

PalArch's Journal of Archaeology of Egypt / Egyptology

PREVALENCE OF NATAL OR NEONATAL TEETH IN PAEDIATRIC DENTAL PATIENTS IN CHENNAI- A RETROSPECTIVE STUDY

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Gokul Gunasekaran, Geo Mani, Sri Rengalakshmi. PREVALENCE OF NATAL OR NEONATAL TEETH IN PAEDIATRIC DENTAL PATIENTS IN CHENNAI- A RETROSPECTIVE STUDY--PalArch's Journal Of Archaeology Of Egypt/Egyptology 17(7), 217-226. ISSN 1567-214x

Keywords: Natal teeth; Neonatal teeth; Paediatric; Prevalence

ABSTRACT:

Natal teeth are teeth which are seen at birth and neonatal teeth erupt during the first thirty days after birth. The exact cause for these abnormalities is not exactly determined but factors such as trauma, malnutrition, infection or environmental factor can be a causative factor. Different studies conducted in different regions have shown different incident rates. The objective of the study is to find the prevalence of natal/neonatal teeth among the general population visiting a dental college setting in Chennai. In this retrospective study design, evaluation of 86,000 patient case sheets were done and isolation of 1,851 patient records within the age group of 0 to 6 years were selected to evaluate data on neonatal/natal missing tooth. Inclusion criteria included patients aged from 0 to 6 years, both male and female population. Exclusion criteria included incomplete data. MS-Excel tabulation was done and SPSS analysis was done. Out of 1851 children, only three neonates were born with natal teeth. Our study showed male preponderance and most commonly erupted teeth were

mandibular anteriors. The prevalence of natal teeth (0.16%) was found to be very rare in our study group.

INTRODUCTION

Natal teeth are teeth present at birth and neonatal teeth are teeth erupted within the first month of life [1]. Natal teeth were found to be three times more common in children than neonatal teeth. Dentitia praecox, dens connatalis, congenital teeth, foetal teeth, infancy teeth, predeciduous teeth, and precocious dentition are some of the terminologies used to describe such teeth [2]. The exact aetiology however is unknown, but certain types of infection, febrile status, trauma, malnutrition, superficial position of tooth germ, hormonal stimulation and maternal exposure to environmental toxins have been implicated as causative factors [3]. Clinically the natal/neonatal teeth are poorly developed and are small and cone shaped. They have a yellowish-brown or whitish opaque color and have a hypoplastic enamel or dentin [4]. Incidence of natal teeth is 1:3000 live births and the most common natal teeth were found to be lower primary central incisors [5]. Incidence of natal and neonatal teeth is 85% in mandibular incisors, 11% in maxillary incisors, 3% in mandibular canine and molars and only 1% in maxillary posterior region [6]. Of these 90% of teeth are primary and only 10% are supernumerary [5]. Predilection for females was cited by some authors with Kates et al., reporting a 66% proportion for females against a 31% proportion for males [7]. Few studies state that natal/neonatal teeth are more common in Muslim children when compared to Hindu children [8]. The aetiology of neonatal teeth is unknown but can be related to several factors such as superposition of germ, hereditary transmission of a dominant autosomal gene [9, 10], infection or malnutrition [11], eruption accelerated by febrile incidents or hormonal stimulation [12], osteoblastic activity inside the germ area related to the remodeling phenomenon [13] and hypovitaminosis [14]. Natal teeth may be associated with some syndromes like Hallermann-Streiff syndrome, Ellis-van Creveld syndrome, steatocystoma, multiplex, congenital pachyonychia, Wiedemann-Rautenstrauch, cleft lip and palate [15]. Our department is passionate about child care, we have published numerous high quality articles in this domain over the past 3 years [16–34]. With this inspiration we planned to pursue research on the study that would help to find the prevalence of neonatal/natal teeth among infants and help to create awareness among practitioners for the treatment of such abnormalities. Natal and neonatal teeth provoke the interest of both parents and the dentist because of their varied clinical features. Therefore, the present study was conducted to find out the incidence of neonatal/natal teeth among neonates in the region of Chennai and find out which is the most commonly occurring neonatal/natal teeth among them.

MATERIALS AND METHODS

This retrospective study was conducted in the university setting. Data chosen for evaluation were patients who reported to a dental college for pedodontic treatment. The details of the patients were obtained from analysis of 86,000 patients from June, 2019 to March, 2020 from Dental information archiving software (DIAS) for the purpose of preservation and efficient analysis of the patients details including intraoral and extra oral pictures and treatments being

done, which is maintained in a confidential manner. 1,851 patient case sheets were filtered by following the inclusion and exclusion criteria for evaluation for natal/neonatal teeth and the treatment performed for each case was evaluated. These serve as records for the retrospective studies. The study was conducted after getting ethical approval from the Institutional Ethical Committee (Ethical approval number : SDC/SIHEC/2020/DIASDATA/0619-0320). Cross verification was done with the help of DIAS data. To minimise sampling bias all data were included. The inclusion criteria included patients who were aged till 6 years , both male and female. The exclusion criteria included patients above 6 years and incomplete data. Data was downloaded from DIAS and imported to MS-Excel. Data which was not required and incomplete were excluded. A MS-Excel tabulation was done. The MS-Excel sheet was then imported to SPSS and results were obtained in the form of graphs and tables. The advantages of the study included easy accessibility and availability of the required data and drawback was the available data was not location specific and belonged to different ethnicity. Descriptive and frequency statistics were done to find out the prevalence details

RESULTS AND DISCUSSION

The study included 1,851 patients with 54.9% males and 45.1% females (Figure 1). The maximum percentage of patients were of the age (Figure 2) 6 years (25.50%) and the least was below 1 year (2.36%). The total prevalence of natal teeth was 0.16% (Figure 3). Among the patients with natal teeth (Figure 4), 66.67% were males and 33.33% were females. Mandibular central incisors were the most commonly (Figure 5) found natal teeth in our study. Natal or neonatal canines are extremely rare [35]. Alvarez et al noted that natal/neonatal teeth occur more frequently bilaterally (61–76%) [36]. On the contrary, our study found more unilateral occurrences of natal/neonatal teeth which is similar to another study [37]. Ooshima et al [38] emphasized that multiple natal/neonatal teeth are extremely rare. The strong predilection for the lower central incisors is not surprising in view of the fact that they are normally the first teeth to erupt. Other studies have reported that the most common natal/neonatal teeth are prematurely erupted from the normal dentition of primary teeth (90%–99%) and only 1% to 10% of natal and neonatal teeth are supernumerary [39, 40]. A major complication from natal/neonatal teeth is by the tooth's sharp incisal edge which causes an ulceration on the ventral surface of the tongue which is also known as Riga-Fede disease or syndrome [41, 42]. The constant ulceration may interfere in proper suckling and feeding and there are chances of nutritional deficiencies in neonate and cause infants' failure to gain weight. One of the major complications associated with natal teeth is possibility of swallowing and aspiration which has already been described previously. Other complications are injury to mother's breast and inconvenience during suckling [43]. The presence of natal teeth is a very rare condition. The prevalence of natal teeth was found to be 0.16% among the study population and the showed a slight male preponderance of 0.20%. However, a predilection for females was cited by some authors such as Anegundi et al. reported a 66% proportion for females against a 31% proportion for males [4, 7]. Few studies show no gender prevalence as in line with some reports [37, 44, 45]. Another study showed that parents had a good knowledge regarding the maintenance of oral

health and hygiene in infants but were not aware of the various treatment modalities available for conditions such as natal teeth [46], which helps to throw light on the study. According to other authors, [47], mild to moderate irritation on the tongue and a small mobility of these teeth can be resolved with a more conservative treatment, i.e. treating the sharp edges of the teeth in question with abrasive instruments. Addition of composite resin may also be a viable treatment alternative [43]. For rapid resolution of any ulceration caused due to the natal/neonatal teeth, extraction is mandatory instead of using more conservative methods. According to Singh et al. [48], if the degree of mobility is more than 2 mm, the natal tooth usually needs to be extracted; we used this as the criterion for mobility.

However, unlike previous studies [7, 49] that claimed all natal/neonatal teeth were mobile, about half of the teeth showed increased mobility in another study [50]. This may have resulted from the small sample size and cannot be considered as that most Korean babies do not show any mobility. Another author [51] suggested that although general anesthesia is not always indicated for the removal of these teeth, in cases in which the premaxilla is loose, general anesthesia is warranted.

For so many years cases of infants born with natal and neonatal teeth have been reported in the dental literature. There is a lack of consistency in the knowledge among general dentists and paediatricians regarding natal/neonatal teeth and there by negligence would lead to discomfort to both the child and the mother. These study results have given an insight into the prevalence of natal and neonatal teeth in the Chennai population thereby providing adequate information to the dental practitioners and pediatricians.

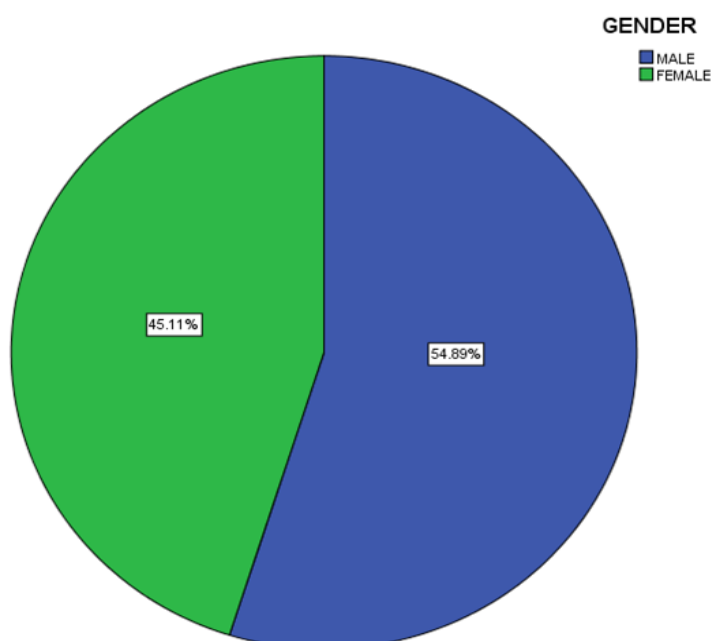


Figure 1: The pie chart represents the frequency distribution of the study subjects based on gender. Blue colour represents male patients and green

colour represents female patients. The study population of natal/neonatal teeth were found in male (blue) population was 54.89% and female (green) population was 45.11% .

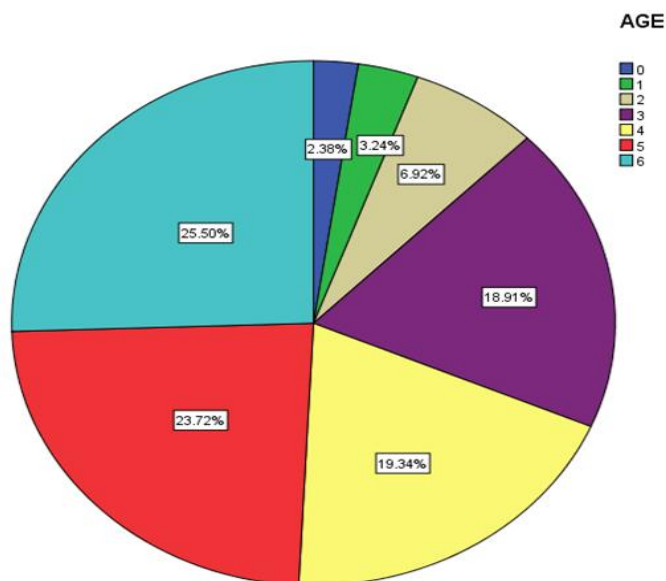


Figure 2: The pie chart represents the frequency distribution of the study subjects based on age. The study population of natal/neonatal teeth with highest percentage of patients were in the age of 6 years (cyan) (25.5%), 5 years (red) (23.72%), 4 years (yellow) (19.64%), 3 years (violet) (18.91%), 2 years (beige) (6.92%), 1 year (green) (3.24%) and less than 1 year (light blue) (2.38%).

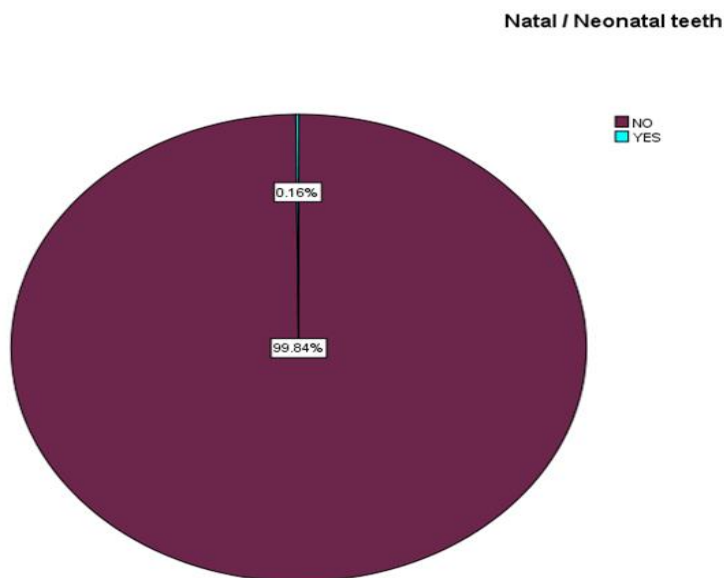


Figure 3: The pie chart represents the frequency distribution of the study subjects based on presences of natal/neonatal teeth. Violet represents patients without any natal teeth and blue represents patients with natal/neonatal teeth. The pie chart reveals the prevalence of natal/neonatal teeth to be 0.16% (blue) in the study population.

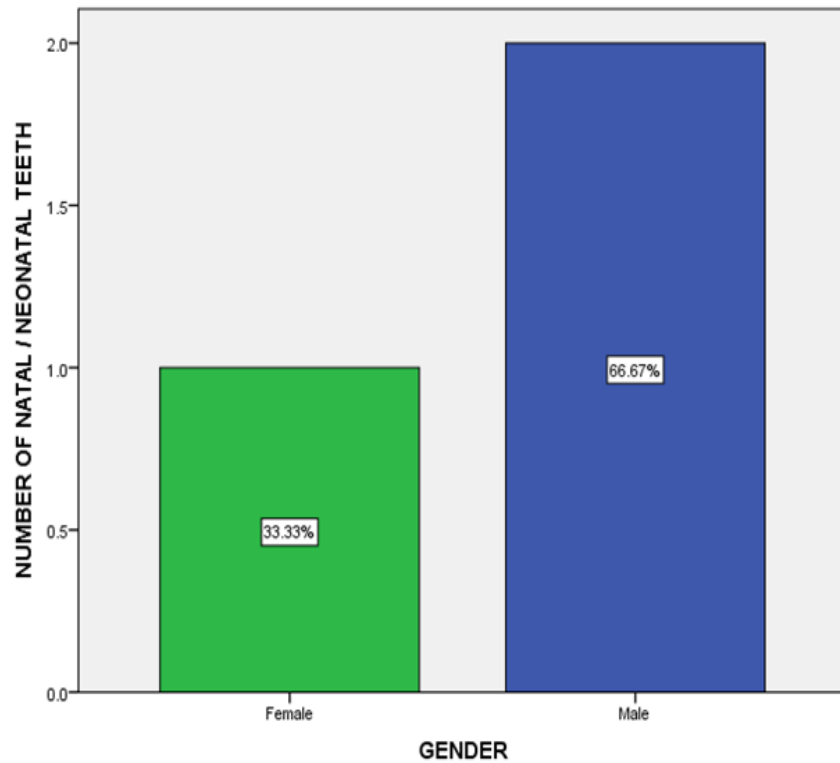


Figure 4: The bar graph reveals the gender distribution of natal/neonatal teeth in the population with natal/neonatal teeth with 66.67% in males (blue) and 33.33% in females (green). A slight male predilection is observed for natal/neonatal teeth. Since the prevalence of natal teeth was very low, the association with gender cannot be determined.

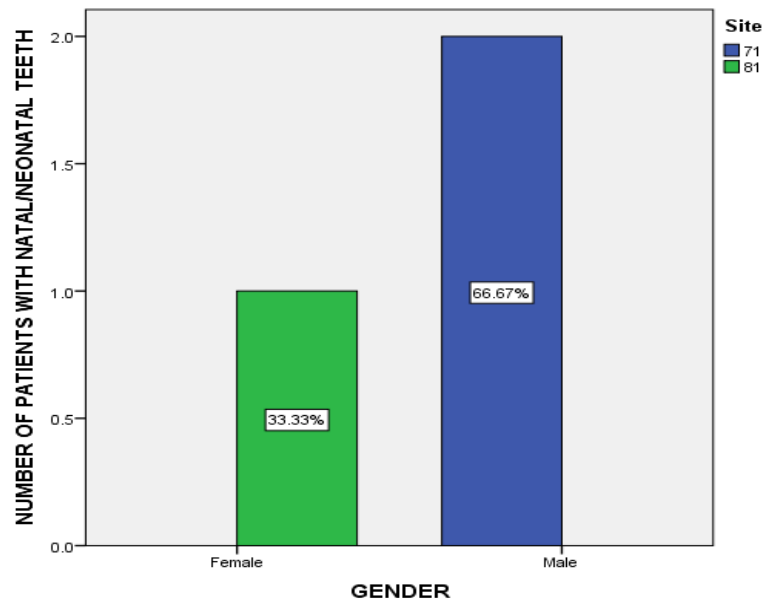


Figure 5: The bar graph reveals the site of natal/neonatal teeth (FDI system of notation) among the patients with natal/neonatal patients. 66.67% in males (blue) were found to have in 71 site and 33.33% in females (green) were found to have in 81 site.

Table 1: The table represents the gender distribution of study population for natal/neonatal teeth where in a total of 1,851 patients only 3 patients with natal/neonatal teeth were seen of which 2 were male and 1 was female.

	Gender	Presence of Neonatal or Natal teeth		Total
		No	Yes	
	Female	833	1	834
	Male	1015	2	1017
	Total	1848	3	1851

CONCLUSION

From the study, the prevalence of neonatal/natal teeth among infants who came to Dental College was found to be 0.16% which was found to be less when compared to similar studies and was found to have a male gender preponderance. The mandibular central incisors were the most commonly erupted teeth among neonates. This study will help to create awareness on natal/neonatal teeth and would help practicing dentists and obstetricians to have a clear treatment plan for such conditions. However, more studies should be done with larger sample size, at different regions for comparison.

ACKNOWLEDGEMENT

The authors thank Saveetha Dental College for constant support in providing the data for analysis.

CONFLICT OF INTEREST

None declared.

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