

A simple solution to help with feeding difficulties in neonates with cleft palate: A case report

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ABSTRACT

Feeding a neonate baby with a complete cleft lip and palate is a problematic pursuit because of the communication between the oral and the nasal cavity and associated problems. This present case is of a 6-day-old underweight neonate with feeding difficulties due to the cleft palate. In this case report, simple, uncomplicated steps for the fabrication of a feeding obturator are explained to aid in the proper nourishment of neonates for definite corrective procedures in the future with overall growth.

Keywords: Cleft lip, cleft palate, feeding obturator, feeding plate

Introduction

Cleft lip and cleft palate are one of the commonest developmental defects in the maxillofacial region with an incidence of 0.28 to 3.74 per 1000 live births globally.^[1] Various problems are associated with individuals born with a cleft lip or palate. The major problem would be feeding the neonate as there will be no sufficient negative intraoral pressure to prevent the regurgitation of food into the nasal cavity, resulting in undernourishment and delayed development.^[2,3] Primary care physicians play a crucial role in the comprehensive care of infants born with cleft lip and cleft palate. Recognizing the feeding challenges early on, these physicians can collaborate with dental and maxillofacial specialists to ensure timely intervention. Monitoring the infant's growth and weight gain is essential, as it directly impacts the feasibility of future corrective surgeries. This case report aims to provide an overview to manage feeding difficulties in a patient with a cleft palate using an obturator appliance.

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Case Report

The Department of Neonatology referred a 6-day-old female child to the Department of Dental and Maxillofacial Surgery at the Lady Hardinge Medical College and associated hospitals with the chief complaint of feeding difficulty. Family history revealed that the parents and the grandparents had no consanguineous marriage and no family history of clefting or any other congenital defect. General examination revealed a short neck and underweight (1.80 kgs) of the neonate [Figure 1a and b]. Intraoral examination of the child revealed Veus' Class II classification (cleft of the hard and soft palates) [Figure 2a and b]. This was their first child and there was no associated syndrome with karyotyping 46xx. After initial assessment, it was found that the mother had difficulty breastfeeding the newborn; hence, a feeding appliance was planned for feeding the newborn.

Primary impression

The impression was made when the infant was fully awake and crying without any anaesthesia or premedication to ensure a patent airway. Impression compound was used to obtain the primary impression and after pouring it with dental stone, a primary cast was obtained. A custom tray was fabricated with a

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sprinkle-on method using self-cure acrylic resin on the primary cast.

Secondary impression

A secondary impression of the neonate's cleft palate was made using a custom tray using Putty consistency polyvinyl elastomeric impression adhering to all necessary guidelines and it was poured with orthokal (type III dental stone) material [Figure 3a and b].

Obturator

After obtaining the secondary cast, all undercuts and cleft were blocked with modelling wax. An obturator was fabricated using clear self-cure acrylic resin by sprinkle-on method. A 20-gauge wire extraoral frame was attached to the anterior part of the obturator as shown in Figure 3c and d. This was performed to prevent accidental aspiration of the obturator as well as to facilitate easy handling of the obturator prosthesis during insertion and removal. After finishing and polishing, the obturator was tried in the patient's oral cavity and the patient was test-fed in operatory. There was no nasal regurgitation, and the suckling could be clearly appreciated.

Instructions to parents

Parents were explained about the use and cleaning of appliances. The patient was recalled after 24 h of appliance delivery, followed by 1 week and 1 visit every month after that.

One month follow-up result

On the first month follow-up visit, the patient gained weight to 2.65 kgs (previously 1.80 kgs), suggestive of better feeding with the obturator [Figure 3d].

Discussion

In the primary care setting, physicians can educate parents about the impact of the cleft palate on feeding and emphasize the role of specialized feeding appliances such as obturators under the supervision of a specialised cleft care team comprising orthodontists and oral surgeons. Providing guidance on proper usage and maintenance of these appliances empowers parents to actively participate in their infant's care.

Proper feeding is essential for the overall growth and development of the infant, which is essential for gaining weight for the definitive corrective surgery in the future. However, a cleft palate creates feeding difficulties due to an opening in the roof of the mouth, and infants have difficulties in having necessary negative pressure in the oral cavity for feeding. Additionally, nasal regurgitation is also evident.^[4]

A variety of appliances are used to help in feeding infants with cleft defects such as plastic squeeze bottles and feeding bottles with specially designed nipples (soft nipple, nipples with enlarged opening, wide base, and long nipple). The feeding plate helps with proper tongue position, and reduces choking and



Figure 1: (a and b) Short neck and undernourished 6-day-old neonate



Figure 2: (a) No associated lip deformity. (b) Veus' Class II classification (cleft of hard and soft palate)



Figure 3: (a) Secondary impression. (b) Final cast. (c) Fabricated obturator with wire extensions. (d) Obturator in place at 1 month follow-up

nasal regurgitation, thereby considerably increasing the feeding efficiency.^[5,6]

A regular follow-up of the infant is required for the examination of the oral mucosa associated with the obturator and necessary adjustments if required for the accommodation of growing arches. Hence, check-up should be performed in every 3–4 weeks. A new obturator should be constructed periodically

to accommodate enlarged craniofacial sutures at growth. The infant's mother should be advised to hold the infant in a semi-upright position during feeding. Mothers who have multiple children may experience heightened anxiety compared to those with only one child, stemming from their previous encounters with normal breastfeeding in older siblings.^[7]

Regular growth monitoring becomes an integral aspect of primary care for these infants. Physicians can track weight gain and developmental milestones, serving as indicators of the effectiveness of feeding interventions. Offering ongoing support and addressing any concerns related to feeding, weight gain, or overall health helps build a strong foundation for the infant's future corrective management.

Moreover, primary care physicians play a vital role in coordinating follow-up care, ensuring that infants receive timely adjustments to their feeding appliances and any necessary modifications. This collaborative approach between primary care and specialized care providers such as orthodontists and oral surgeons contributes significantly to the overall well-being and successful management of infants with cleft lip and cleft palate.

Conclusion

Inadequate nourishment due to difficulty in feeding affects the health and normal development milestones which are also essential for further corrective management of cleft lip and cleft palate. A feeding appliance also aids in feeding, oral-facial development, development of palatal shelves, prevention of tongue distortion, nasal regurgitation, and other associated problems.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's parents have given their consent for images and other clinical information to be reported in the journal. The patient's parents understand

that their name and initials will not be published and due efforts will be made to conceal the identity, but anonymity cannot be guaranteed.

Ethical approval

Approval was taken from the Institutional ethical committee of the hospital.

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Conflicts of interest

There are no conflicts of interest.

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