifestations that may be confused with the dental conditions in question are cysts of the dental lamina and Bohn nodules, both differentiated from natal and neonatal teeth by radiographic examination. According to the above citations, diagnosis is important for the maintenance of natal and neonatal teeth of the

normal dentition, since the premature loss of a primary tooth may cause a loss of space and collapse of the developing mandibular arch, with consequent malocclusion in permanent dentition⁶.

Complications:-

A major complication from natal/neonatal teeth is ulceration on the ventral surface of the tongue caused by the tooth's sharp incisal edge. This condition is also known as Riga- Fede disease or syndrome. Possibility of swallowing and aspiration which has already been described previously should also be one of the major concerns in complications. Other complications stated are injury to mother's breast and inconvenience during suckling. The consequences seen with the teeth include carious lesions, pulp polyp, or premature eruption of successor teeth.

Conclusion:-

Natal and neonatal teeth diagnosis requires detailed case history accompanied by thorough clinical and radiographic examination of the infant. It is important to rule out by radiographic examination whether they are components of normal dentition or supernumerary to decide the treatment plan. The clinician should also assess the risk of haemorrhage due to the hypoprothrombinemia commonly present in newborns⁷.

Treatment:-

Although many investigators have mentioned the possibility of aspiration of these teeth, this risk, in reality, is an unlikely possibility since there are no reports in the literature of the actual occurrence of aspiration. However, cases of spontaneous tooth exfoliation have been reported. On the basis of the report by the parents of a 28-day old baby of the sudden disappearance of a natal tooth, Bigeard et al (1996) suspected that this tooth was swallowed, a fact that indicates the possibility of aspiration. If the treatment option is extraction, this procedure should not pose any difficulties since these teeth can be removed with a forceps or even with the fingers. However, the cited author emphasized the precautions that should be taken when extracting natal and/or neonatal teeth: avoiding extraction up to the 10th day of life to prevent hemorrhage, assessing the need to administer vitamin K before extraction, considering the general health condition of the baby, avoiding unnecessary injury to the gingiva, and being alert to the risk of aspiration during removal⁸.

According to Rusmah (1991), tooth extraction is contraindicated in newborns because of the risk of hemorrhage. However, administration of vitamin K before the procedure permits safe extraction.

Berendsen and Wakkerman (1998) also mentioned the risk of hemorrhage in extractions performed before 10 days of life when vitamin K was not administered. Allwright (1958) reported the extraction of natal and neonatal teeth in 15 babies with no episode of hemorrhage even though no therapeutic precaution had been taken. However, all the extractions reported by the author were performed in babies older than 20 days⁹.

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