Incidence and Assessment of Cleft Lip and Palate Patients Visiting Nitte Meenakshi Institute of Craniofacial Surgery, Kshema, Deralakatte Mangaluru - A Retrospective Study

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ABSTRACT

Cleft lip with or without cleft palate is the most common orofacial congenital anomaly among live births. This study was carried out to determine the incidence of cleft lip and palate in patients reporting to Nitte Meenakshi Institute of Craniofacial Surgery during 2010-2014. The study was performed on 1080 patients reporting in OPD of Nitte Meenakshi Institute of Craniofacial Surgery during 2010-2014. All patients were screened for oral clefts. Demographic data including age, gender, religion, province and type of oral clefts were recorded for analysis. Of total 1080 patients, male:female ratio was 0.9:1; 55.37% were Hindus, 35.28% were Muslims and 9.35% were Christians. Kerala:Karnataka ratio was 1.45:1. The age distribution was 0-10years (43%) > 11-20years (41%) > 21-30years (14%) > 31- 40years (2%). The incidence of cleft lip was 351/1080 (32.5%) of which 267 (76.07%) were complete unilateral cases and 62 (17.66%) were complete bilateral cases and 22 (6.27%) were incomplete unilateral cases. The incidence of cleft alveolus was 335/1080 (31.02%) of which 273 (81.49%) were complete unilateral cases and 36 (18.51%) were complete bilateral cases. The incidence of cleft hard-palate was 310/1080 (24%) and that of cleft soft-palate was 84/1080 (6%). The data in this study seems to be of limited size for area as-well-as patients. Most of the studies in literature on this subject is few and inadequate. Environmental and genetic focused studies should be carried out for better understanding and providing better prevention and care to these patients.

Key words: Incidence, Cleft Lip, Retrospective

Received : 05.01.23
Review completed : 07.02.23
Accepted : 15.02.23

INTRODUCTION:

Cleft lip and/or palate (CL/P) is a common human congenital defect, promptly recognized at birth. Despite the variability driven by socioeconomic status and ethnic background, the worldwide prevalence of CL/P is often cited as approximately 1: 700 live births; nevertheless, the different methods of assessment may lead to different prevalence rates (Mossey and Castilla, 2001). CL/P results from failure of fusion of the maxillary process with the medial nasal bulge of the frontal process or of both the palatal shelves. These fusions occur between the 4th and 7th weeks of embryogenesis.1

CL/P are the most common congenital malformations in the head and neck throughout the world. Surgical techniques for the appropriate treatment of cleft lip and palate have developed very rapidly, but the epidemiologic study for prevention remains in its infancy. Both genetic and environmental influences are believed to cause cleft lip and palate.2

This study aimed to know the incidence and assessment of different types of clefts in patients managed in the Nitte Meenakshi Institute of Craniofacial Surgery, K. S. Hegde Medical Academy (KSHEMA) from the year 2010 to 2014.

MATERIAL and METHODS:

The records of CL/P patients managed in the Craniofacial Surgery department in Nitte Meenakshi Institute, KSHEMA from the year 2010 to 2014 were retrospectively reviewed. Patients' data and relevant information was collected. A descriptive classification was used to record the cleft type, and the CL/P patients were divided into cleft lip, cleft alveolus, cleft hard palate and cleft soft palate. Cleft lip and alveolus were further classified as complete or incomplete and as per side involved into right, left or bilateral. Cleft hard and soft palate were classified as complete, incomplete or submucosal. Data was divided into 4 age groups; Group 1: 0 to 10yrs of age, Group 2: 11-20yrs of age, Group 3: 21-30yrs of age and Group 4: 31-40yrs of age.

RESULTS:

Of total 1080 patients of CL/P, there was female predominance seen with 513 (47.5%) males and 567 (52.5%) females. (Figure 1) The male to female ratio been 0.9:1. Of the total, 598 (55.37%) were Hindus, 381 (35.28%) were Muslims and 101 (9.35%) were Christians. Amongst them 640 (59.26%) are from Kerala and 440 (40.74%) belong to Karnataka province as shown in Table 1. The age wise distribution of patients into various age groups were as given in Table 2, with maximum number of patients falling in age group 0-10yrs(43%) > 11-20yrs (41%) > 21-30 yrs (14%) > 31- 40yrs (2%). (Figure 2)

Table 3 shows the incidence of clefts amongst these patients, which was as follows. The incidence of cleft lip was 351 of 1080 (32.5%) of which 267 (76.07%) were complete unilateral cases and 62 (17.66%) were complete bilateral cases and 22 (6.27%) were incomplete unilateral cases. The incidence of cleft alveolus was 335 of 1080 (31.02%) of which 273 (81.49%) were complete unilateral cases and 36 (18.51%) were complete bilateral cases. The incidence of cleft hard palate was 310 of 1080 (24%) and that of cleft soft palate was 84 of 1080 (6%). (Figure 3)

TABLE 1: Demographic information of CLP cases from the year 2010 to 2014

Age	Gender		Religion			Province	
	M	F	H	M	C	Kerala	Karnataka
0-10yr	222	244	257	176	33	249	218
11-20yr	213	228	239	153	49	288	153
21-30yr	67	79	90	46	10	87	59
31-40yr	11	16	12	6	9	16	10

M: Male F: Female H: Hindu
M: Muslim C: Christian

TABLE 2: CLP cases by age group

Age group	Male	Female
0-10yr	214	252
11-20yr	212	228
21-30yr	79	67
31-40yr	10	17

DISCUSSION:

While retrospective studies such as this can easily be criticized for their inaccuracies, every attempt has been made to maintain consistency in this study. In the majority of the isolated cleft lip and palate, the etiology has been considered to be multifactorial: combined genetic and environmental factors.2 According to Fogh-Andersen in Denmark, the incidence of cleft lip and palate doubled during the last 50 year and tripled during the last 100 years.

Harville et al. (2005) concluded that although Cleft Lip and Cleft Palate cases might represent the same condition, simply differing in severity, they showed some qualitative differences, such as male predominance for CL/P.4 This study, however, showed female predominance in the incidence of cleft lip and palate with M:F is 0.9:1. Unilateral cleft lip and palate were more commonly seen in this study, (154 out of 289 i.e. 53.29%), as has been previously reported by Knox and Braithwaite (1962)5, Jensen et al. (1988)6, and Greg et al. (1994).7 In our study female predominance was more as compared to various other studies, this may be attributed to different genetic background. Incidence values differ for different ethnic groups. In this study majority cases were noted in Hindus, followed by Muslim and Christian races.

Amongst the province, in this study patients were from Kerala and Karnataka province. It was found that 59.26% cases belong to Kerala province thus showing higher incidence of cleft in that region. The incidence of cleft lip was 351 of 1080 (32.5%) of which 267 (76.07%) were complete unilateral cases and 62 (17.66%) were complete bilateral cases and 22 (6.27%) were incomplete unilateral cases. The incidence of cleft alveolus was 335 of 1080 (31.02%) of which 273 (81.49%) were complete unilateral cases and 36 (18.51%) were complete bilateral cases. The incidence of cleft hard palate was 310 of 1080 (24%) and that of cleft soft palate was 84 of 1080 (6%). So it revealed from the study that the incidence of cleft lip and alveolus were in majority and almost same followed by cleft hard palate cases and cleft soft palate.

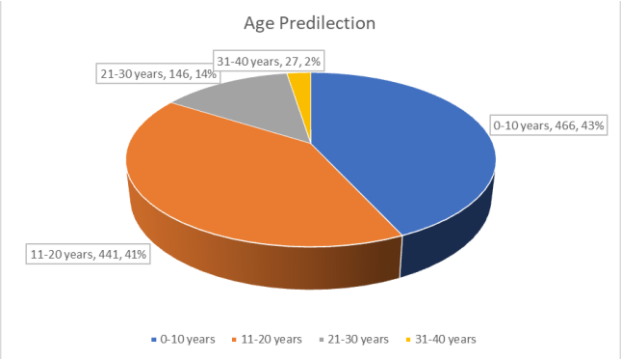

FIGURE 1: Gender Distribution among Cleft Patients

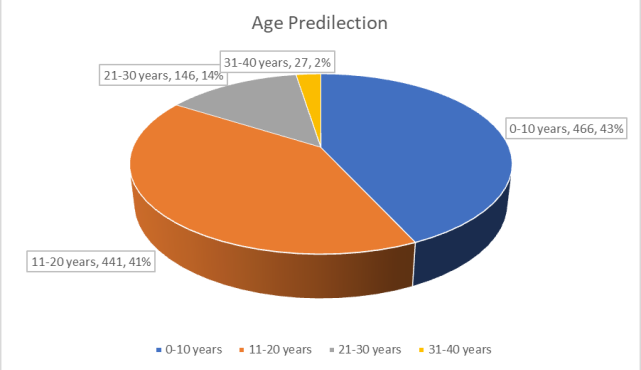

FIGURE 2: Age Predilection among Cleft Patients

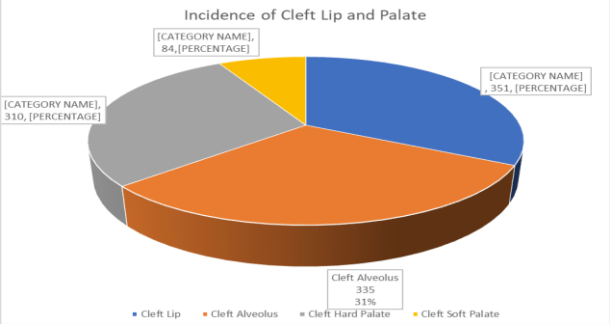

FIGURE 3: Incidence of Cleft Lip and Palate

CONCLUSION:

The available data and studies on associated malformations in children with clefts from Asia in general and India in particular are few and inadequate. Future studies focusing on specific environmental and genetic factors are necessary to facilitate health-related policies that focus on resource use as well as CL/P prevention and care. Special efforts should be invested on improving the awareness and education of the public and especially families with cleft patients about these deformities. It is known that there are genetic risks associated with consanguinity; hence major efforts should be devoted to raising the awareness of the problem of consanguinity among community leaders and the community. This can only be done by focusing on better understanding of the role that consanguinity plays in genetic conditions and the genetic risks associated with it.

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