TRAUMATIC SUBLINGUAL ULCERATION IN A NEWBORN

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ABSTRACT

Natal and neonatal teeth are those which are present in the oral cavity at the time of birth and within thirty days of birth. They are likely to be associated with traumatic sublingual ulceration caused to the suckling as well as movements of the tongue. The treatment of choice is mostly conservative whenever possible. The purpose of this report is to present a case of traumatic sublingual ulceration in a twenty days old baby. The lesion resolved soon after the offending tooth was removed.

KEYWORDS: Natal teeth, Sublingual ulcer, Riga fede disease
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INTRODUCTION

Child development from conception through the first years of life is marked by many changes that occur within the body. The eruption of the tooth follows a chronology corresponding to the date when the tooth erupts into the oral cavity. In the normal sequence, the eruption of primary teeth begins at approximately six months of age. But rarely the teeth erupt at birth or within the first 30 days following birth, the former being referred to as 'Natal teeth' and the latter as 'Neonatal teeth'. Several terms have been used in the literature to designate premature eruption such as congenital teeth, fetal teeth, predecidual teeth, and dentitia praecox.[1]

The major complication from natal teeth is ulceration on the ventral surface of the tongue caused by the tooth's sharp incisal edge. Constant trauma may result in ulceration sufficient to interfere with proper suckling and feeding and put the neonate at risk for nutritional deficiencies. Traumatic sublingual ulceration in a new-born is referred to as Riga fede disease.

This article presents a case report of a 20 day old baby boy with traumatic ulceration on the lingual frenum and ventral tip of the tongue.

DESCRIPTION OF THE CASE

A 20 days old baby boy was referred to the Department of Pedodontics and Preventive Dentistry by his Pediatrician for management of a rapidly progressing ulcer in the undersurface of the tongue. The parents first observed a small firm white mass in the lower jaw in their child's mouth, when the child was about 1 week old. Two weeks later, a large whitish lesion was observed on the undersurface of the tongue. Moreover, the parents also observed that the child had discomfort during suckling, and did not nurse. The attending pediatrician attributed the infant's discomfort and irritability to the

traumatic ulcer and was hence referred to the Pediatric dental department.

On examination, an ulcer measuring about 12x12mm was observed in the ventral surface of the tongue extending from the anterior border of the tongue to the lingual frenum (Figure 1). Mucosa within the lesion had areas covered with yellow-gray, glistening exudate, and areas of erythematous mucosa without exudate. The examination of the rest of the intraoral mucosa revealed no other lesions.

Dental examination revealed the presence of two recently erupted tooth projecting 2 mm from the mandibular gum pad in the position where the primary central incisors were expected to erupt. The erupted tooth elicited Grade 2 mobility. The medical history of the patient was reviewed with the parents, and questions about specific symptoms were raised to exclude the presence of any underlying developmental disorder associated with sublingual traumatic ulcers, and the history was non-contributory. The weight and head circumference of the baby was within normal limits for his age.

Considering the age of the child, extent of the lesion, difficulty in nursing, the chances of secondary infection, and danger of aspiration of these teeth it was decided to extract them immediately without the prophylactic administration of vitamin K.

Extraction was carried out under topical anesthesia and careful curettage of the sockets was performed in an attempt to remove any odontogenic cellular remnants that might otherwise have been left in the extraction site (Figure 2 & 3). Postextraction hemostasis was achieved. Postoperative instructions were given and a recall visit after 1 week was scheduled for the baby.

DISCUSSION

Abnormalities related to odontogenesis such as natal teeth, dental lamina cysts, and eruption cysts could appear in the neonate's oral cavity.[2] These abnormalities are very alarming

Figure 1. Neonatal sublingual ulceration caused due to natal teeth

Figure 2. Natal teeth removal done

Figure 3. Extracted natal incisors with incomplete root formation

for parents and even for health care providers who are unaware of those deviations from normal development. The occurrence of natal teeth is considered a disturbance of the biological chronology of unclear etiology. Inheritance is the main etiological factor associated with this odontogenic related anomaly.[3]

It should be noted that about 95% of the natal and neonatal teeth are primary teeth of the normal dentition while only 5% were supernumerary teeth[4] which can be confirmed by radiographic examination.[5] These teeth are usually located in the mandibular incisor region[6,7] and about 61% of cases occur in pairs.[8,9] However, some rare reports are available in the literature about the involvement of natal molars and canines.[10]

Neonatal sublingual ulcerations caused by natal teeth were described by Antonio Riga and the first histologic studies by Francesco Fede, and hence the name Riga Fede disease.[11] Elzay has suggested the term 'traumatic ulcerative granuloma with stromal eosinophilia' (TUGSE) to describe the sublingual ulcerative traumatic lesions observed in both children and adults, due to the increased eosinophilic infiltration observed in the connective tissue beneath these lesions.[12] Meanwhile Goho preferred the term 'neonatal sublingual traumatic ulceration' (NSTU) to denote the sublingual lesions that occurred in neonates due to traumatic raking of the tongue over natal/neonatal teeth.[13]

Sublingual traumatic ulcers are a common finding in both children as well as adults. The infantile swallow in the neonate is closely associated with suckling, and both are well developed by about the 32nd week of intrauterine life and begin to cease with the eruption of the primary incisor teeth. Children achieve most features of the mature swallow by about 12–15 months of age.[14] Suckling and infantile swallowing are associated with the compulsive extension of the tongue beyond the gum pads which places the neonate at a high risk of encountering traumatic sublingual ulcers in the presence of a natal or neonatal tooth.

In some cases, Riga fede disease is associated with neurologic disorders. Domingues–Cruz et al. referred 'precocious Riga fede disease' as those associated with neonatal teeth in the first 6 months of life, where no relation with neurologic disorders was found, and 'late Riga Fede disease' as those instances which typically start after 6–8 months of life, usually due to the lower incisors which were associated with neurologic disease.[15]

Riga Fede disease begins as a small ulcerated area with prominent raised edges. With repeated trauma, it may progress to an enlarged, fibrous mass with the appearance of an ulcerative granuloma with superficial necrosis. In an infant, the pain associated with an ulcerated oral lesion results in dehydration, feeding difficulties, and failure to thrive. In a child with other medical concerns with the potential for infection can add on to the complications.[16]

As is the case for other traumatic lesions, the primary objective should be to eliminate the source of trauma so that healing can take place and it is accomplished in several ways. Unless the child is severely dehydrated or malnourished, it is always preferable to begin treatment conservatively. To achieve the best success, all of the factors contributing to the trauma should be addressed including the feeding pattern of the child. Any sharp edge of the teeth with the potential to cause trauma can be modified by smoothing the edges of the lower incisors with a finishing bur or by using a sandpaper disk. Alternatively, a small increment of the composite may be bonded to the incisal edges of the teeth but the problem is the stage of the eruption which might leave very little tooth available for bonding.[16]

Treatment with an ointment such as Kenalog in Orabase may be done to relieve symptoms and allows the child to nurse effortlessly. Buchanan and Jenkins reported a case of sublingual ulcer that was managed conservatively by covering the incisal edges of the neonatal teeth by stomahesive wafers.[17] However, the parent and patient compliance for such a procedure that involves the placement of a foreign object within the oral cavity throughout the day until the infantile swallowing pattern ceases is a point of the question. The feeding behavior of the infant also contributes to the trauma that causes this type of lesion. Accordingly, the parents can modify the feeding methods so that trauma to the tongue is reduced. Slayton et al. described a modification in the feeding method which involved using a bottle with a larger hole in the nipple or a sippy cup that required less vigorous sucking. Depending on the age of the infant, the parent can also attempt feeding by spoon to minimize trauma to the tongue.[16]

More often, the systemic status of the patient should be considered before exercising conservative treatment strategies. Neonates presenting with signs or symptoms of dehydration or complaints of lack of weight gain are better candidates for extraction, because of the definitive and rapid healing that can be expected in

these cases. Persistent dehydration or malnutrition during the neonatal period may adversely affect the physical and mental growth of the child.[18]

It is not necessary to remove the lesion itself, as it will normally resolve after the trauma is eliminated. However, if the lesion persists after the removal of teeth, an excisional biopsy should be performed. Riga Fede disease is microscopically characterized by an ulcerated mucosa with granulation tissue and a mixed inflammatory infiltrate consisting of lymphocytes, macrophages, mast cells and eosinophils.[19]

Restoration of breastfeeding should be the primary objective while treating a neonate with sublingual traumatic ulcers and the parents need to be motivated for the same. Parent counseling is an indispensable component for the management of neonatal traumatic sublingual ulcers. In those patients who were managed through extraction, long-term follow up may be required to evaluate the patients for space-related problems as well as abnormalities in the development of permanent successors in the future, even though rare.

CONCLUSION

Neonatal sublingual traumatic ulcerations are a reactive mucosal disease that results due to repetitive trauma on the tongue by the precociously erupted primary teeth during forward and backward movement. Early diagnosis of neonatal sublingual ulceration is imperative to ensure adequate treatment and prevention of children's malnutrition and dehydration. Parental counseling plays an important role in its management. Riga Fede disease can often be treated with conservative measures only.

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