

Feeding Intervention for Cleft Lip and Palate Child

Surendra Sharma
Associate Professor,
Amity College of Nursing,
Amity University, Gurgaon, Haryana.

Abstract:

Cleft lip and palate is a commonly observed congenital maxillofacial defect. One of the most important problems with clefts is the feeding. When a baby is born with a cleft palate, baby faces major feeding difficulties, whether feed by breast, bottle, or both. An affected infant cannot produce negative pressure in the oral cavity and therefore cannot move the bolus backward to the pharynx. The degree of difficulty depends upon the severity and location of the cleft, as well as other factors. Inability of the baby to be feed and receive nutrition causes malnourishment and delayed growth and development.

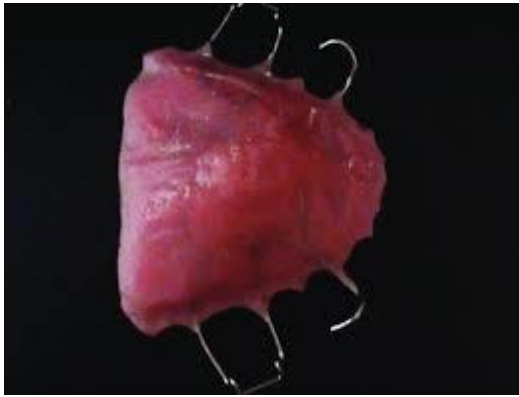
Keywords: Breast Feeding, Cleft Lip and Palate, Feeding,

Introduction:

A cleft of the lip and/or palate is one of the most common craniofacial birth defects with an average prevalence of 1.27 per 1000 live births.¹ The etiology is multifactorial which includes both genetic factors and environmental factors. During the development of the foetus, separate areas of the face develop individually and then join together. Any disturbance in this fusion can result in cleft formation. The type and severity depends upon the fusion defect. These clefts can range from a slight notch in the lip, to complete separation. It can also involve the different regions of the oro-facial complex, either independently or in combination.² Early surgical treatment may need to be postponed until certain age and weight gain of the infant. ³ Feeding difficulties associated with cleft lip and palate [CLP] are related to reduced sucking efficiency, nasal regurgitation and excessive air intake.^{4,5} The goal in feeding an infant with orofacial cleft is to provide nutrition, which is one of the primary concerns as infant may not gain weight at the rate of a normal infant.⁶ A feeding technique which improves the suckling reflex is important for these children. Suckling maximizes oral stimulation, which facilitates oral motor development.^{4,7} This article reviews the different feeding interventions which have been reported and recommended for infants with cleft conditions.

Feeding plate obturates

The feeding plate obturates the cleft and restores the separation between the oral and nasal cavity. It creates a rigid surface towards which the baby can press the nipple and extract the milk.⁸ It assists in feeding, reduces incidence of choking and nasal regurgitation. The obturator also prevents the tongue from entering the defect.^{9,10} Feeding appliances have been mentioned by a number of authors that an affected infant cannot produce negative pressure in the oral cavity and therefore cannot move the bolus backward to the pharynx.¹⁰ Palatal obturator improves the seal by generation of negative pressure.⁴ Feeding plates have been modified using different materials like Bioplast clear soft palate (Ethylene vinyl acetate) and Tulle.^{10,11} The main drawback of feeding plate is the requirement of fabrication of new ones because of growth. Also, good oral hygiene and the cleanliness of prostheses should be maintained failing which fungal growth on the palate can be seen. ⁴



Palatal obturator

Haberman Special Needs Bottle: It is an assisted feeding bottle. It consists of five parts – valve, disk, nipple, collar and bottle. The nipple is unusual looking and has markings that indicate the flow of milk. Three rates of milk flow, each is represented by a line on the barrel of nipple where the shortest means no or short flow and the longest line means regular or high flow. The desired flow line should be upwards under the infant's nose. ^{12,13}



Pigeon Bottle Feeder: It is a self-assisted feeding bottle, which means the infant has to suck the milk without any assistance. It has four parts – plastic one way flow valve, nonlatex nipple with a Y cut and air vent, collar or ring and bottle. The nipple and collar fit standard size bottles as well. ^{12,13}



Playtex Feeder: Introduced by Paradise JL. The Playtex feeder contains a rigid, plastic, slotted shell into which disposable plastic bag containing milk is placed. To this conventional nipple carrying cap is screwed.

The slots of the shell are wide enough to permitting easy insertion of fingers, so that gentle pressure can be applied to the milk containing bag throughout the feeding process.²

Nipples : As documented cross cut nipples used with either rigid or compressible bottles are said to be useful in CLP. Artificial nipples with enlarged orifice and fast flow rate have also been documented. Though some authors caution against the use of these nipples because it may imperil the infant's ability to synchronize sucking, swallowing and breathing.⁵ Correctly shaped regular nipple with a broader base and long shaft usually resolved the problem. Various companies like Binky, Nuk, Gerber and Platyex provide wide bases that may conform to the isolated cleft lip and prevent air leakage while sucking. Most commonly amongst these are the NUK nipple and the Pigeon nipple.⁷ But the simplest method that remains is to alter a standard nipple with a cross cut. This can be done by turning the nipple inside out and using a sharp thin blade to make a small X cut in the tip of the nipple (Figure7).¹²



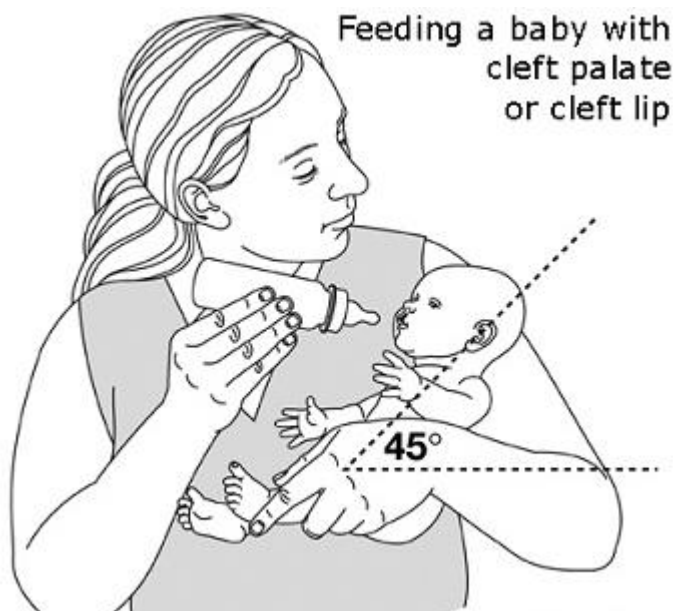
Different techniques work for individual infants with cleft lip \pm palate. However, each of these infants has an increased risk of feeding difficulties. The most appropriate feeding technique would be any type of device that delivers adequate milk into the mouth, and allows the infant time to swallow. When bottle feeding, a soft plastic bottle would be effective, because the feeder would be able to control the amount of milk expelled into the infant's mouth. When breast feeding is desired, the mother should express milk by placing the infant in a supine position and expressing milk directly into the infant's mouth. The device, "Lact-aid" was used for infants in whom mothers wanted to keep the infant approximating breast feeding. The "Lact-aid" delivers milk into the baby's mouth through a small tube while the infant is placed at the breast.

Feeding tips

Each baby is unique, so different techniques will suit different babies, even if they have the same kind of cleft. However, some general tips are:

- Feed the baby in a calm quiet environment. Make sure you are sitting in a comfortable chair.
- Have several breaks for burping, as your baby may experience a lot of wind.
- Keep each feed to 20–30 minutes. Longer feeds mean your baby will use too much energy during feeding.
- Seat with baby fairly upright for bottle feeding (see diagram below). This may prevent milk coming out of your baby's nose during sucking. Hold your baby close to you so they are well supported during feeding.
- If your baby has a cleft lip, avoid placing the teat into the cleft.
- Once baby starts sucking, squeeze the bottle gently to deliver milk into the mouth by using the Special Needs Feeder, the teat rather than the bottle should be squeezed. A squeeze every three to four sucks is usually enough.
- Some parents find it helpful to practise squeezing a water-filled bottle to get an idea of how the flow changes with more rapid squeezing or stronger squeezing of the bottle.
- Watch how your baby reacts to the pulsing or prolonged squeezing of the bottle. If they look uncomfortable or are not managing the mouthful of milk, stop squeezing and let your baby rest and swallow before more milk is given.

- Some babies have serious feeding problems (dysphagia), which mean they need specialised help to manage feeding. If baby is showing signs of swallowing difficulties, talk to child's doctor or cleft coordinator.
- It is important to have your baby weighed (naked) every week for the first month to make sure they are growing. It is also helpful to keep a log of your baby's feedings to track how much they are eating.



Introducing solids

Babies with cleft lip, cleft palate or cleft lip and palate usually start taking solids at the same time as other babies (between four to six months of age).

Sometimes food may come out through baby's nose during feeding. This may improve if baby more upright or make the food a little runnier.

Feeding your baby after cleft lip or cleft palate repair

Your plastic surgeon will give specific instructions on how to feed your child in the first few days after the surgery. In general, babies are encouraged to return to their usual method of feeding (breastfeeding or bottle feeding) after surgery. If the baby has progressed to solids, these can also be reintroduced quite quickly after palate repair surgery. The food should be a soft, sloppy consistency for the first three weeks.

Conclusion

Infants with cleft lip and palate are a significant part of the population. They are at likely risk of many health difficulties including malnutrition, which can lead to morbidity and failure to thrive. However evidence based practice shows that with intervention techniques, oral feeding can be successful and infants can survive. Ideally, feeding interventions should reduce the stress experienced by the family and infant, promote growth and development in the infant and facilitate a normal feeding pattern. Early education combined with nutritional intervention protocol can improve outcomes including weight gain, feed velocity and fluid intake.

References:

1. Tandon S. Cleft lip and palate. In: Tandon S, editor. Textbook of Pedodontics, 2nd ed. New Delhi: Paras Medical Publisher; 2009;674-91.
2. Devi ES, Sai Sankar AJ, Manoj Kumar MG, Sujatha B. Maiden morsel - feeding in cleft lip and palate infants. J Int Soc Prev Community Dent. 2012 Jul; 2(2):31-7.
3. Masih S, Chacko RA, Thomas AM, Singh N, Thomas R, Abraham D. Simplified feeding appliance for an infant with cleft palate. J Indian Soc Pedod Prev Dent. 2014 Oct-Dec;32(4):338-41.
4. Goyal A, Jena AK, Kaur M. Nature of feeding practices among children with cleft lip and palate. J Indian Soc Pedod Prev Dent. 2012 JanMar;30(1):47-50.
5. Reid JA. A review of feeding interventions for infants with cleft palate. Cleft Palate Craniofac J. 2004 May;41(3):268-78.
6. Ganatra MA. Cleft lip and cleft palate. Medicine Today. 2010 Jan-Mar;8(1):14-7.
7. Clarren SK, Anderson B, Wolf LS. Feeding infants with cleft lip, cleft palate, or cleft lip and palate. Cleft Palate J. 1987 Jul;24(3):244-9.
8. Gupta R, Singhal P, Mahajan K, Singhal A. Fabricating feeding plate in CLP infants with two different material: A series of case report. J Indian Soc Pedod Prev Dent. 2012 Oct-Dec;30(4):352-5.
9. Malik P, Agarwal A, Ahuja R. Feeding appliance for an infant with cleft lip and palate. Pakistan Oral & Dental Journal. 2012 Aug;32(2):264-6.
10. Karayazgan B, Gunay Y, Gurbuzer B, Erkan M, Atay A. A preoperative appliance for a newborn with cleft palate. Cleft Palate Craniofac J. 2009 Jan;46(1):53-7.
11. Erkan M, Karaçay S, Atay A, Günay Y. A modified feeding plate for a newborn with cleft palate. Cleft Palate Craniofac J. 2013 Jan;50(1):109-12.
12. Cleft Palate Foundation. Feeding Your Baby [brochure]. North Carolina: Cleft Palate Foundation; Fourth Edition 2009.
13. Luis Cuadros. Feeding an infant with a cleft [Internet]. Available from: http://www.cuadrosmd.com/forms/feeding_info.pdf
14. Surendra Sharma, a textbook of pediatric nursing, kumar publishing house, first edition, delhi, 2019
15. Amstalden-Mendes LG, Magna LA, Gil-da-Silva-Lopes VL. Neonatal care of infants with cleft lip and/or palate: Feeding orientation and evolution of weight gain in a nonspecialized Brazilian hospital. Cleft Palate Craniofac J. 2007;44:329-34
16. Clarren SK, Anderson B, Wolf LS. Feeding infants with cleft lip, cleft palate, or cleft lip and palate. Cleft Palate J. 1987;24:244-9
17. Cleft lip and palate – infant feeding, The Royal Children's Hospital https://www.rch.org.au/kidsinfo/fact_sheets/Cleft_lip_and_palate_infant_feeding/