



Case Report

An interim feeding prosthesis for newborn patient with cleft palate: A case report

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ABSTRACT

Cleft palate and lips are the most common congenital anomalies affecting the new born. It can occur isolated or together in various combination and/or along with other congenital deformities. Most common difficulty occur due to this type of anomalies in newborn children's are difficulty while feeding, which occur because of complete absence of oral seal required during sucking of milk. Early surgical intervention can't be given to such patient till the age of 6 months till that time these patient are treated with interim types of feeding appliances. This case report present a 2-month-old neonate born with cleft palate, assisted with new feeding appliance made of polymathy methacrylate polymer (PMMA).

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1. Introduction

Cleft lips and palate are the most common orofacial anomalies affecting 1.5 per 1000 lives births all over world.¹ This cleft lips and palate can be seen as an isolated defect or in combinations. There are 3.2% chances of isolated cleft lip defect were as 6.8% chances of isolated cleft palate defect (Grosen *et al.*, 2010).² Various Factors are there that can cause these types of defect in newborns this are: Non Genetic (environmental factors i.e smoking, alcohol consumption and others) and genetic (syndromic or non syndromic).³ Newborns with cleft palate have difficulty in feeding and can lead to stunted growth. A feeding aid is a prosthetic device designed to close the gap and restore the separation between the oral and nasal cavities. Various feeding methods have been used in the past to solve the feeding problem. These aids are an inexpensive option for feeding infants with cleft lip and palate. This is to separate the oral and nasal cavities and provide a hard surface to oppose the breast or nipple during sucking.⁴ This article represents a case report of a feeding appliance using a

orthodontic stainless steel wire for retention in an infant with cleft lip and palate.

2. Case Report

A 2-month-old neonate was referred by paediatric department of RIMS to the department of prosthodontics RIMS Ranchi with a chief complain of feeding difficulty due to incomplete orofacial closure (Figure 1). On intraoral examination it was found that patient was having isolated cleft palate. After detail interaction with mother breastfeeding and feeding of infants was a pressing concern at the time, so mothers found it difficult to breastfeed their newborns and it was decided to create a feeding device.

2.1. Procedure

1. A normal table spoon with adequate size covering the defect and normal intraoral anatomy was used to take impression using polyvinyl siloxane material (President Coltene).
2. Cast was poured in dental stone type III (Kalabhai Kal stone; Kalrock) custom tray was fabricated using

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Fig. 1: Cleft palate intraoral view



Fig. 4: Feeding appliance adjusted in intraoral cavity



Fig. 2: Wax up of feeding appliance with metal wire incorporated in it

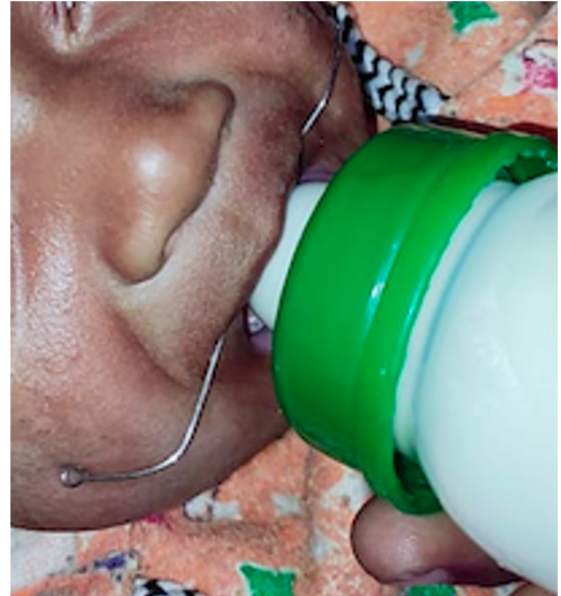


Fig. 5: Patient is able to have proper feeding using appliance



Fig. 3: Final interim feeding prosthesis

PMMA.

3. Over custom tray light body and putty final impression was made.
4. Master cast was made and wax pattern was made, on this wax pattern orthodontic stainless steel wire was incorporated and curing was done.(Figure 2)
5. The prosthetic aid was trimmed, edges were rounded, and polished to avoid any trauma to the surrounding soft and hard tissue.

3. Discussion

During first 6 months surgeries are contraindicated in the patients of cleft,⁵ and during this mean time nutrition and diet is very important accept of child development so feeding appliances are the best option to bridge the gap between oral and nasal cavity and meet the feeding demands of newborn.

Various materials can be used to take impression of these defect such as alginate, compound or silicon materials, but in this case we have used polyvinyl silicon material because chances of aspiration and swallowing was reduced due to high viscosity nature of silicon.⁶

Advantages of using feeding appliance include⁷

1. It helps maintain adequate nutrition by covering the cleft palate and providing a firm platform for the infant to compress the breast and express milk.
2. It assists in normal suckling and thus leads to the development of normal oromotor and swallowing reflexes.

3. It positions the tongue in the correct position, prevents it from entering the defect, and helps the maxilla and maxillary shelf grow towards each other.
4. Reduces the passage of milk into the nasopharynx, reducing the incidence of nasopharyngeal infections and otitis media.
5. Also, useful for pre-operative rhino-alveolar morphology.

4. Conclusion

These types of interim feeding appliances does not involve any high costing and demands of newborn diet can be easily achieved.

5. Source of Funding

None.

6. Conflict of Interest

None.

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