CASE REPORT

Simplified design and precautionary measures in fabrication of a feeding obturator for a newborn with cleft lip and palate

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SUMMARY

The immediate problem to be addressed in a new born with cleft lip and palate is the interference of feeding. Here we present a case of cleft lip and palate for which a feeding obturator was made to facilitate feeding till the defect could be surgically repaired. The design was modified by placing orthodontic wire on the acrylic plate for attaching the ties of mouth mask. Different precautionary measures undertaken while making impression for infant have also been described. Feeding appliance improved the sucking ability of the infant. The attachment of mouth-mask ties help in easy retrieval of the obturator intraorally in case of airway obstruction.

BACKGROUND

Cleft lip and palate are one of the most common structural birth defects.¹ Facial clefting results from a wide variety of genetic and environmental causes.² Neonates born with cleft palate have difficulty in eating which may lead to failure to thrive.³ The feeding process is also complicated by nasal regurgitation of food⁴ and excessive air intake that requires frequent burping.^{5 6} A palatal obturator given to infant effectively separates the oral cavity from the nasal cavity and is of great help in feeding.

CASE PRESENTATION

A 2-day-old baby admitted in the neonatal unit at a local maternity and children hospital was referred to our department by the attending paediatrician as the child had poor swallowing ability. Medical history revealed that child was born out of consanguineous marriage.

Intra-oral examination (figure 1) revealed cleft involving alveolus, hard and soft palate bilaterally (Veau Group IV). A nasogastric tube was used in the ward to feed the child. Feeding obturator fabrication was planned to create rigid platform to restore the normal anatomy and function of the palate.

TREATMENT

The impression was made with putty type rubber base impression material. The infant was held in such a way to ensure that the face is held down. The baby's oxygen level was monitored to prevent accidental hypoxia. It was also made sure that baby is breathing nasally. When the material had fully set, the tray was removed and the oral cavity was

Figure 1 Intraoral picture showing cleft involving lip and palate bilaterally.

inspected for any loose fragments of the impression material.

The impression was poured with dental stone (figure 2). All the undercuts on the cast were blocked, a separating media was applied and autopolymerising resin was added by salt and pepper method. Two pieces of orthodontic wires (gauge no 21) were placed to attach mouth mask ties so that obturator can be retrieved easily at any point of time (figure 3). Wax was removed using hot water and the appliance was trimmed and polished.

The appliance was placed intraorally (figure 4) and areas of excessive pressure were identified and trimmed. The baby's mother was instructed on how to insert the obturator, feed the baby (figure 5), remove and clean the prosthesis. The child was

Figure 2 Cast showing bilateral palatal defect.

To cite: Dubey A, Mujoo S, Khandelwal V, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-010465

Figure 3 Obturator on cast showing the simplified design by using mouth mask ties.

re-examined three days after delivering the prosthesis for any sores/ulcerations in the oral mucosa.

OUTCOME AND FOLLOW-UP

Monthly follow-ups were scheduled and parents were informed that the appliance has to be replaced after 2–3 months to accommodate for the craniofacial growth.

DISCUSSION

Feeding time in cleft patient is prolonged and fatigues both the baby and the parents.^{3 4 7} Obturator seals the communication between oral and nasal cavity and infant is able to express milk.⁸ The initial and crucial step in the fabrication of the obturator is the impression procedure. Different materials advocated in the literature are alginate, beeswax, periphery wax, polysulfide impression material and very high consistency vinyl poly siloxane.^{9 10}

One has to be extra cautious while making an impression for a newborn. Dentists should be well versed with basic life support measures in order to handle airway emergencies. High volume suction should be chairside so as to manage any orogastric regurgitation during procedure. The impression is made when the infant is fully awake without anaesthesia or

Figure 4 Feeding obturator placed in infant's mouth with ties placed extraorally.

Figure 5 Infant being fed with obturator in place.

premedication.¹¹ The infant should be able to cry during impression procedure as not crying may be indicative of airway blockage.¹²

Learning points

- ▶ The feeding obturator aids in nursing.
- ▶ A simple design using mouth mask ties for easy retrieval in case the appliance falls back in mouth.
- ▶ Extra precautionary measures during the impression-making procedure prevent hypoxia due to airway blockage in clinical practice.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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