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CASE REPORT

CARIES EXPERIENCES AND ORAL HYGIENE STATUS AMONG THE CHILDREN WITH REPAIRED CLEFT LIP AND/OR PALATE IN BENGALEE POPULATION, NORTH KOLKATA, WEST BENGAL

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ABSTRACT

Aims: The aim of the present study is to determine differences in the dental caries experience, gingival health among 4-14 year old Bengalee children with repaired cleft lip and /or palate in North Kolkata, West Bengal

Study Design and Methods and Material: Forty five children of age group 4-14 years, with repaired cleft lip and /or palate selected as study sample who were sub-grouped according to gender and age. Children were clinically examined for dental caries and oral hygiene status. For caries assessment DMFT index for mixed & permanent dentition and dmft index for primary dentition were used. Assessment of oral hygiene status was done using OHI-S. In case of a child with primary dentition deciduous second molars &deciduous incisors were examined for OHI-S.

Statistical analysis used: All the data were recorded, tabulated and arranged in excel sheet to obtain mean value, standard deviation, percentage and p value by utilizing SISA software.

Results: Mean caries scores were slightly higher in female as compared to male children though it was statistically insignificant. Mean caries score in primary dentition is slightly higher as compared to mixed dentition & permanent dentition. Few children (8.88%) had good oral hygiene and a great majority (91.12%) of the children had either fair or poor oral hygiene.

Conclusions: Based on this study it can be concluded that very high caries experience in both primary and mixed dentition and poor oral hygiene in children with repaired cleft lip&/ palate of both sexes could be attributed to low priority of dental care for these children because of the parents' focus on the numerous medical procedures required to correct the birth defects during early childhood and the presence of deformity and surgical scars which makes it difficult to maintain good oral hygiene and to control plaque.

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INTRODUCTION

Oro-facial clefts are a major public health problem affecting 1 in every 500 to 1000 births worldwide (Owens, 1985) and 1 in every 750 births in India. According to World Health Organization (2001), every 2 minutes a child is born with a cleft and in India alone three infants are born every hour with clefts.

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The treatment of cleft lip and /or palate is a team approach and repeated invasive surgical procedures, orthodontic correction, other treatment and long term follow up are essential (Schulte, 1999). Even after long term treatment some complications such as residual cleft, narrow arch, surgical scar, under developed premaxilla, higher caries prevalence, poor oral hygiene, speech difficulties and articulation problems may persist (Kumar *et al*., 1991). Children with clefts rarely escape dental complications. Since these children and their parents give more importance to the surgical correction of their clefts and neglect their dental health, they tend to have more poor oral health as compared to that of normal children (Schultes *et*

al., 1999 and Lauterstein, 1962). Johnsen and Dixon (1984) found more carious lesions in the deciduous incisors of cleft children than non-cleft children in United Kingdom (Johnsen and Dixon, 1984). The aim of the present study is to determine differences in the dental caries experience and gingival health among 4-14 year old Bengalee children with repaired cleft lip and /or palate in North Kolkata, West Bengal.

SUBJECTS AND METHODS

Forty five children of age group 4-14 years, with repaired cleft lip and /or palate were selected as study sample according to the inclusion and exclusion criteria from the Department of Plastic surgery, R.G.KAR Medical college & Hospital,Kolkata and Department of Pedodontics & Preventive Dentistry, of Guru Nanak Institute of Dental Science and Research,Kolkata after obtaining approval from the concerned authority and respective ethical committee.

Inclusion criteria

- Patient with repaired cleft lip and/or palate
- Age of the CLP patient 4-14yrs
- Patient with Bengalee ethnicity

Exclusion criteria

- Children with multiple anomalies or recognized syndromes
- Patient undergoing orthodontic treatment

The study samples were divided according to their age

Group A:<6yrs. having primary dentition
Group B:6-14 yrs. having mixed or permanent dentition

The study samples were also divided according to their gender

- Male group
- Female group

Informed consent was obtained from their respective parents. The children were examined on a dental chair and/or wooden chair utilizing a mouth mirror and explorer under natural light or light of dental chair. These children were clinically examined for dental caries and oral hygiene status. Children were examined from right rear position and were in upright position. Cheap blower or cotton roll was used to remove any food debris present within the oral cavities. Dentition was recorded utilizing dental mirror. For caries assessment DMFT index for mixed & permanent dentition and dmft index for primary dentition were used. Then DMFT &dmft score were added in case of mixed dentition. For the assessment of oral hygiene status OHI-S was used. In case of a child with primary dentition deciduous 2nd molars &deciduous incisors were examined for OHI-S. All the data were recorded, tabulated& arranged in a excel sheet to obtained mean value, standard deviation & percentage. Chi-square test was performed and p value was obtained by utilizing SISA software.

RESULTS

A total 45Bengalee child with repaired cleft lip and or palate of which26 males and 19 females with a mean age 7.3 years were examined during the study.

Table no. I summarizes the caries experiences among Male and Female groups. All the children in both groups had dental caries. The mean dmft score for male group was 7.26+2.8. The mean dmft score for female group was 7.6(SD 2.73).Mean caries scores were slightly higher in female as compared to male children.

Table 1. Caries experience of the children in relation to their sex

Gender	Mean DMFT/def	SD	P value
Male	7.269231	2.822165	0.7186
Female	7.666667	2.738613	

Table 2. Caries experience of the children in relation to their age

Age	Mean DMFT /deft	SD	P value >0.05
4-6 yrs	9.69	4.01	
>6 yrs	7.33	4.65	

Table 3. Describes oral hygiene status in relation to gender

Gender	Oral hygiene			Total(%)
	Good(%)	Fair(%)	Poor(%)	
Male	2 (7.69%)	17 (65.38%)	7 (26.92%)	26
Female	2 (10.52%)	12 (63.15%)	5 (26.32%)	19

Table 4. Oral hygiene status in relation to age

Age	Oral hygiene			Total(%)
	Good(%)	Fair(%)	Poor(%)	
4-6 years	2 (16.66%)	7 (58.33%)	3 (25%)	12(100)
>6 years	2 (6.06%)	14 (42.42%)	16 (48.48%)	33(100)

Fig. 1. Intra oral pictures of children with repaired cleft lip and palate

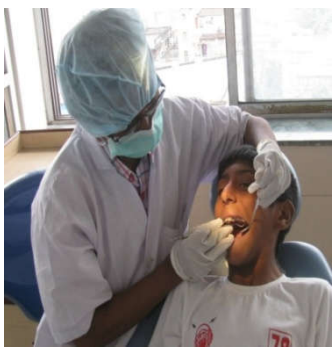

Fig. 2. Examination of children with cl/cp

However, the differences failed to reach a statistical significance (p>0.05). Mean caries score in primary dentition is slightly higher as compared to mixed dentition & permanent dentition (Table II). However, the differences failed to reach a statistical significance (p>0.05). Very few children (8.88%) had good oral hygiene and a great majority (91.12%) of the children had either fair or poor oral hygiene. There was no statistically significant difference (p>0.050) between oral hygiene status in relation to gender of the cleft children. (Table III). The younger cleft children had comparatively better oral hygiene status as compared to the older group (Table IV). However; the difference was not statistically significant (*p>.05). There was no correlation (p>.05)* between caries experience and oral hygiene status in both the age groups.

DISCUSSION

A total 45 participants were examined. Dental caries were measured by dmft/DMFT index. Studies conducted on the caries experience of young cleft lip and palate children have shown considerable variation in their finding (Gaggl, 1999). The present study demonstrated a very high caries experience in both primary and mixed dentition. The findings of this study are in agreement with several other studies. Johnsen & Dixon (1984)[5] found more carious lesions in the deciduous incisors of cleft children than non-cleft children in United Kingdom. The severity of caries and prevalence are known to vary with age.[7] In primary dentition, the effects are cumulative until about 7 years of age, after which the effects decline as the primary teeth begin to exfoliate (Fraser, 1961). A high level of caries in cleft children could be attributed to low priority of dental care for these children because of the parents' focus on the numerous medical procedures required to correct the birth defects during early childhood (Akos, 1985). More than half of the cleft children demonstrated poor oral hygiene in this study. Similar findings were reported in other studies in agreement to their study (Fraser, 1961; Akos, 1985; Ahluwalia, 1985; Paul, 1998; Chapple, 2001). The poor oral hygiene in cleft children could be attributed to the deformity and surgical scars which makes it difficult to maintain good oral hygiene and to control plaque (Dhallof, 1989). So it is essential to help parents understand the road to good oral health for their child by educating them on: Oral environment. The application of an intensive, individualized oral health preventive program, focused on remineralisation of the initial caries, is imperative. In addition, it is the role of the consultant in pediatric dentistry to ensure that these patients receive appropriate primary care regular checkups, radiographs, oral hygiene advice, diet advice, and appropriate fluoride supplementation and, when required, appropriate referral for secondary care (Bokhout *et al*., 1997; Turner, 1998 and Bian, 2001).

Conclusions

Based on this study it can be concluded that very high caries experience in both primary and mixed dentition and poor oral hygiene in children with repaired cleft lip&/ palate of both sexes could be attributed to low priority of dental care for these children because of the parents' focus on the numerous medical procedures required to correct the birth defects during early childhood and the presence of deformity and surgical scars which makes it difficult to maintain good oral hygiene and to control plaque.

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