



## Feeding Plate Prosthesis for an Infant with Cleft Lip and Palate: A Case Report

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**ABSTRACT:** The cleft palate is associated with feeding difficulties, dysfunction of eustachian tube, infection and effusion of middle ear, hearing loss, disorders of speech, dental and orthodontic problems. Feeding plate is a prosthetic aid that is designed to seal the cleft and restore the separation between oral and nasal cavities. This clinical report describes fabrication of feeding plate for neonate born with cleft lip and palate.

**Keywords:** Cleft Lip and Palate, Feeding Prosthesis

### I. INTRODUCTION

Cleft Lip and Palate is the most common of the craniofacial congenital anomalies that have an incidence of 0.28 to 3.74 per 1000 live birth globally.<sup>1, 2</sup> There are numerous problems associated with individuals with a cleft lip or palate, which affects the functions performed by the oral and nasal cavities.<sup>2, 3</sup> Feeding plate occludes the cleft and restores the separation between oral and nasal cavities. It creates a rigid platform towards which the baby can press the nipple and extract the milk.<sup>4, 5</sup> According to GPT, feeding prosthesis is an ancillary prosthesis constructed for newborns with cleft palates to permit normal sucking and feeding.<sup>6</sup> It facilitates feeding, reduces nasal regurgitation, reduces the incidence of choking and shortens the length of time required for feeding.<sup>4</sup> The obturator also prevents the tongue from entering the defect and interfering with the spontaneous growth of palatal shelves towards the midline.<sup>4</sup> It also helps to position the tongue in correct position to perform its functional role in the development of jaws, and contributes to speech development.<sup>4</sup> The obturator reduces the passage of food into the nasopharynx thus reducing the incidence of otitis media and nasopharyngeal infections.<sup>4, 7</sup> Feeding plate restores the basic functions of mastication, deglutition and speech production until the cleft lip and/or palate can be surgically corrected.<sup>4</sup> The procedure for fabrication of feeding obturator is described in this case report.

### II. CASE REPORT

11 months old male infant reported to the Department of Prosthodontics, ZA Dental College, AMU, Aligarh, with a history of cleft lip and palate; associated with difficulty in feeding, recurrent respiratory tract infection, nasal discharge and recurrent ear infections (Figure 1). The mother reported that the baby is not able to suckle milk properly and she was not gaining weight. There was no history of craniofacial clefts in maternal or the paternal family of the child. The pregnancy of the mother was uneventful and this baby was the first child. There was no history of previous treatment or surgery for the defect. Intraoral examination revealed a cleft in the soft palate and uvula (Figure 2).

Preliminary impression of the palate was made with an impression compound and low fusing impression green stick compound (Figure 3). With the help of a finger, impression material was carried into the baby's mouth and gently pressed against the hard palate and into the buccal and labial vestibules, while the baby was held in prone position to prevent aspiration in the event of vomiting and asphyxiation due to airway obstruction. Model was prepared by pouring the impression in type III dental stone (Figure 4). The cleft defect in the primary model was blocked out by modeling wax (Figure 5). A feeding plate was fabricated using auto

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polymerized acrylic resin material and retentive tags for floss thread were fabricated with the help of 21 gauge stainless steel wire (Figure 6). All the border of the feeding plate were rounded and polished in order to avoid trauma. Feeding plate was inserted into patient's mouth and it was checked for fit, comfort and retention (Figure 7). Instructions were given to the parents on how to insert, remove, and clean the prosthesis. Parents were given Instruction regarding how to use the obturator during feeding time, remove it after words, and thoroughly clean the baby's oral cavity and cleft with a soft cloth soaked in warm water. The patient was seen after 24 hour later for adjustment, and then patient was followed up regularly after 3 month interval.

### **III. DISCUSSION**

A comprehensive management of children born with cleft lip and palate is best accomplished by the multidisciplinary team approach.<sup>8</sup> Dentist plays an important role in the team which is working closely with medical and allied health specialties.<sup>8</sup> 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.<sup>8</sup>

Feeding appliance restores palatal cleft and aid in creating sufficient negative pressure which allows adequate sucking of milk.<sup>2</sup>It helps child to compress the nipple easily because it provides a contact point and helps the infant to express milk. It facilitates feeding, reduces nasal regurgitation.<sup>2, 9, 10</sup>

### **IV. CONCLUSION**

The feeding obturator should be inserted as early as possible after birth. It helps the infant in nursing, stimulate oral-facial development, helps develop the palatal shelves, prevent tongue distortion and nasal septum irritation, decrease the number of ear infections, expand the collapsed maxillary segment, constrict the expanded anterior part of the maxilla which aids the cleft palate team of health care practitioners and psychological help to the parents.

#### **Figure Legend**



**Figure 1: Infant with Cleft Lip and Palate**



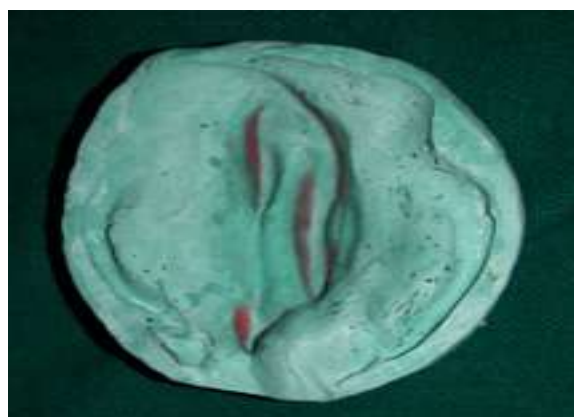
**Figure 2: Intra oral view**



**Figure 3:** Impression made with high and low fusing impression compound



**Figure 4:** Master Cast



**Figure 5:** Defect in master cast blocked out with modeling wax



**Figure 6:** Feeding plate prosthesis



**Figure 7:** Feeding plate in situ

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