Pattern of Cleft Lip and Palate Deformities and Associated Anomalies at the Orthodontic Unit of the University of Benin Teaching Hospital, Benin City

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ABSTRACT

Objective: Objective: Orofacial clefts constitute the commonest anomalies in the orofacial region. The aim of this study was to characterize patients with CL/P presenting at the Orthodontic unit of the University of Benin Teaching Hospital and to identify the type of accompanying developmental anomalies in the study population.
Methods: This was a retrospective study. Case records of thirty-eight (18 females and 20 males) cleft lip and palate babies who presented for pre surgical orthopaedics from January 2018 to August 2019 at the Orthodontic unit of the University of Benin Teaching Hospital, Benin City.
Results: Majority of the study population were males, 20 (53.0%) while females were 18 (47.0%). Children aged 1 day to 4 weeks constituted majority of the study population 24 (64.0%). CL/P cases was in majority, 18 (48.0%), unilateral cleft deformities on the right side was 21 (55.0%). Only 15.0% of the study population had associated congenital anomalies which includes, femoral hernia 2 (5.0%), holoprosencephaly 2 (5.0%) and syndactyly 2 (5%).
Conclusion: This study showed that more males had cleft deformities, majority of the study population had CL/P and only 15.0 % had associated congenital anomalies.

Key words: Pattern of CL/P deformities, associated congenital anomalies, Nigeria

INTRODUCTION

Orofacial clefts constitute the commonest anomalies in the orofacial region. The worldwide incidence of CL/P is generally estimated to be 1-2 in 1,000 live births (Umweni & Ojo, 2006). Previous Nigerian study reported an incidence of 1 in 2,703 (0.4 in 1000) (Iregbulem, 1982).

The gender ratio among individuals with CLP within the general population is inconclusive, males being affected 1.5 to 2.0 times more frequently than females (Umweni & Ojo, 2006; Mcdonald et al, 2004; English et al, 2009). In a previous study (Bekele et al, 2019), it was reported that cleft deformities was more common in males (52.9%) than females (47.1%). This was similar to findings from previous studies (Eshete et al, 2011; Nahid & Shoreh, 2015). In contrast, more females were reported to have CP than males in a study conducted in Addis Ababa (Eshete et al, 2011; Daniel et al, 1990) and Lahore, Pakistan (Yaqoob et al., 2013).

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In a previous study (Bekele et al., 2019) conducted among neonates in Northern Ethiopia, among 119 cases of clefting, 43.7% had CL/P, 38.7% had CL and 17.6% CP deformities, signifying a higher frequency of CL/P deformities than CL and CP.

Previous study (Eshete et al., 2011) in Addis Ababa, Ethiopia recorded a higher incidence of CL/P than CL and CP. Previous studies (Rajeev et al, 2017; Murthy et al et al, 2004; Reddy et al, 2010) in a South Indian population showed that CL/P is the most frequently occurring cleft anomaly. A contrasting result was recorded by Khajanchi et al (Khajanchi et al, 2015), who observed in their study that the occurrence of CL was the most common cleft abnormality followed by CL/P.

Environmental factors have been associated with increased risk of CL/P including consanguinity, smoking, alcohol ingestion, use of anticonvulsants during pregnancy, as well as insufficient folic acid intake in the pregestational period and first trimester of pregnancy (Desai et al, 2019).

In a previous study (Bekele et al, 2019), observed that 56.5 % of cleft deformities were found unilaterally on the right side while 43.5% were located on the left, while 40.4% of CL/P were located bilaterally. In other studies (Daskalogiannakis et al, 1998; Murthy & Bhaskar, 2009; Jamihan et al, 2016) reported higher left sided unilateral clefts than right side CLs.

Previous study (Bekele et al, 2019) reported that 11.0% of neonates with CLP had associated congenital anomalies. Limb malformations were most commonly seen at 5.9% followed by congenital heart defects (3.4%) and CNS malformations (1.7%). In another study (Al Omari & Al-Omari, 2004) conducted in Jordan, associated malformations of CLP were recorded. Previous study in Addis-Ababa (Eshete et al., 2011), 14.1% of CLP patients had associated congenital anomalies with 7.8%, 4.8% and 1.6% limb, CNS, and cardiac malformations respectively. Previous Iranian study (Yazdee et al., 2011) recorded 13% of CLP neonates associated with other congenital anomalies of the head, face and heart.

The objective of this study was to characterize patients with CLP presenting at the Orthodontic unit of the University of Benin Teaching Hospital and to determine the type of associated congenital anomalies among these children.

MATERIALS AND METHODS

This was a retrospective study. Case records of thirty-eight (18 females and 20 males) cleft lip and palate babies who presented for pre surgical orthopaedics from Jan 2018 to August 2019 at the Orthodontic unit of the University of Benin Teaching Hospital, Benin City, Nigeria. Data extracted from case notes include, age at the time of presentation, sex, birth order, parents' occupation, type of cleft, site distribution, associated congenital anomalies. The data collected was subsequently tabulated and analyzed using the IBM SPSS version 20 (IBM Corps.) Variables were tabulated with frequencies and percentages determined.

RESULTS

Table 1 showed the sex distribution of respondents. 18 (47.0 %) of the study population were females while 20 (53.0 %) were males.

Table 2 showed the age distribution of the study population. 24 (64.0%) of the study population were 1 day to 4 weeks old, 12 (32.0%) were >4 weeks to 12 months old and 2 (4.0%) were >12 months to 18 months.

Table 3 showed the distribution of cleft type among the study population. 15 (40.0 %) had cleft lip, 18 (48.0%) had CL/P, and 5 (12.0%) had CP.

Table 4 showed the side distribution of cleft deformities among the study population. 6 (15.0%) had bilateral clefts, 21 (55.0%) had unilateral cleft on the right side, and 11 (30.0%) had unilateral cleft on the left side.

Table 5 showed the associated congenital anomalies among the study population. 32 (85.0%) had no associated congenital anomaly. 2 (5.0%) had femoral hernia, 2 (5.0%) had holoprosencephaly while 2 (5.0%) had syndactyly.

Table 1: Sex Distribution of Study Population

Sex	Frequency	Percent
Female	18	47.0
Male	20	53.0
Total	38	100

Table 2: Age Distribution of Study Population

Age	Frequency	Percent
1 day to 4weeks	24	64.0
>4weeks to 12 months	12	32.0
>12 months to 18 months	2	4.0
Total	38	100

Table 3: Cleft Type of Study Population

Cleft Type	Frequency	Percent
CL	15	40.0
CL/P	18	48.0
CP	5	12.0
Total	38	100

Table 4: Side Distribution of Clefts

Side Distribution	Frequency	Percent
Right	21	55.0
Left	11	30.0
Bilateral	6	15.0
Total	38	100

Table 5: Associated Congenital Anomalies in Study Population

Type of Anomalies	Frequency	Percent
Femoral Hernia	2	5.0
Holoprossencephaly	2	5.0
Syndactyly	2	5.0
No Anomalies	32	85.0
Total	38	100

Keys: CL/P- Cleft lip and palate, CP- Cleft palate, CL- Cleft lip

DISCUSSION

Orofacial clefts constitute the commonest anomalies in the orofacial region. The worldwide incidence of CL/P is generally estimated to be 1-2 in 1000 live births (Umweni & Ojo, 2006). In this study 20 (53.0%) of the study population were males while 18 (47%) were females. Previous studies (Umweni & Ojo, 2006; Macdonald et al., 2004; English et al., 2009; Bekele et al., 2019; Eshete et al., 2011; Nahid & Shoreh, 2015) showed more males being affected 1.5 to 2.0 times more frequently than females, which is similar to findings from this study. In contrast to findings in this study, more females were reported to have CP than males in previous studies (Daniel et al, 1990; Yaqoob et al, 2013).

In this study, majority of the population 18 (48.9%) had CL/P, while 15 (40.0%) had CL and 5 (12.0%) had CP. Previous studies (Bekele et al, 2019; Eshete et al, 2011; Rajeev et al, 2017; Murthy et al, 2004; Reddy et al, 2010) recorded a similar pattern of result. Previous study (Khajanchi et al., 2015) differed from this study because they observed that CL was the most common cleft abnormality followed by CL/P.

In this study, majority of the study population had unilateral cleft on the right side, 21 (55.0%), the left side had 11 (30.0%), while bilateral clefts were 6 (15.0%). This was similar to findings from previous study (Bekele et al., 2019) which reported that the majority of cleft deformities were found unilaterally on the right side. Findings from previous studies (Daskalogiannakis et al, 1998; Murthy & Bhaskar, 2009; Jamilian et al, 2016) was at variance with this study as they reported higher left sided unilateral clefts.

In this study, majority of the study population 32 (85.0%) had no associated congenital anomalies, while 6 (15.0%) had associated congenital anomalies, which are femoral hernia, holoprosencephaly, and syndactyly. Previous studies (Bekele et al., 2019; Al Yazdee et al, 2011) reported various congenital anomalies, which are limb malformation, congenital heart defects, CNS malformation.

In conclusion, this study showed that there were more males with cleft disorders at the Orthodontic unit of University of Benin Teaching Hospital during this study period, majority of the population was aged 1 day to 4 weeks, majority had CL/P and only 6 (15.0 %) had associated congenital anomalies.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

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