IntroductIon
The normal eruption of the primary teeth begins typically at 6 months of age.\(^1\) Existence of teeth at birth or during the neonatal period is an unusual occurrence. This condition is also termed as predeciduous teeth, dentition precox, fetal teeth, natal/neonatal teeth, and congenital teeth. Natal teeth are present at birth, whereas neonatal teeth erupt during the 1\(^{st}\) month of life.\(^1\)

MaterIals and Methods
Of the 641 operated patients, records of 151 infants with cleft lip and palate with less than 3 months of age presented to the department of plastic and reconstructive surgery from 2005 to 2011 were reviewed. Out of which 107 were unilateral complete lip and palate (ULCP), 15 bilateral cleft lip and isolated cleft palate constituted 29. Results: Three patients among the studied records showed neonatal teeth. Two had paired central mandibular incisor teeth along with associated other anomalies and one had a single maxillary neonatal tooth. All were present in unilateral cleft lip and none of the bilateral or isolated cleft palate infants showed neonatal teeth. The overall incidence of neonatal teeth was 1.98% and 2.8% in unilateral Cleft lip. Conclusion: Our study supports the incidence of 2% natal teeth among UCLP. Involvement of mandibular central incisors in contrast to the notion that maxillary alveolus is more commonly affected suggest that it is not only the anatomical disturbance but also all those possible common multifactorial etiological factors contributing to the congenital anomalies as such. Natal/neonatal teeth are rather under-diagnosed and reported than a rare phenomenon and the prevalence is higher in certain population. Riga-Fede disease unlikely to be seen in clefts with neonatal teeth due to anatomical factors. The extraction of non mobile tooth if necessary can be done during the primary surgery for the cleft lip.

Key words: Congenital anomalies, natal teeth in cleft, natal teeth

INTRODUCTION
The normal eruption of the primary teeth begins typically at 6 months of age.\(^1\) Existence of teeth at birth or during the neonatal period is an unusual occurrence. This condition is also termed as predeciduous teeth, dentition precox, fetal teeth, natal/neonatal teeth, and congenital teeth. Natal teeth are present at birth, whereas neonatal teeth erupt during the 1\(^{st}\) month of life.\(^1\) The reported incidence ranges from 1:2,000 to 1:3,500 live births.\(^{2\text{-}4}\) Nevertheless, it is much higher in the cleft lip and palate neonates as reported in a single study.\(^5\) However, no further data is available exclusively from a cleft center with reference to the prevalence. Retrospective review of the presence of natal teeth among cleft lip and palate infants presenting to our institution was carried out. We discuss various aspects of the neonatal teeth with regard to the cause, location, appearance, management, and associated anomalies among cleft lip and palate.

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presented to the department of plastic and reconstructive surgery from 2005 to 2011 were reviewed. Out of which 107 were unilateral cleft lip and palate (ULCP), 15 bilateral cleft lip and isolated cleft palate constituted 29 patients. The demographic data, such as the age and gender, the type of cleft, the number and location of teeth, timing of eruption and extraction of teeth, clinical appearance and other associated anomalies was studied.

RESULTS

Three patients among the studied records showed neonatal teeth. Two had paired central mandibular incisor teeth along with associated other anomalies and one had a single maxillary neonatal tooth. All were present in unilateral cleft lip and none of the bilateral cleft lip or isolated cleft palate infants showed neonatal teeth. The overall incidence of neonatal teeth was 1.98% and 2.8% in unilateral cleft lip. The details are as follows.

CASE REPORTS

Case 1
A 4-week-old female infant presented with right sided complete cleft lip and palate with a pair of natal teeth in the lower central incisor region [Figure 1a]. As per the history, the erupted teeth were present at birth. The teeth appeared dark brown in color, firm, and nonmobile. Gingival hyperplasia was seen around the tooth. Rest of the oral cavity was unremarkable. In addition, the infant had duplication of the 5th toe of both the feet [Figure 1b]. The neonatal tooth was extracted at the time of cleft lip repair surgery.

Case 2
A 6-week-old male infant with left-sided complete cleft lip and palate presented with paired mandibular central incisor natal teeth [Figure 2a]. The teeth erupted within 2 weeks after the birth. They were yellowish white, nonmobile, and directed obliquely toward the cleft alveolus on the left side. Gingival hyperplasia was present. Feeding difficulties pertaining to the cleft but not specific to the presence of teeth were recorded. The elder sibling who accompanied the infant had incomplete cleft lip [Figure 2b], but there was no history of similar natal teeth in him. There was no history of consanguineous marriage or cleft among parents. Extraction of the natal teeth along with curettage of the dental papilla was carried out during the cleft lip repair surgery.

Case 3
An 8-week-old male infant with left-sided cleft lip and alveolus presented to us on a following day of extraction of the mobile natal tooth by a local dentist. Baby was born at full term out of nonconsanguineous marriage and had no birth anomalies. Parents noticed eruption of tooth 4th day, following the birth and progressive increase in the size of the tooth. The tooth was present on the prominent point of the medial cleft alveolar segment and caused repeated trauma due to outward projection. The tooth further became excessively mobile, which was easily “pulled out” by a local dentist when consulted. The child was referred to us for the management of cleft lip. Examination revealed left-sided cleft lip and alveolus without any associated anomalies. The medial cleft alveolar segment was prominent and showed postextraction socket surrounded by gingival hyperplasia [Figure 3a]. Extracted tooth was pale white showing soft tissue attachment mark differentiating crown without any root formation [Figure 3b].

DISCUSSION

Ever since the systematic description of the natal and neonatal teeth was published in 1950, numerous reports have described this condition, a well-known phenomenon. However, much higher incidence of 2.6% in Mexican neonates and 1% in Taiwanese newborns has been noted.[6,7] True incidence of natal teeth is difficult to determine as these teeth are either often missed or unreported. A careful evaluation and observation for
The extraction should be followed by while the abrasions of the Riga-Fede disease is hypomyelinating no. Both neonates with variations of early extraction of a tooth number in both primary and permanent dentition is seen among cleft children. Although no specific mention of the natal teeth was one in 716 in contrast to one in 3,667 for those surveyed.

Natal teeth have been reported to be associated with syndromes such as chondroectodermal dysplasia, craniofacial dysostosis, steacystoma multiplex, Sotos, Meckel-Gruber, and Pierre Robin syndrome. Hallermann-Streiff syndrome, hypomyelinating leukoencephalopathy 4H syndrome/ADHD, the Wiedemann-Rautenstrauch or neonatal progeroid syndrome, X-linked Opitz (G/BBB) syndrome, Down’s syndrome, and so on.

A high prevalence of natal/neonatal teeth among both unilateral (2.02%) and bilateral (10.06%) cleft lip and palate neonates, reported in a lone study of de Almeida and Gomide from Brazil. In their study, maxillary incisor region was the prevalent location in all neonates with complete bilateral cleft and 76.47% of UCLP. No further reports are available on the incidence of natal/neonatal teeth in cleft lip and palate newborns. In our series the overall incidence is 1.98% and 2.8% in unilateral cleft lip, which is similar to the observation of Brazilian study. However, two of our patients had paired lower mandibular incisors in addition to associated other anomalies. Number of anomalies of primary and permanent dentition is seen among cleft children. They include dental agenesis (anodontia), supernumerary, and crown morphologic abnormalities. Variations of tooth number in both primary and permanent dentition occur most often in the cleft area whereas such anomalies outside the cleft area were seen more in the permanent dentition. Although no specific mention of the natal teeth is seen in these studies; nevertheless, presence of supernumerary primary teeth may indicate natal teeth as about 10% of natal teeth are also supernumerary.

Most natal teeth among clefts are located in the lateral margin of the premaxillary and maxillary segments unlike in noncleft neonates, where lower primary central incisors are affected in over 85% of the time. This suggests anatomic alveolar disturbance with more superficial location of teeth in the region of the cleft. The strong predilection for the lower central incisors among noncleft neonates is consistent with the normal order of eruption of primary deciduous teeth. While one infant of our study had natal tooth in the cleft alveolus, other two had paired mandibular natal teeth erupted away from the region of cleft. This possibly suggest that the cause for higher natal teeth among clefts is not only the anatomical disturbance but also all those possible common multifactorial etiological factors contributing to the congenital anomalies as such. Both neonates with lower alveolar neonatal teeth had additional significant factors; an associated duplication of the toes in one and an affected sibling in another which further substantiate possibilities of associated genetic mutations, where a higher tooth anomalies are seen. Presence of neonatal teeth does not appear to influence primary or secondary dentition in clefts.

Possible complications that arise from the presence of natal teeth include discomfort during suckling, aspiration of the teeth, interference to retain presurgical orthodontic appliances in cleft babies, abrasions of the maternal nipple and lingual ulceration with refusal to feed (Riga-Fede disease). Riga-Fede disease is a reactive mucosal disease resulting from repetitive trauma of the tongue by the anterior primary teeth during forward and backward tongue movement. It is extremely rare but known to occur in natal teeth. However, we could not find such report among cleft lip and palate patients with or without neonatal teeth.

We believe the reasons for this are: (1) There is no direct contact with the tongue as mandibular natal teeth are rare, (2) even when they are present, the cleft upper alveolus provides additional space for the tongue to occupy thereby minimizing contact with teeth, (3) natal teeth among cleft are more commonly erupts in maxillary alveolus and are often directed away from the tongue which include primary and secondary dentition. The natal teeth are also likely to cause trauma to the hand especially during natural thumb sucking instinct of the baby and thereby resulting in spontaneous loosening of the tooth attachment.

Asymptomatic nonmobile tooth can be left alone. The extraction is generally indicated for supernumerary or excessively mobile tooth, which is at high risk of aspiration. The extraction should be followed by curettage of the socket to prevent continued development of cells of the dental papilla. Early extraction of a primary natal tooth, however, might lead to overcrowding of the permanent teeth due to space loss. While the
loose tooth can be extracted easily, general anesthesia may be needed for the nonmobile tooth, which can be extracted at the time of cleft lip repair surgery in cleft children.

**Conclusions**

True prevalence of natal teeth is higher in children with cleft lip and palate on account of both anatomical disturbances as well as multifactorial etiological factors. The high incidence of natal teeth (2%) in our cleft patient group is similar to the reported single study.[10] The involvement of mandibular central incisors in contrast to the notion that maxillary alveolus is more commonly affected suggests that, it is not only local anatomical disturbance that causes but also multifactorial etiological factors of congenital anomalies as well. Among noncleft children too, the prevalence is seen higher in certain populations. Natal/neonatal teeth are rather underdiagnosed and reported than a rare phenomenon. The extraction is indicated in associated complications and if they are mobile or cause mechanical interference to orthodontic appliances. Riga-Fede disease is unlikely to be present and not reported among clefts with natal teeth. The extraction of nonmobile tooth can be done during the primary surgery for the cleft lip.

**References**

1. Uzamis M, Olimez S, Ozturk H, Celik H. Clinical and ultrastructural study of natal and neonatal teeth. J Clin Pediatr Dent 1999;23:173-7.
2. Leung AK. Natal teeth. Am J Dis Child 1986;140:249-51.
3. Seminario AL, Ivanacova R. Natal and neonatal teeth. Acta Medica (Hradec Kralove) 2004;47:229-33.
4. Kates GA, Needleman HL, Holmes LB. Natal and neonatal teeth: A clinical study. J Am Dent Assoc 1984;109:441-3.
5. de Almeida CM, Gomide MR. Prevalence of natal/neonatal teeth in cleft lip and palate. J Orofac Orthop 1999;60:259-68.
6. Cunha RF, Boer FA, Torriani DD, Frossard WT. Natal and neonatal teeth: A potential impediment to nasoalveolar molding in infants with cleft lip and palate. Cleft Palate Craniofac J 1998;35:154-60.
7. Tsai TP, Huang CS, Huang CC, See IC. Distribution patterns of primary and permanent dentition in children with unilateral complete cleft lip and palate. Cleft Palate Craniofac J 1996;33:297-9.
8. Ziai MN, Bock DJ, Da Silveira A, Daw JL. Natal teeth: A potential impediment to nasoalveolar molding in infants with cleft lip and palate. J Craniofac Surg 2005;16:262-6.
9. Voehringer W, Koch MJ, Benzinger S, van Waes H, Wolf NI, Boltshauser E, et al. Rare dental peculiarities associated with the hypomyelinating leukoencephalopathy H syndrome/ADHD. Pediatr Dent 2010;32:386-92.
10. Tunc T, Bulbul A, Erdinc K, Sarici SU, Gul D, Ozcan O. The Wiedemann–Rautenstrauch or neonatal progeroid syndrome: Report of a patient with hypospadias. Genet Couns 2009;20:367-71.
11. Shaw A, Longman C, Irving M, Splitt M. Neonatal teeth in X-linked Opitz (G/BBB) syndrome. Clin Dysmorphol 2006;15:185-6.
12. Liu MH, Huang WH. Oral abnormalities in Taiwanese newborns. J Dent Child (Chic) 2004;71:118-20.
13. Marakoglu K, Percin EF, Marakoglu I, Gursoy UK, Gere F. Anencephalic infant with cleft palate and natal teeth: A case report. Cleft Palate Craniofac J 2004;41:456-8.
14. Kadam M, Kadam D, Bhandary S, Hukkeri RY. Natal and neonatal teeth among cleft lip and palate infants. Natl J Maxillofac Surg 2013;4:73-6.

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