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# FREQUENCY OF NATAL, NEONATAL AND EARLY INFANCY TEETH IN PATIENTS WITH CLEFT LIP AND PALATE IN KHYBER PAKHTUNKHWA, PAKISTAN

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### ABSTRACT

Objective was to determine the frequency and morphological features of natal, neonatal and early infancy teeth in patients with cleft lip and palate in Khyber Pakhtunkhwa, Pakistan.

It was a descriptive cross-sectional study and it was carried out at the Department of Orthodontics, Peshawar Dental College and Hospital.

A total of 47 patients with Cleft lip and palate (both unilateral and bilateral), male and female, aged 6 months and below referred to the Department of Orthodontics (for naso-alveolar molding) Peshawar Dental College & Hospital from various hospitals across Khyber Pakhtunkhwa province were examined for natal / neonatal / early infancy teeth and data was recorded using a proforma. Data were collected in four and a half month duration (February 2022 to June 2022).

Among 47 subjects (31 male and 16 females), one natal, 2 early infancy teeth, and 3 neonatal teeth were observed in six babies. Only 16.6% of the teeth were in the anterior mandibular area, with the anterior maxillary region being the most common location. Amongst the sample, cleft lip and palate was the most frequent type of cleft found (76.6%) with mostly being unilateral (70.2%) and on the left side (46.8%). The majority of the teeth were single (83.3%) and color ranged from yellowish brown (50%) to whitish opaque (50%) while 2 teeth (1 natal, and 1 early infancy tooth) were smaller in size. Both of the early infancy teeth were conical in shape. Sixteen percent of the babies with teeth were observed with Riga Fede's disease while only 33% of the patients were reported having discomfort during suckling due to early infancy teeth.

Natal, neonatal and early infancy teeth occured in 12.76 % of babies with cleft lip and palate and most of these teeth was found in anterior maxilla.

Key Words: Natal & neonatal teeth, Early infancy teeth, cleftlip & palate

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## **INTRODUCTION**

Neonatal teeth are those that erupt within the first

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thirty days of life, while natal teeth are those that are present at birth.<sup>1</sup> Teeth that erupt into the oral cavity between the age of one and three and a half months are identified as early infancy teeth.<sup>2</sup> The usual physiological eruption of primary teeth begins at the age of six months.<sup>3</sup> In comparison to neonatal teeth, natal teeth are three times more common in children.<sup>4</sup> Dentitia praecox, dens connatalis, congenital teeth, fetal teeth, pre-deciduous teeth, and precocious dentition are some of the terminologies used to describe such teeth.<sup>5</sup>

In a study<sup>6</sup>, it was reported that neonatal and natal teeth are underdeveloped, tiny, and cone-shaped and having features like hypo plastic enamel/dentine and are yellowish-brown or pale in appearance with the prevalence ranging from 1:1000 to 1:30,000 live births. In another study<sup>4</sup>, it was reported that lower

primary central incisors were most common natal teeth to be found. Anegundi et al.<sup>7</sup> reported that mandibular incisors account for 85% of natal and neonatal teeth, maxillary incisors account for 11%, mandibular canines and molars account for 3%, and the maxillary posterior region accounts for only 1%. According to some researchers, natal/neonatal teeth are more common in patients with CLP in the maxilla and primary lateral incisor area on the cleft's lateral side. Other authors reported that natal and neonatal teeth were present in 2.02% of unilateral CLP cases and 10.06 percent of bilateral CLP cases.<sup>3,10</sup> Furthermore, the majority of these teeth (90-99%) erupt from the usual complement of primary teeth, with only 1-10% being supernumerary.<sup>2</sup> Some authors claimed a predilection for females, citing a 66% female to 31% male ratio.<sup>5</sup>

Based on the development stages determined by clinical standards for natal and neonatal teeth, teeth are divided into two groups: mature and immature. Mature natal/neonatal tooth can be satisfactorily maintained while immature natal/neonatal tooth has an incomplete or malformed structure and has poor prognosis.<sup>8</sup> Helbing's classification can be used to classify the appearance of natal and neonatal teeth as they erupt into the oral cavity. Based on this classification natal/ neonatal teeth are categorized into four classes. Natal/ neonatal teeth that have a shell-shaped crown and no root and are only tenuously connected to the alveolus by gingival tissue are classified as class-1. Teeth with solid crowns and little or no roots that are poorly attached to the alveolus by gingival tissue comprise the class-2 while those teeth whose incisal edge has just erupted through the oral mucosa belong to class-3. Class-4 consists of the un-erupted but palpable tooth with apparent mucosal edema.<sup>2</sup>

Although the exact cause of natal and neonatal teeth is unknown, numerous theories have been proposed, including genetics, hormone changes, diseases such as congenital syphilis, and nutritional deficiencies such as hypovitaminosis. The eruption process can be accelerated by febrile conditions, trauma, malnutrition, superficial position of the tooth germ, osteoblastic activity within an area of the tooth germ, maternal exposure to environmental toxins, and exanthemata.<sup>6</sup> It is generally believed that the illness is brought on by a superficial localization of dental follicles.<sup>9</sup> Possible complications of natal/neonatal teeth in babies with clefts include aspiration into the infant's lung, ulceration of the ventral surface of the tongue, discomfort when sucking, abrasion of the maternal nipple, and difficulty maintaining the presurgical orthodontic apparatus.<sup>1</sup>

A dental radiograph can be useful in the care of natal and neonatal teeth, determining whether the tooth is a prematurely erupted deciduous tooth or a large soft tissue enlargement. All natal/neonatal teeth should be extracted to avoid complications.<sup>1</sup> Therefore, the study aims to understand natal and neonatal teeth in patients with cleft lip and palate, as well as to compare natal/ neonatal teeth to premature primary teeth to prevent primary teeth from being lost as a consequence of extraction of natal/neonatal teeth.

The objective of this study is to determine the frequency and morphological features of natal, neonatal and early infancy teeth in patients with cleft lip and palate in Khyber Pakhtunkhwa, Pakistan.

# SUBJECTS AND METHODS

Ethical approval for conducting this study was taken from the Institutional Review Board, Prime Foundation Pakistan (Prime/IRB/2022-414- Patients with cleft lip and palate referred to the Department of Orthodontics (for naso-alveolar molding) Peshawar Dental College & Hospital from various hospitals across Khyber Pakhtunkhwa province were included in the study. A total of 47 patients with Cleft lip and palate (both unilateral and bilateral), male and female, aged 6 months and below included. Patients with non-compliant parents and aged above 6 months were excluded. Informed written consent was taken from the patient's parents/guardian. Subjects were examined for the natal/neonatal and data was recorded using a proforma. Data were collected in four and half month duration (February 2022 to June 2022) and then entered into the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive analysis was done to find out the prevalence of natal and neonatal teeth in patients with cleft lip and palate.

# RESULTS

The sample consisted of 47 babies with a mean age of 22 days and a range of 1-120 days. The participants were 31 (66%) males and 16 (34%) females. The frequency of different types of clefts is given in table-1. A total of 3 neonatal, 2 early infancy teeth and 1 natal tooth were observed. They were most frequently located in the anterior maxilla, with maxillary incisors being the most common site. The majority of the teeth were single (83.3%) while the neonatal teeth present in the mandibular incisor site were in pairs. The color ranged from yellowish brown (50%) to whitish opaque (50%). Two teeth (1 natal, and 1 early infancy tooth) were smaller in size. Both of the early infancy teeth were conical in shape. Fifty percent of the teeth belonged to Class-1 of Helbing's classification and the rest of them were classified as Class-4. Riga Fede's Disease was observed in 16.6% of the babies with natal, neonatal or early infancy teeth while only 33% of the patients were reported having discomfort during suckling due to early infancy teeth.

		natal	neonatal	early infancy teeth
Location	Maxillary	1	2	2
	Mandibular	0	0	0
	Both	0	1	0
Site	lower primary central incisor	0	0	0
	maxillary incisor	1	1	2
	mandibular canines	0	0	0
	mandibular molar	0	0	0
	maxillary canines	0	1	0
	maxillary molars	0	0	0
	both the lower central incisor and maxillary incisor	0	1	0
Number	Single	1	2	1
	in pair	0	0	1
	more than 2	0	0	0
	single maxillary incisor and in pair in mandibular incisor	0	1	0
Color	yellowish brown	0	2	1
	whitish opaque	1	1	1
	any other	0	0	0
Size	Normal	0	3	1
	Small	1	0	1
Morphology	Normal	1	3	0
	Conical	0	0	2
Helbing's classifi- cation	shell-shaped crown attached to the alveolus by the rim of the mucosa	1	2	0
	solid crown attached to the alveo- lus with little or no root	0	0	0
	incisal edge of the crown just erupted	0	1	2
	unerupted but palpable through the mucosa	0	0	0
Riga fede disease	Yes	0	0	1
	No	1	3	1
Discomfort during suckling	Yes	0	0	2
	No	1	3	0

## TABLE 1: NATAL, NEONATAL AND EARLY INFANCY TEETH

## DISCUSSION

This study was carried to find out the frequency of natal, neonatal and early infancy teeth in patients with cleft lip & palate (CLP). Discomfort during suckling and manifestation of Riga Fede's Disease due to these teeth add to the feeding problems. Our results established that 12.76% of patients with CLP have natal, neonatal, and early infancy teeth. Natal teeth occurred less frequently than neonatal and early infancy teeth. It was also reported by De Almeida and Gomide that the prevalence of natal and neonatal teeth in unilateral CLP is less than in bilateral CLP.<sup>10</sup> Gokul Gunasekaran et al.<sup>7</sup> carried out the evaluation that the prevalence

of natal teeth was found to be rare which only 0.16% is which is congruent with this research. These were more common in males (66%) than females (34%). Kates et al. found the presence of such teeth almost double in females than in males which is in contrast to our study.

Out of different types of clefts, cleft lip and palate was found to be predominant (76.6%). Among them, unilateral CLP was 70.2% with most present on the left side (46.8%). Begum et al reported similar findings; unilateral cleft on the left side is the most common type of CLP<sup>16</sup>. Natal, neonatal, and early infancy teeth were mostly located in the anterior maxilla with only 16.6% located in the anterior mandible. Among the anterior maxilla, 16.6% of the teeth were present in the maxillary canine area while the rest (66.6%) were in the maxillary incisor region. These findings are in conflict with the study conducted by Anton et al. who described the mandible as the most common location with mandibular central incisors (85%), mandibular cuspid, or molar (3%).<sup>2</sup> R.Burcu Nur Yilmaz.<sup>1</sup> Reported that all the neonatal teeth were present in maxilla which exibit alignment with this study.

This paper analysis, most of the teeth were single except mandibular central incisors which were present in pairs. Smith et al.<sup>6</sup> stated that natal and neonatal teeth can be of normal size, color, and shape/morphology but may vary So In the present study, 66.66% of neonatal/early infancy teeth were of normal size while 33.33% were of small in size. Morphologically, 66.66% were of normal shape while 33.33% were conical. Considering the color of the teeth, 50% were yellowish-brown and 50% were of whitish opaque which is comparable to the study done by Chun et al.<sup>6</sup>

Sublingual ulceration or Riga Fede's Disease is a lesion of the mucosa of the tongue which arises following repetitive trauma by the tooth during tongue movements. The ulcer most commonly presents at the ventral aspect of the tongue.<sup>17</sup> Sixteen percent of the babies with CLP having natal, neonatal or early infancy teeth were observed with this disease while 33% were experiencing discomfort during suckling especially due to early infancy teeth which was evaluated by this study.

While treating patients with CLP, the foremost responsibility of the healthcare provider is to make sure the baby can feed normally without any difficulty. For this reason, the presence of natal, neonatal, and early infancy teeth should be a part of the intra-oral examination. This study will help to enhance the understanding of the general dental and health practitioners regarding the diagnosis and implications of natal, neonatal, and early infancy teeth. This will indirectly benefit general population resulting in increased awareness and improved oral health status of the infants.

#### CONCLUSION

Natal, neonatal and early infancy teeth occur in 12.76 % of babies with cleft lip and palate and most of these teeth are found in anterior maxilla.

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Wrote the manuscript	
All authors made substantial contributions in data collection & data analysis, and re-checking the	
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