

IMPRESSION MAKING FOR FEEDING OBTURATOR APPLIANCE IN A CLEFT PALATE
PATIENT: A CASE REPORT

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ABSTRACT: Cleft lip and palate are some of the most frequently encountered anomalies in the orofacial region. Immediate problems to be addressed in a new born with this defect would be to aid in suckling and swallowing. This article presents a case report of a neonate with cleft palate in whom a feeding obturator was delivered. In this article impression making for fabrication of obturator was discussed.

KEYWORDS: cleft palate, feeding obturator, impression making

INTRODUCTION

Clefts of the lip and palate are the most common congenital deformities involving oro-facial region¹, with an incidence of 0.28-3.74 per thousand live births². Children born with cleft lip and palate encounter a number of problems that must be solved for complete rehabilitation. Cleft palate can be defined as a furrow in the palatal vault³. Facial clefting results from a wide variety of genetic and environmental causes. A cleft is caused by hypoplasia, abnormal directional growth of mesenchymal process or failure of fusion or breakdown of fusion of mesenchymal process⁴. Cleft of the palate and lip may be syndromic or non syndromic .There are numerous problem associated with individuals with a cleft lip or palate which affects the functions performed by oral and nasal cavities. One of the important problems would be feeding the infants as there will be no sufficient negative intra oral pressure to prevent regurgitation of food into the nasal cavity. Neonate with cleft palate has difficulty in feeding which may lead to failure to thrive⁵. If the palatal defect is complete and wide an obturator may be required to close the defect and prevent regurgitation food into the nasal cavity⁶. A feeding obturator is a prosthetic aid that is designed to obdurate the cleft and restores the separation between oral and nasal cavities.

The first stage of management would be fabrication of feeding plate. The crucial step in fabrication of obturator is impression procedure. Patient positioning, tray and impression material selection are the important factors to consider in any impression procedure^{7, 8,9,10}.

This case report aims at providing an overview of management of cleft palate patient with emphasis on impression making procedure for the fabrication of palatal obturator.

Case report

A 2 -months old female infant was referred to our department with parents complaining of difficulty in suckling milk. Mother had a full term, normal uneventful pregnancy and medical and dental history was non contributory, family history revealed that parents were of consanguineous marriage. On general examination Child is under-nourished and under weight.

Intra oral examination of the child revealed cleft palate involving hard and soft palate without involving lip and alveolus (veau class II) (**Fig. 1**) . A step wise procedure is described to obtain accurate impression for the fabrication an obturator in infants with cleft palate.

Primary impression

The impression is made when the infant is fully awake without any anaesthesia or pre-medication. The infant was held with his face towards the floor in order to prevent aspiration in the event of vomiting and also asphyxiation due to airway obstruction (**Fig. 2**). It was also ensured that the infant made sucking motion during impression making as this helps ensure better mouldability. A gauze piece material was used to cover the finger and alginate material was loaded for making primary impression when the material was fully set the impression was removed and inspected to see that all the desired landmarks have been captured(**Fig. 3**).



Fig.1. Child patient with Cleft palate



Fig.2.Impression Technique



Fig.3.inspection of the primary impression



Fig.4.Adaptation of the wax

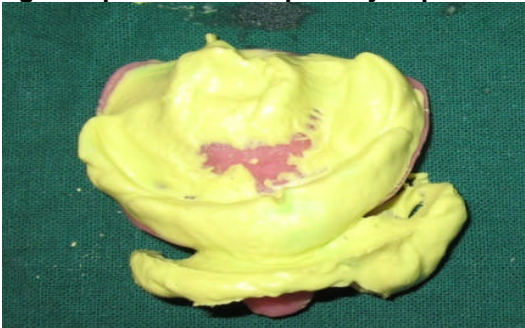


Fig.5.impression with custom tray



Fig.6.Master case



Fig.7.Finished Obtuator



Fig.8.Obturator placed in patient's mouth

Cast preparation

Primary cast was made with dental plaster. Cleft region of the palate was adapted with wax to approximate the contour (**Fig. 4**) and on which a custom acrylic tray was prepared. The tray was smoothened and polished. In the next appointment same fast setting alginate impression material was loaded onto the custom tray and impression obtained with the infant in the same position as mentioned earlier for primary impression(**Fig. 5**).

Master cast was made with dental stone(**Fig. 6**) was then lubricated with petroleum jelly. We followed "sprinkle method" for fabrication of obturator, where small controlled portion of powder and liquid of clear acrylic were incrementally added to the cast. Final obturator is trimmed and polished to see that no rough surfaces are left out (**Fig. 7**).

At the delivery appointment feeding plate was carefully fitted in the infants oral cavity(**Fig. 8**). Initial attention was given to the retention of the appliance with taking care to prevent resin from impinging on any muscle attachment or extending to the depth of the vestibule. Parents were instructed on placement and removal of the appliance and its daily cleaning. The infant was seen for adjustments a week after initial delivery.

Discussion

Impression procedures in cleft infants pose a unique set of challenges in infants including the size constraints imposed by the infants oral cavity, anatomical variations and a lack of ability of the infant to cooperate and respond to commands, Difficulty in adaptation of stock instruments, Poor naso-pharyngeal reflexes, Obligatory nasal breathing, Difficulty in retrieval of impression, Cyanotic episodes. A variety of impression materials such as Alginate, low fusing compounds, polysulfide impression material may be used to make a definitive impression. The use of fast setting colour-timed alginate has been suggested in cleft infants which has the advantages to record the details even in the presence of saliva, is comfortable to the patients easy to manipulate, inexpensive and prevents respiratory arrest.

The feeding plate or the passive maxillary obturator is a passive prosthesis appliance that is used to restore the palatal cleft and aid in creating sufficient negative pressure which allow adequate sucking of milk.

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