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Case Report

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A FEEDING APPLIANCE FOR A NEWBORN BABY WITH CLEFT PALATE – A CASE REPORT

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ABSTRACT

Clefts are among the most common congenital malformations of craniofacial region. Cleft palate is the congenital failure of the palate to fuse properly, forming a grooved depressions or fissure in the roof of the mouth. Feeding problems frequently associated with cleft palate which make it difficult for the infant to maintain adequate nutrition. This article presents the prosthodontic management of an infant with a cleft palate through fabricating a feeding plate.

KEYWORDS: Cleft palate, Feeding appliance, Obturator.

INTRODUCTION

Cleft lip and palate are structural abnormalities that occur in the embryonical period of life between the 4th and 10th weeks with the incidence of 0.28 – 3.74 per 1000 live births. More males than females were affected and more males had complete clefts. Unilateral clefts were most common on the left hand side.[1] Cleft of platae, alveolus and lip may be syndromic or non-syndromic. The syndromic types are by definition associated with other malformation and include the Pierre Robin syndrome, Treacher Collins malformation, Trinomics 13 and 18, Apert's syndrome, Stickler's syndrome as well as Waardenburg's syndrome. The etiology of non-syndromic cleft lip and palate is multifactorial and heterogenous, both genetic and environmental factors have been implemented.[2]

Patients with cleft lip and palate have many problems associated with oral and nasal cavity function. One of the most important problems with this deformation is difficulties with feeding due to lack of sufficient negative intraoral pressure which prevents regurgitation of food into the nasal cavity. Nasopharyngeal infections and otitis media are also frequent complications of food regurgitation.[3]

A feeding plate is a prosthetic aid designed to obturate and to help infant in generating negative pressure within the oral cavity, which is necessary for sucking. Also, it corrects the tongue posture and helps it not only perform its functional role in the development of the jaws but also facilitates swallowing. In addition it has been shown that a feeding plate stimulates the spontaneous growth of the maxillary segments toward each other by preventing the tongue from entering the defect.[4] Reducing the incidence of Otitis media and nasopharyngeal infection by minimizing the passage of food into the nasopharynx are the other advantages of a feeding plate. Feeding plate restores the basic function of mastication, deglutition and speech production until the cleft lip and/or palate can be surgically corrected.[5] This article presents a case report of a 30 days old infant with cleft palate to whom feeding obturator was delivered.

CASE REPORT

A 30 days infant was reported to the Department of Pedodontics with the complaint of difficulty in feeding and nasal regurgitation. The medical history of the child was non-contributory. On introral examination class II type of cleft palate (Veau classification) was found. It was decided to fabricate feeding obturator for the infant immediately after consulting with the parents.

The patient along with one of the parents was seated in dental chair. Infant was held with his face toward the floor in order to prevent aspiration in the event of vomiting and also asphyxiation due to airway obstruction. Prefabricated tray is used in this case for impression making and is adjusted according to the size of cleft. An elastomeric impression was made in prefabricated tray ensuring that the infant made sucking motions during impression making, as this helps to provide better moldability. The impression was poured with dental stone and the cast was prepared. The cast with significant undercuts in the cleft area were blocked with wax. Separating media was applied over the cast

using autopolymerizing acrylic resin. The obturator was fabricated and 8 inch floss was attached to the appliance during polymerization to provide safety incase of accidental swallowing. Obturator was trimmed, finished and polished. The appliance was delivered and parents were instructed about placement and removal and also cleaning. The parents were instructed to have a follow up appointment regularly.

Fig – 1: Class II type of Cleft palate (Veau classification).

Fig – 2: Feeding plate – Obturator.

Fig – 3: Insertion of Obturator.

DISCUSSION

Cleft palate is one of the most common birth defects. It leads the complication with facial growth, dental arches with missing teeth and speech which have impact on social and psychological problems in the child and parent. Cleft palate is oronasal defect which leads to the disability to create negative pressure that helps for sucking in neonates.[6]

The etiolgy of cleft is still unknown, but both genetic and environmental factors may be responsible for many congenital malformations that can result from the developmental process failing to reach some developmental end point and threshold. The cause of the familial aggregation of the disease may be genetic, environmental or both. Poor nutrition, viral infection and medical drugs are among the most important etiological factors and environmental risk factors are also to be equally important. Interactions between maternal and foetal genes are significant in the etiolgy of the disease.[7]

Cleft palate also affects several systems and functions that include facial growth, dentition, speech, hearing and genetic aspects because of the complex mode of inheritance. Child born with cleft have many problems that need to be solved for successful rehabilitation by a multidisciplinary team approach. Management of the patient with a cleft begins with immediate attention to the need of the new-born. Feeding problems are often associated with cleft anomalies, which make it difficult for the infant to maintain adequate nutrition.[8]

Adequate nutrition is of utmost importance for the growth and developmental of the infant because gaining weight is important for the preparation of the baby for the corrective surgery. However, a cleft palate creates an opening in the roof of the mouth and the infants have difficulties in sucking because the negative pressure cannot be produced in the oral cavity.[9]

Feeding appliance restores palatal contour and cleft; thereby help in creating negative pressure which allows adequate sucking of milk. It helps child to compress nipple easily because it provides a contact point and helps the infant to express milk. It facilitates feeding and reduces nasal regurgitation.[10]

Although multidisciplinary team approach and a comprehensive management of children born with cleft palate is the best that can be done for the patients, however prompt intervention by fabrication of feeding plate can eliminate the immediate problems (i.e.) proper nourishment and prevention of infections for the already debilitated infant. Inadequate nourishment due to difficulty in feeding affects the health and acts as a stumbling block in the milestone of normal development.[11]

CONCLUSION

Cleft palate results in improper nourishment due to difficulty in feeding which affects the health status of the patient act as a psychological block in the milestones of normal development. The feeding obutrator can aid to prevent tongue distortion, stimulate orofacial development, expand the collapsed maxillary segment

and helps to develop palatal shelves. The problems experienced by the cleft palate patients were reduced if a team approach was adopted and specialists were careful to apply skill and experience at all stages and keep the patient under regular review.

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