Case Report

A feeding appliance for a newborn baby with cleft lip and palate

Abhay Agarwal, Vivek Rana, Shabina Shafi

Department of Pedodontics, Subharti Dental College, Meerut – 250 002, Uttar Pradesh, India

Address for correspondence:
Dr. Vivek Rana, Department of Pedodontics, Subharti Dental College, Delhi–Haridwar Bypass Road, NH-58, Meerut – 250 002, Uttar Pradesh, India. E-mail: drvivekrana11@rediffmail.com

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ABSTRACT

A child born with cleft lip and palate may experience difficulties while feeding. Obtaining a good seal of the oral cavity can be difficult due to the incomplete facial and palatal structures. Nasal regurgitation and choking are common in infants with cleft palate because of inability of the palate to separate the nasal and oral cavities. The case presented here is a 3-day-old neonate born with cleft lip and palate, assisted with a new feeding appliance made with ethylene vinyl acetate using pressure moulding technique in biostar machine for proper feeding.

Key words: Cleft lip and palate, feeding appliance, obturator

Introduction

Cleft lip and palate are one of the most common structural birth defects. Its consequences affect several systems and functions that include feeding, facial growth, dentition, speech as well as the social and psychological problems which have an impact on the child and parent.[1] Neonates born with cleft lip and palate have oronasal communication which diminishes the ability to create negative pressure necessary for suckling.[2,3] Compressing the nipple between tongue and hard palate to squeeze out the liquid becomes difficult. Feeding appliances are often required by such patients. A feeding appliance is a device that creates a seal between the oral and nasal cavities and helps the infant to express milk.

Case Report

A 3-day-old neonate reported to the Department of Pedodontics and Preventive dentistry, Subharti Dental College, Meerut, with a chief complaint of feeding. On examination, it was found that the child was born with unilateral cleft lip and palate on right side [Figure 1]. After discussion with the child's parents, it was found that the mother had difficulty in breast feeding the newborn; hence, a feeding appliance was planned for feeding the newborn. A preliminary impression was made with an impression compound material. A cast was poured on the preliminary impression obtained. A custom tray was then fabricated by using self-cure acrylic resin [Figure 2]. With the help of the custom tray, a secondary impression was made using rubber base impression material [Figure 3]. Final cast was obtained and all the undercuts were blocked [Figure 4]. A feeding appliance was then made on the final cast by using pressure moulding technique in biostar machine [Figure 5]. Ethylene vinyl acetate was used for fabrication of the feeding appliance [Figure 6]. Ethylene vinyl acetate is available in market as bioplast® (thickness 1 mm). A floss was attached to the feeding appliance [Figure 6] because it prevents swallowing and easy retrieval of appliance. Then, the feeding appliance was placed in the oral cavity of the newborn [Figure 7] and child was easily fed with the help of the appliance [Figure 8].

Discussion

Cleft lip and palate is one of the most common congenital anomalies. Treatment of this deformity presents a serious problem for health delivery systems all over the world. Sucking efficiency is one of the most common difficulties related to feeding in children with cleft

Figure 1: Preoperative view

Figure 2: Custom tray

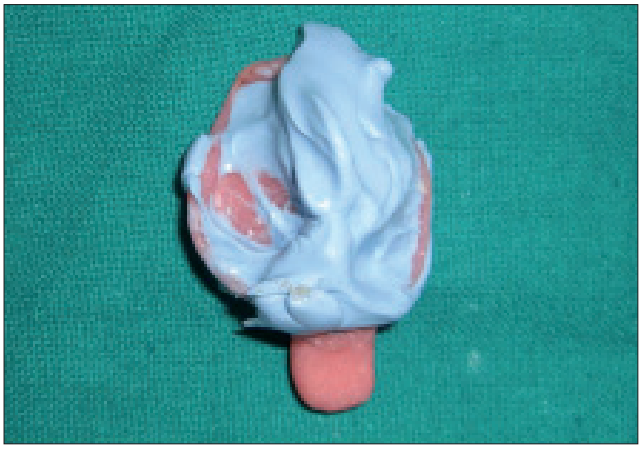

Figure 3: Secondary impression with rubber base impression material

Figure 4: Final cast

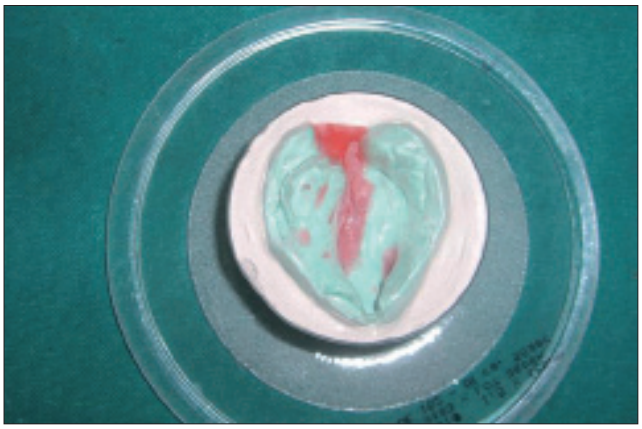

Figure 5: Feeding appliance made by using pressure moulding technique in biostar machine

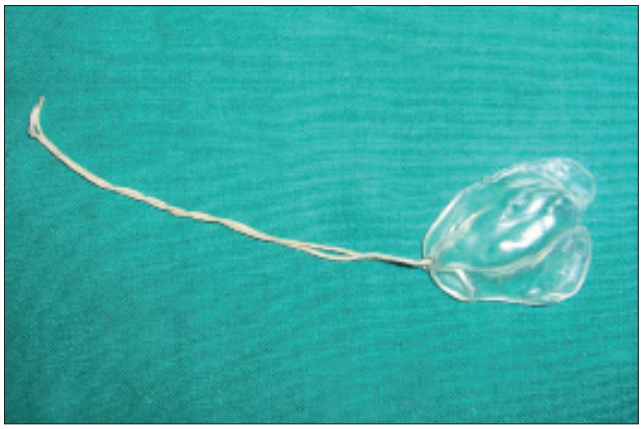

Figure 6: Feeding appliance of ethylene vinyl acetate attached with floss

lip and palate.[4] In order to be successful in sucking, coordination of the intraoral muscles is important, which may be difficult in children with cleft lip and palate. Breast feeding a child with a cleft palate can be challenging. The opening in the palate makes it impassible for the child to create suction. The baby may have difficulty in locating a place on the palate to press the breast against and to express milk. However, the amount of difficulty will vary based on the severity of the cleft. In order to be successful in breast feeding a child with a cleft palate, the mother needs to implement some modifications.[5] An example of a position that can be used is the modified football hold (child in usually held at an angle of 45°), which minimizes nasal

Figure 7: Feeding appliance placed in the oral cavity of the newborn

Figure 8: Feeding with the help of appliance

regurgitation. There are a variety of feeding devices that can be very useful in successfully feeding an infant with a cleft lip and palate, like a plastic squeeze bottle, soft nipple, specially designed nipple with enlarged opening and wide based nipple (useful in sealing off the cleft lip). A feeding obturator is a device that creates a seal between the oral and nasal cavities[3] and controls the flow of milk. Feeding device is inserted over the infant's hard palate, which allows him or her to compress the nipple easier because it provides a contact point and helps the infant to express milk. It facilitates feeding, reduces nasal regurgitation[6,7] and shortens the length of time required for feeding. Appliance acceptability is better than acrylic used in the past.

Feeding appliance made with ethylene vinyl acetate has many advantages over acrylic feeding appliance, which are as follows:

1. smoother surface
2. soft in nature
3. no need of retentive wire

A feeding appliance can be costly and needs to be replaced as the child grows to fit his or her mouth. Oral hygiene is also a concern because it is a plastic appliance, which can cause irritation to the palate.

Conclusion

Inadequate nourishment due to difficulty in feeding affects the health and acts as a stumbling block in the milestones of normal development. A feeding appliance given to the infant effectively separates the oral cavity from the nasal cavity and is of great help in feeding.

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