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Understanding The Challenges and Associations of Orofacial Clefting: A Descriptive Study in Kalaburagi District India.

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Abstract

Objectives: This study aimed to assess the prevalence and characteristics of orofacial clefting (OFC) in the Kalaburagi district of the Hyderabad Karnataka region, an area marked by high poverty rates and limited healthcare resources. Additionally, the study aimed to investigate the association between OFC and consanguineous marriages.

Study Design: This descriptive study was conducted over a six-month period in a dental college and hospital in Gulbarga, Karnataka. Patients reporting to the Department of Prosthodontics from various primary healthcare centers were included. Data, including patient history, clinical features, and consanguinity status, were recorded through structured questionnaires, with informed consent obtained from patients.

Results: The study noted 32 cases of cleft lip and palate, with patients' ages ranging from 1 day to 2 months, with a mean age of 1.8 days. Of these cases, 46.8% were males, and 53.1% were females. Cleft lip with or without cleft palate (CL±P) was the most prevalent presentation, affecting 87.5% of patients. Notably, a strong association was observed between consanguineous marriages and cleft deformities, with 71.8% of cases linked to such unions.

Conclusion: This study reveals the substantial impact of OFC in an underserved region, with a higher prevalence in females and CL±P being the predominant presentation. Children with OFC face complex challenges extending beyond physical deformities, including social stigma and psychological impacts. The

association with consanguineous marriages highlights a potential genetic influence.

Keywords: orofacial clefts, cleft lip, cleft palate, consanguinity, Hyderabad – Karnataka region.

Introduction

Orofacial clefting (OFC) encompasses a range of congenital abnormalities that affect newborns, impacting structures in the oral cavity and sometimes extending to the facial region. These conditions result in deformities affecting oral, facial, and craniofacial features. The primary categories of OFC include isolated cleft palate (CP), isolated cleft lip (CL) and cleft lip with or without cleft palate (CL±P), which can also coexist with syndromes or other related conditions[1].

Globally, the incidence of cleft lip and palate is approximately one in 600 births (1:600). The overall worldwide prevalence of cleft lip with or without cleft palate is 9.92 cases per 10,000 births. Specifically, cleft lip occurs at a rate of 3.28 cases per 10,000 births, and cleft lip and palate at a rate of 6.64 cases per 10,000 births. The estimated annual occurrence of cleft conditions ranges between 27,000 and 33,000 cases[2].

Children born with these conditions encounter functional and aesthetic challenges, including difficulties with feeding due to problems with oral sealing, swallowing issues, and nasal regurgitation. Additionally, they may experience hearing problems associated with abnormalities in the palate muscles and encounter speech difficulties related to nasal air escape and articulation problems[3].

Despite these challenges, it's important to note that having a cleft is not insurmountable. Children with these conditions face additional hurdles beyond their visible facial differences. They often contend with recurrent infections, societal stigmatization, and psychological impacts that affect their speech, hearing, and dental development, ultimately impacting their self-confidence [4].

In tropical countries like India, these challenges are exacerbated by poverty and limited access to education. This issue is particularly pronounced in the Kalaburagi district of the Hyderabad Karnataka region, where poverty and inadequate healthcare facilities are concentrated at their highest levels within the Karnataka state [5]. Furthermore, due to low levels of awareness, orofacial clefts often go untreated in the population.[6]

Despite the pressing need for intervention, no published studies have addressed this issue in the region until now, prompting the initiation of our current study. This study aimed to assess the prevalence and characteristics of orofacial clefting (OFC) in the Kalaburagi district of the Hyderabad Karnataka region, an area marked by high poverty rates and limited healthcare resources. Additionally, the study aimed to investigate the association between OFC and consanguineous marriages.

Materials And Methodology

This descriptive study was conducted in a dental college and hospital, Gulbarga, Karnataka, over a period of 6 months. All the patients reported to the Department of Prosthodontics which was referred from other primary health care centers. The details of the subjects in terms of history, clinical features and were recorded through a structured questionnaire, after obtaining an informed consent from the patient.

The authors investigated the differences between age and sex with cleft status and type of clefts, and about consanguineous marriages.

Results

- The present study noted 32 Cleft lip and palate patients.

- The age of patients ranged from 1 day to 2months with mean age 0f 1.8 days.
- 46.8% cases were males and 53.1% were females.

Table 1: Association of Cleft Deformities with Gender

Type of cleft	Male No	Percentage %	Female No	Percentage %	Total No	%
CL	1	3.1	0	0	1	3.1
CP	3	9.3	0	0	3	9.3
CL±P	11	34.3	17	53	28	87.5
Total	15	46.8	17	53	32	100.0

(CL – isolated cleft lip, CP – isolated cleft palate, CL±P – cleft lip with or without cleft palate)

Table 2: Association of Cleft Deformities with Type

Type	Number	Percentage
CL	1	3.1
CP	3	9.3
CL±P	28	87.5

Chart 1: Association of Cleft Deformities with Gender and Type

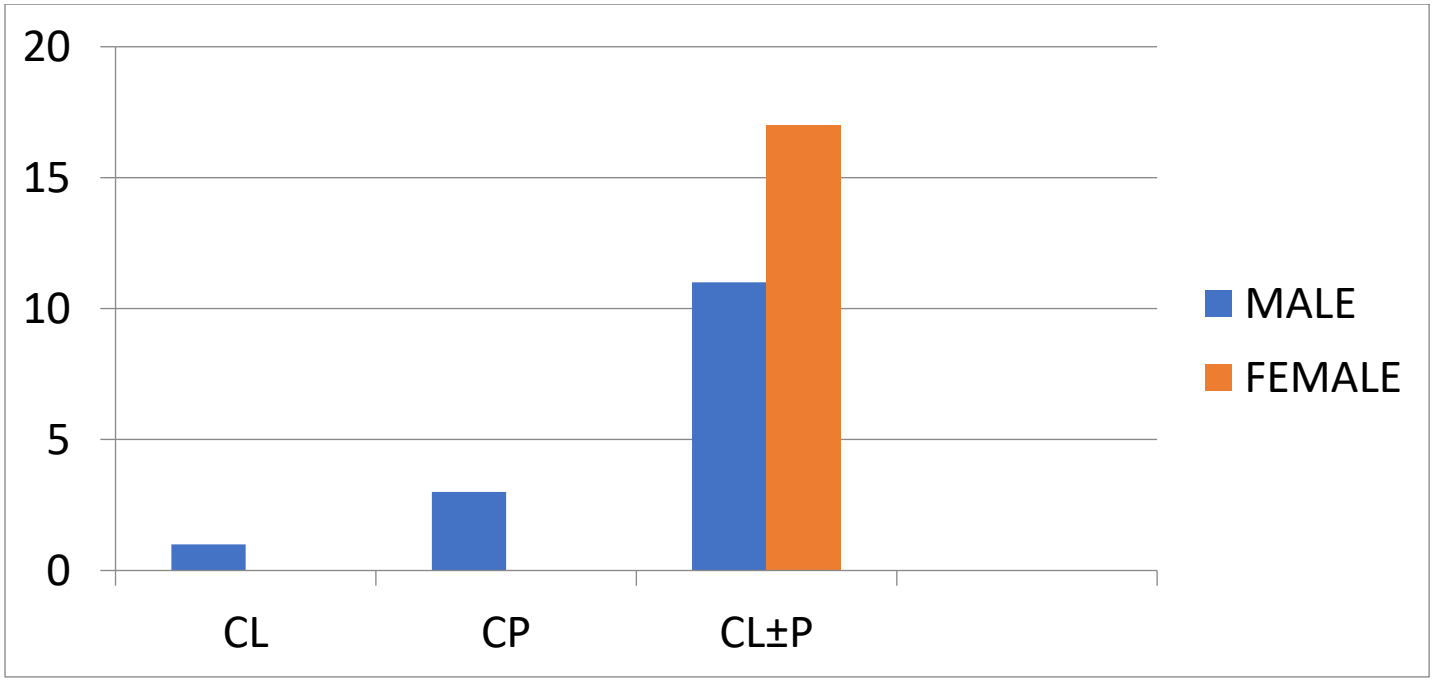


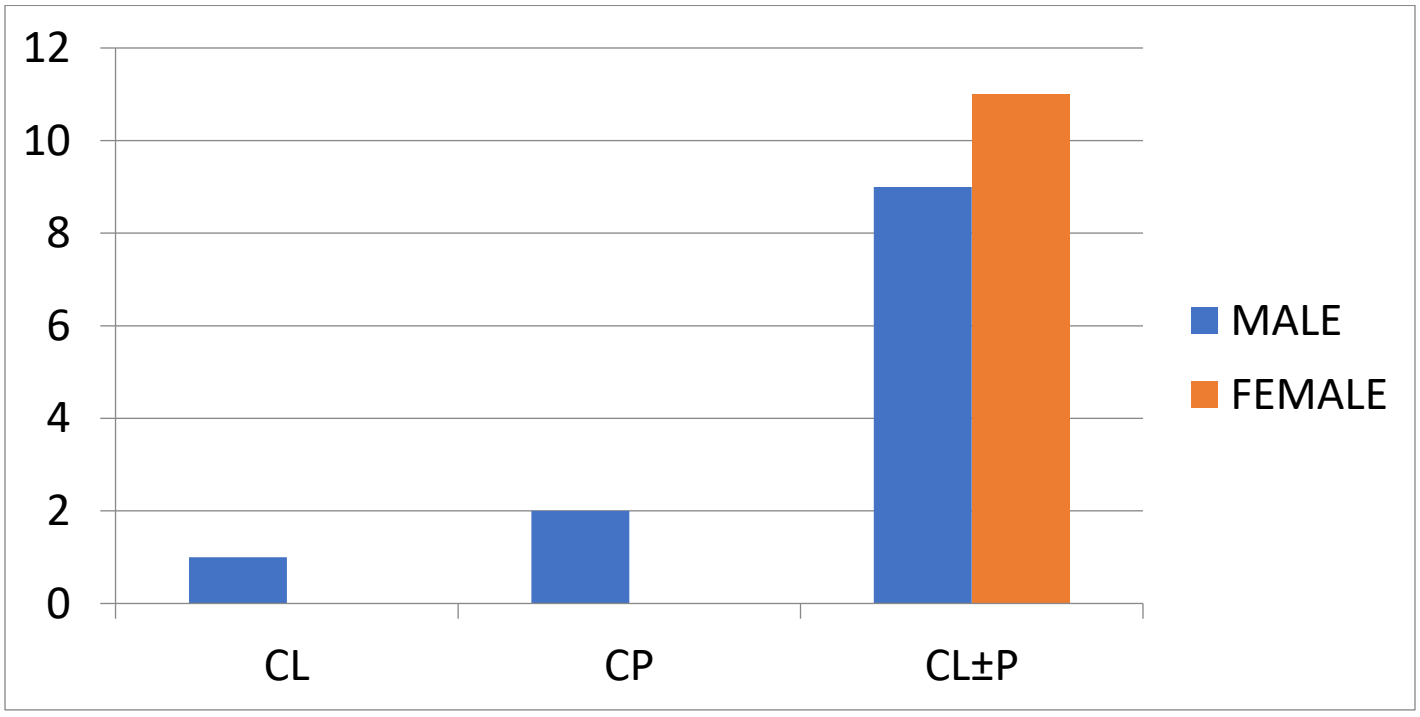
Table 3: Association of Specific Cleft Deformities with Gender

Gender	Unilateral CL±P (Right/left)		Bilateral CL±P	
	No	Percentage	No	Percentage
Male	8	25	3	9.3
Female	13	40.62	4	12.5

Table 4: Association of Cleft Deformities with Consanguinity

Type of cleft	Male	%	Female	%	Total number	%
CL	1	3.1	0	0	1	3.1
CP	2	6.2	0	0	2	6.2
CL±P	9	28.1	11	34.0	20	62.5
				Total	23	71.8

Chart 2: Association of Cleft Deformities with Consanguinity



Discussion

In this study, the age range of patients spanned from 1 day to 2 months. An analysis of the sex distribution of cleft cases revealed that 53.1% were females. In contrast, Orkar et al. (2002) observed that two-thirds of cases were males, with one-third being females[7]. Zhou et al. reported a male-to-female ratio of 2:1 [8].

Our study identified a higher prevalence of CL±P in females (34.3% males and 53% females) findings supported by Yi et al [9]. We also observed that CL±P was

more common than isolated cleft lip and isolated cleft palate. Richard and William found isolated cleft lip in 15% of cases, cleft lip and palate in 45% of cases, and isolated cleft palate in 40% of cases [10].

Our study further revealed that both Bilateral CL±P and unilateral CL±P were more common in females compared to males. However, both sexes exhibited a higher prevalence of unilateral CL±P compared to bilateral cases. These findings corroborate Zhou et al.'s observation that unilateral clefts were more common than bilateral ones [8], although Blanco-Davila's study suggested a higher incidence in boys compared to girls [11].

Significantly, our study established an association between consanguineous marriages and cleft deformities (71.8%). There is limited knowledge regarding the impact of consanguinity on craniofacial anomalies and cleft lip and palate. According to the National Family and Health Survey, 1992-1993 (NFHS) [12], consanguineous marriages are rare in the Northern, Eastern, and Northeastern states due to the predominance of the Hindu population. In contrast, Southern India, particularly Andhra Pradesh, Karnataka, and Tamil Nadu, reports higher rates of consanguineous unions, except for Kerala, where consanguineous marriage is strictly avoided among the large Christian population [13]. Future genetic research into cleft lip and palate and craniofacial anomalies should consider investigating the influence of consanguineous marriage on no syndromic cleft lip and palate.

Conclusion

In summary, our study highlights the prevalence of orofacial clefting (OFC) in an underserved region, with a higher occurrence in females and cleft lip with or without cleft palate (CL±P) being the most common presentation. Children with OFC face multifaceted challenges, including physical, social, and psychological issues. Notably, consanguineous marriages were strongly associated with OFC cases, suggesting a genetic influence.

Our findings emphasize the need for increased awareness, improved healthcare access, and continued genetic research in similar regions. This could lead to better support for affected individuals and a reduction in the OFC burden in vulnerable populations.

References

1. Mossey P, Little J. Addressing the challenges of cleft lip and palate research in India. Indian J Plast Surg 2009;42(suppl):9-18.
2. Mossey PA, Little J. Chapter 12: Epidemiology of oral clefts: an international perspective. In: Wyszynski DF, editor. Cleft lip and palate. From origin to treatment. Oxford University Press (August 2002) ISBN: 0-19-513906-2. 2002. p. 127-58.
3. Dvivedi J, Dvivedi S. A clinical anddemographic profile of the cleft lip and palate in Sub-Himalayan India: A hospital-based study. Indian J Plast Surg 2012;45:115-20.
4. Orlagh H, Donald B, Peter H, Chris J. The psychosocial effects of cleft lip and palate - A systemic review. Eur J Orthod 2005;27:274- 83.
5. Shivkumar, status of human development in Hyderabad-karnataka region. IJSRR 2019,8(2),4284-4293
6. Vasan N. Management of children with clefts of the lip or palate: An overview. NZ Dent J 1999;95:14-20.
7. Orkar KS, Ugwu BT, Momoh JT. Cleft lip and palate: The Jos experience. East Afr Med J 2002;79:510-3.
8. Zhou QJ, Shi B, Shi ZD, Zheng Q, Wang Y. Survey of the patients with cleft lip and palate in China who

were funded for surgery by the Smile Train Program from 2000 to 2002. Chin Med J (Engl) 2006;119:1695-700.

9. Yi NN, Yeow VK, Lee ST. Epidemiology of cleft lip and palatein Singapore–a 10-year hospital-based study. Ann Acad Med Singapore 1999;28:655-9.
10. Richard PJ, William PS. Cleft lip and palate. Developmental abnormalities of the face, Palate, jaws and teeth. In: Russel RC, Williams NS, Bulstrode CJ, editors. Bailey and Love's short practice of surgery. 23rd ed. London: Arnold Publishers; 2000. p. 586-9.
11. Blanco-Davila F. Incidence of cleft lip and palate in the northwest of Mexico: A 10- Year study. J Craniofac Surg 2003;14:533-7.
12. IIIPS National Family and Health Survey, India, 1992-93. Mumbai: International Institute for Population Sciences; 1995.
13. Sastri KA. A history of South India: From prehistoric times to the fall of Vijayanagar. 4th ed. Madras: Oxford University Press; 1976. p. 66.