

Fabrication of Single Visit Feeding Plate in Cleft Lip and Palate Patient – A Case Report

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Abstract

Cleft lip and palate in infants lead to difficulty in feeding which eventually leads to malnourishment of infants. To overcome this problem, we go with prosthodontic management, which comprises placing a feeding plate to bridge the defect and provide a rigid platform that aids in suckling. In this case report, a 1-month old infant with cleft lip and palate was reported and the feeding plate was fabricated with auto-polymerizing acrylic resin which is both economical and time-saving.

Keywords: Cleft lip, Cleft palate, Feeding plate.

INTRODUCTION

Cleft lip and palate are a congenital anomaly.^[1,2] The cleft palate occurs due to failure of the palatal shelves to fuse and cleft lip will either occur alone or in association with cleft palate. It leads to a psychological impact on parents as they become anxious while feeding the infants.^[1] Moreover, the problems encountered by cleft lip and palate in newborn infants are difficulty in eating as the negative pressure required for suckling milk is diminished because of oronasal communication which in turn leads to a decrease in weight,^[1] malnourishment and it also leads to complication like regurgitation, burping due to excessive air intake, it causes ulceration of nasal mucosa which prolong the time taken for feeding, which is normally 15–20 min and finally it may lead to choking.^[3] To overcome these problems in infants, we should give a feeding plate obturator that closes the oronasal cavity defect by providing a rigid platform by which the infant can suckle the milk.^[4] It also prevents interference of tongue into the defect which leads to the proper development of palatal shelves toward the midline and aids in proper position tongue thus leading to jaw and speech development.^[5,6] It shortens the time taken for feeding and the feeding can be completed within 20 min.^[3,5] It improves the nourishment in infants and increases weight gain.^[6]

CASE HISTORY

A 1-month-old girl baby reported to the department of prosthodontics with complaints of spacing in the upper lip and

difficulty in feeding. Extraoral and intraoral examination reveals a cleft of the soft and hard palate and lip and alveolar ridge on one side (Veau's Classification-Group 3) Figure 1. A treatment protocol was drawn that comprises of feeding plate to improve the feeding efficiency in infant, after consulting their parents.

Steps in fabrication of feeding plate

Custom tray fabrication

After a thorough intraoral examination green stick compound (low-fusing) is heated under direct flame after which it is tempered in a hot water bath and manipulated to make a tray by pressing the compound against the hard palate of the infant using gentle pressure. By this, we can get a tray that helps in holding the impression material and make impression-making easier Figure 2.

Impression making

Addition silicone impression material was used for impression making. The putty material was manipulated and loaded in a pre-fabricated tray. While making an impression the patient's parent was instructed to be seated facing forwardly in the dental

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Figure 1: Cleft lip and palate (Veau's classification-Group 3)

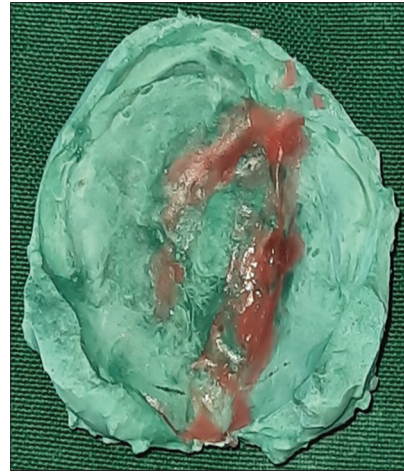


Figure 4: Master cast with wax blackout



Figure 2: Custom tray fabricated using green stick compound



Figure 5: Feeding plate -intraoral view



Figure 3: Final impression with putty and light body

chair and should hold the infant in an upright position to avoid aspiration of foreign material and gagging. While making an impression the impression material was pressed against the hard palate and into the buccal and labial vestibule. After which a wash

impression was made using light body impression material. The impression made was thoroughly inspected to check whether it has satisfactorily covered all the supporting areas Figure 3.

Fabrication of feeding plate

The cast was poured using dental stone (Type III). Undercuts were blocked using base plate wax Figure 4. Then separating medium was applied over the cast and auto-polymerizing acrylic resin was used to fabricate the feeding plate in the dough method. Excess material in the feeding plate was trimmed and polished. Then, a perforation was made in the feeding plate using 701 carbide bur on the labial flange and a non-absorbable 3-0 silk suture thread was tied to aid in stabilizing the plate while feeding the infant Figure 5 feeding plate- intraoral view.

DISCUSSION

Fabrication of the feeding plate is important because it improves the overall health of the patient. The infant with cleft lip and palate poses a greater risk for ear infections because of food or liquid that refluxes upward into the nasopharynx. This is because

the eustachian tube runs horizontally from the middle ear into the nasopharynx in infants.^[4] Eustachian tube dysfunction can lead to acute otitis media which are more frequent and it can also lead to mild to moderate conductive hearing loss among children with cleft lip and palate.^[7-9] To prevent these infections feeding plate is essential as it prevents food or liquids to enter the nasopharynx. Moreover, in infants with cleft lip and palate can lead to failure to thrive condition which has largely been attributed to early feeding difficulties.^[10] Hence, early intervention in treatment of infants with cleft lip and palate will be a stress reliever for parent as well as infant as it provides a positive impact on development of infants by improvising the feeding method and making them ready for surgery. Feeding plate plays a salient role as surgery follows the rule of ten that is 10 weeks old, weight of ten pounds and 10 g of hemoglobin for which adequate nutrition is required and usually surgical management takes place within 2–3 months of age.

CONCLUSION

Feeding and proper nutrition is a challenge in cleft lip and palate infants and the need for a feeding plate is common and educating the parents regarding the feeding of children with cleft lip and palate is important. In this case, the use of a feeding obturator improved both feeding efficiency and efficacy. Overall it made the feeding experience more pleasurable. Therefore, the feeding plate was the most important aid for the infant to get proper nourishment.

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