



KAP STUDY ON PRESURGICAL MANAGEMENT OF CLEFT LIP AND PALATE INFANTS AMONG PRACTITIONERS AND POSTGRADUATES OF PEDIATRIC DENTISTRY IN KERALA.

Dental Science

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ABSTRACT

Presurgical infant Orthopedics reduces the width of cleft gap to achieve an optimal alignment of the cleft segments and to allow surgical repair with minimal tension. Pedodontists should have the knowledge and practice of handling these patients in their daily practice. Hence this study was undertaken to investigate the perception of Pedodontists and post graduates of Pediatric Dentistry in Kerala regarding the pre surgical management of Cleft lip and palate infants.

A total of 134 Pedodontists and post graduates were interviewed through an online survey. Significant association was found between experience of the dentist and the frequency with which they reported seeing infants with CL/CP and the type of treatment rendered.

There is less exposure among Pedodontists and postgraduates regarding the presurgical orthopaedic techniques which needs to be reinforced through meaningful continuing dental education and training programs.

KEYWORDS

Cleft lip and palate, Presurgical orthopaedics, Pedodontists, Kerala.

INTRODUCTION

Cleft means 'split' or 'separation'. It is a birth defect that occurs when tissues of the lip and/or palate of the foetus do not fuse very early in gestation period. This is the most common congenital malformations of the head and neck and second most common congenital malformation of the entire body, second to clubfoot. The incidence of clefts in the Indian population is not precisely known; it is estimated that between 28,000 and 35,000 children are born with clefts in India each year, or about 1 out of every 500 to 800 live births.^{1,2,3} Only half of the cleft cases in India were treated by a trained surgeon. This results in a backlog of about one million untreated clefts in India.³

During the last forty years, Pre surgical infant procedures became integrated into the comprehensive care protocol for patients with clefts in many teams around the world. The treatment of Cleft lip and palate patients presents challenges for the Pedodontists which act as a barrier to the provision of high quality care. Identification of such barriers can be the first step in addressing the deficiencies. Till now no survey has been undertaken to assess the Knowledge attitude and practice of Pedodontists regarding the presurgical orthopaedic techniques for the management of infants with Cleft lip and palate in India.

AIM OF THE STUDY

Aim of this study is to investigate the perception of Pedodontists and post graduates of Pediatric Dentistry in Kerala regarding the pre surgical management of Cleft lip and Palate infants.

MATERIALS AND METHODS

The Study was approved by the Institutional Ethical Committee. Questionnaire was designed and developed consisting of 21 questions. Content validity was assessed by a panel of 5 experts. Aiken's V was used to quantify the concordance between experts for each item.

A total of 134 Pedodontists and post graduates were interviewed through an online survey. Pedodontists who are teaching and practicing in Kerala and post graduates of Pediatric dentistry from various institutes in this state were included in this study.

All the data was entered and statistical analysis was performed using the SPSS program version 20. Predictor variable included number of cases attended, choice of impression materials and techniques used and experience with Presurgical orthopaedic techniques. Output variable was the number of years of practice. Association between the

output variable and the predictor variable was assessed using chi square test. For all statistical tests, a confidence interval of 95% and significance level of 5% ($P \leq 0.05$) was adopted.

RESULTS

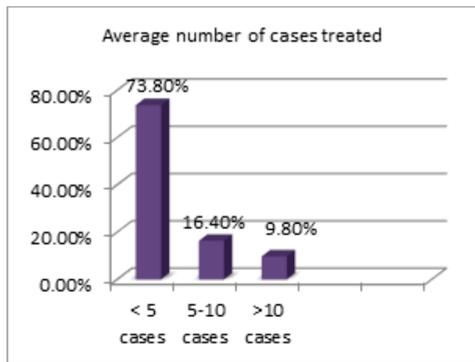
The response rate of survey was 60.44% (Of the 134 questionnaires sent, 81 responded). 81% of the respondents had less than 10 years of clinical experience, while 6.6% of Pedodontists had more than 20 years of experience.

Only 30.9% of the study population have attempted Presurgical Orthopaedic Appliance Therapy in CLCP patients. 43.3% concluded that upright position is best impression technique and 53.4% stated elastomeric impression material is the ideal material for impression. 87.2% responded that their postgraduate curriculum included CLCP management. 54.4% of the Pedodontists were updated in Pre Surgical Orthopedics. 73.8% have treated only less than 5 cases in their clinical practice. 72.3% of the Pedodontists achieved favourable outcome with their Presurgical orthopaedic appliance therapy.

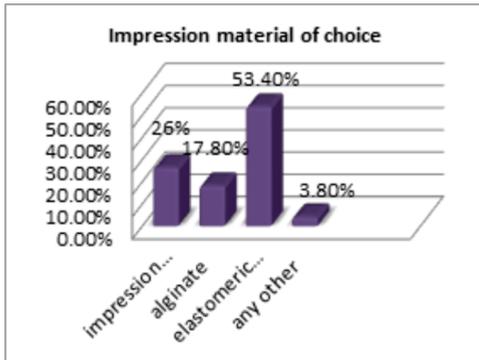
Most commonly practiced technique in Presurgical orthopaedics is Naso alveolar moulding. 76.7% had experience with Naso alveolar moulding. 72.9% have reported that patients were regular in their treatment procedure and 75% turned for follow up treatment.



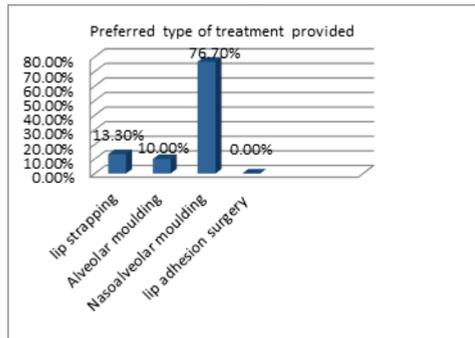
Graph 1: Distribution of sample based on number of years of practice



Graph 3: Distribution based on the cases treated with pre surgical orthopaedics



Graph 4: distribution based on impression material of choice



Graph 5: Distribution based on preferred presurgical orthopaedic technique

Table 1: Association of years of practice with cases attended, treatment and presurgical technique preferred.

	Years of practicing as a dentist (p value)
Number of cases attended	0.001
Type of treatment	0.016
Preferred technique for the treatment of CL/CP infants	0.043

*p < 0.05 (Significant) **p < 0.001 (Highly significant)

Significant association was found between experience of the dentist with the frequency with which they reported seeing infants with CL/CP (p=0.001).

The type of treatment rendered to infants with CL/CP were significantly associated with years of practicing (p = 0.01).

DISCUSSION

Of the 134 questionnaires sent online, only 81 responded. The response rate was 60.44%. Low response rate is cited commonly as a weakness of online surveys.^{4,5,6} Response rates to online surveys among dentists vary from 2.5 to 26%.^{7,8,9}

We have observed that 60% of Pedodontists are comfortable in treating CLCP infants but only 30% of them are practicing Pre surgical infant orthopaedics. This may be due to lack of knowledge and awareness of PSIO or due to less number of cases they encounter or due to reduced confidence levels in handling such patients.

Majority of the practioners favoured upright position for taking impression and elastomer was the material of choice. Yang et al reported using alginate impressions using a pretrimmed customized pediatric tray with the baby in the most upright position, being held by one of the parents.¹⁰ Alginate impression when used in thin sections has the disadvantage of breaking away from the tray when the tray is removed from the mouth. Such broken pieces may remain in deeper section of the cleft and may even enter the nasal cavity making their removal difficult.¹¹ Heavy body silicone impression material was used by Grayson and Shetye with the infant held upside down.¹² Prasanth et al and Retnakumari et al used heavy body silicone material and the infant was kept in supine position during the procedure.^{13,14}

Pedodontists who were practicing for more than 20 years found to be using Nasoalveolar moulding (NAM) technique frequently than other procedures and this was statistically significant (p=0.01). The objective of the presurgical NAM is to reduce the severity of the original cleft deformity and thereby enable the surgeon to achieve better repair of the alveolus, lip and nose.¹² The primary shortfall of all PSIO techniques other than NAM is that they neglect to address the nasal cartilage deformity during the period of cartilage plasticity; often results in the need to perform more surgical revisions.^{15,16} Barillas et al showed that nasal cartilages were more symmetric in infants treated with NAM than in those treated with surgery alone in unilateral cleft lip and palate cases.¹⁷ Garfinkle et al reported near-normal anthropometric nasal measurements for patients with Bilateral Cleft Lip and Palate treated with NAM compared with a noncleft sample up to age 12 years.¹⁸

Though Pedodontist is considered as a memeber in the multidisciplinary team for CLCP worldwide; less exposure, lack of experience, difficulty with impression procedures in infants and lack of training are some of the reasons for reduced confidence in handling these unfortunate infants among Pedodontists in Kerala.

CONCLUSION

This study reveals that there is low exposure and confidence among Pedodontists as well as postgraduates regarding the Presurgical orthopedic techniques which needs to be reinforced through meaningful continuing dental education and training programs. The need for PSIO has to be emphasized on all these specialists to deliver better quality care for CLCP infants.

RECOMMENDATIONS

1. Impart and conduct training programs in Presurgical orthopedics to enhance and improve the quality of patient care for both postgraduates and practioners.
2. The parents and caregivers of these children should be adequately educated and trained about PSIO techniques, as an adjunct to facilitate surgical repair in infants with CLCP before surgery.
3. Pedodontists in India should not be just the part of cleft lip palate team but should actively participate and render better services to cleft lip and palate patients.

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