INTRODUCTION
Cleft lip and palate is a congenital anomaly affecting the middle third of the face, may be associated with the malformation or agenesis of the teeth close to the cleft. Incidence rate of cleft lip and palate varies from 1:500 to 1:2500 live births. Etiological factors are either hereditary or environmental. These defects are genetically male sex-linked recessive. Environmental factors may be due to viral infections, influence of drugs like excessive use of steroids, antibiotics insulin, antiepileptic drug and exposure to radiations in the first trimester of pregnancy.

Neonates with a cleft palate have difficulty in feeding because the oro-nasal communication diminishes the ability to create negative pressure which is necessary for suckling. In such condition, the baby presses the nipple between tongue and hard palate to squeeze the milk, but this mechanism will fail if cleft is wide and the nipple gets trapped inside the defect. The feeding process is also complicated by nasal regurgitation of food, excessive air intake which leads to frequent choking. Feeding time is significantly longer and causing parental anxiety and causes fatigue both for baby as well as mother.

Literature suggests different approaches to resolve neonatal feeding problems. Specially designed nipples with enlarged openings can increase the ejection of milk with reduced effort. Squeezable bottles appear easier to use than rigid feeding bottles. However, these options are not sufficient for large clefts. The concept of early treatment of cleft palate patients with feeding obturator was pioneered by McNeil. The feeding obturator is a prosthetic aid which restores the separation between the oral and nasal cavities. The feeding appliance covers the cleft palate and creates a platform toward which the baby can press the nipple and extract milk.

This article presents case reports of two infants with cleft lip and palate in whom a feeding appliance as obturator was delivered.

CASE-1
An eight month old infant was brought to the Department of Paedodontics and Preventive Dentistry, K. M. Shah Dental College, Piparia, Vadodara, Gujarat with the chief complaint of difficulty in feeding. On examination, it was found that child was born with unilateral cleft lip and palate on left side according to Veau’s classification Group 3: Complete unilateral cleft of the soft palate, hard palate and lip and alveolar ridge on one side (Fig-1).

After complete examination of the patient, decision was made to fabricate feeding plate to reduce feeding problem. Preliminary impression of the maxillary arch was made with polysiloxane putty material by using handle of no. 0 stock metallic perforated tray. Gauze piece was placed over the impression material to prevent impaction of material in the cleft defect. The infant was held upright by mother to prevent aspiration of any extra material. The tray was seated until the impression material adequately covered the anatomy of the upper gum pads. Once the impression material was set, the tray was removed, and the mouth was examined for residual impression material.

CASE-2
NICU of the Paediatric department of Dhiraj General Hospital, Vadodara had an emergency with complaint for not proper feeding with regurgitation of milk in a 3 month old male. 

ABSTRACT
Cleft lip and palate is a congenital deformity that may be associated with various craniofacial problems and hampers the overall development of the child. It is the commonest congenital deformities involving the or facial region. One of the immediate problems to be addressed in newborn is difficulty in feeding. Early surgical treatment is necessary in most of the condition but may need to be postponed until certain age and weight gain of the infant. The present article is a case report of two infants with cleft lip and palate for whom a feeding obturator as prosthetic rehabilitation was the treatment of choice.

KEYWORDS: Feeding plate, Obturator, Acrylic rehabilitation, Infant, Cleft lip and Palate.
patient. On examination the patient revealed of soft cleft palate i.e. Veau’s Class 1 (Fig.2). The patient was pale with the 2.5 kg weight. Considering all measures feeding plate obturator was planned for the patient. The final impression was made with polyvinyl siloxane putty impression material using acrylic special tray.

**FABRICATION TECHNIQUE FOR FEEDING PLATE**

The impression was then poured with dental stone to obtain an accurate cast. Special tray was fabricated with self-cure acrylic resin material (Fig-3, 4).

Final impression had been made with special tray using polyvinyl siloxane putty material (Fig-5). The impression was poured with dental stone to make master cast and all the undercuts and the cleft space were blocked with wax (Fig-6, 7). The feeding plate was fabricated of hard self-cure acrylic lined by soft denture material in the centre. Two retentive arms were made from 21 gauge stainless steel wire with tags at the end of wire component for retention of the feeding plate (Fig-8-10).

Finally, appliance was placed in infant’s oral cavity. The micro pore tape had been used to stabilize the retentive arms and feeding plate (Fig 11, 12). Parents were instructed and taught how to place the plate in the oral cavity and how to feed the infant. Parents were asked to maintain the oral hygiene of the infant and regarding cleaning of feeding plate.

**Follow up and outcome:**

During one month follow up visit, we have observed that:

**Case 1:** Pre-operative weight: 3.5 kg, Post-operative weight: 3.9 kg

**Case 2:** Pre-operative weight: 2.5 kg, Post-operative weight: 3 kg

With the help of feeding appliance, significant improvement in the nutritional status and health of child has been observed. The adequate weight of babies has also increased after using feeding plate obturator.

**DISCUSSION:**

Maintenance of adequate nutrition is essential for the growth and development of the infant. A cleft palate creates an opening in the roof of the mouth and due to that the infants have difficulties sucking as necessary negative pressure which is needed for sucking cannot be produced in the oral cavity. Similar problem was observed in present both cases. Since definitive surgical treatment was not planned at least for 2-3 years, we have planned an appliance which can help the baby to maintain the normal suckling mechanism. Feeding appliance becomes must in Cleft lip and palate (CLP) babies considering the health of the infant.

Surgery may completely close the inside the defect. However, timing of surgery differs be as early as 10 to 12 weeks of age or 12 to 18 months or even well past 12 months of age. The feeding obturator is designed to obturate the cleft and restores the separation between the oral and nasal cavities. It creates a suitable platform for baby so they can press the nipple and extract milk which facilitates the feeding. This type of prosthetic aid reduces regurgitation, incidence of choking, and also shortens the length of time required for feeding. The obturator also prevents the tongue from entering the defect and developing the proper tongue position with the help of a feeding appliance. It guides the tongue in the proper position to perform its functional role in the development of the jaws which also facilitate the speech development. The obturator also reduces the passage of food into the Nasopharynx reducing the incidence of nasopharyngeal infection.

A variety of impression materials may be used such as alginate, low fusing compound, and polysulfide impression material to make a definitive impression of defect in cleft lip and palate patients. In the present cases, a putty-type polyvinyl siloxane was used to make the impression a sits high viscosity property, reduces the danger of aspiration or swallowing. The necessary precautions were taken like, covering the impression material with gauze to avoid impaction of impression material in the defect.

In present cases, feeding plate appliances were made of heat cure acrylic resins which are not soft in nature, can harm the patient but these provide rigid platform necessary for suckling. These type of appliances are less expensive as compared to other materials. Neonatal feeding appliance is traditionally fabricated of acrylic resin creates a rigid platform, towards which the infant can press the nipple and feed, it reduces nasal regurgitation and the time required for feeding. The feeding plate helps to position the tongue away from the cleft area in the correct position to allow spontaneous growth of palatal shelves towards each other. The infant will improve the health thus reducing parents’ frustration towards feeding problems. In our cases also it was observed that the weight of the babies have improved after proper treatment protocol.
**FIG. 1** Fig 1: Veau’s classification Group 3

**FIG. 2** Veau’s classification Group 1

**FIG. 3** Special tray after finishing and polishing of case 2

**FIG. 4** Tissue surface of special tray of case 2

**FIG. 5** Final impression using special tray of case 1

**FIG. 6** Master cast of case-1

**FIG. 7** Master cast of case-2

**FIG. 8** Feeding plate obturator for case-1
Fig. 9 Feeding plate obturator for case-2

Fig. 10 Tissue surface of feeding plate obturator for case-2

Fig. 11 Placement of feeding plate in the infant’s mouth with micropore tape

Fig. 12 Feeding plate obturator for case-2

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