ABSTRACT

Cleft palate is a genetic disorder that occurs when an oro-nasal communication is present between the palate and the base of the nose. Cleft lip and palate are one of the most common structural birth defects. Single genes, chromosomal disorders or environmental factors may cause clefts. The other possible causes are hormonal imbalances, nutritional deficiencies, infections, radiation during pregnancy, alcohol or cigarette consumption, the ingestion of other teratogenic substances by the mother, and heredity. A palatal obturator covers the opening and contributes to normal speech production. In the present case an partially unsuccessful surgical repair of the lip and palate (Veau’s Class III) led to persistence of the palatal cleft resulting in continued regurgitation of semi solid food soon after ingestion. Because of financial restrictions as the patient could not undergo a surgical re-repair of the palatal cleft so rehabilitation of the unilateral cleft palate with an obturator was planned.

Key words: cleft lip, cleft palate, palatal obturator.

INTRODUCTION

Cleft can be defined as a congenital abnormal gap in the palate that may occur alone or in conjunction with lip and alveolus cleft. The zones affected by common orofacial clefts are as upper lip, alveolar ridge, hard palate, soft palate, nose and eyes.1,2 Neonates born with cleft lip and palate have oronasal communication which diminishes the ability to create negative pressure necessary for suckling,3 therby hampers feeding and consequently disturbs child’s nutrition. Any disturbances during the embryological formation, development and growth of orofacial region will result in the formation of orofacial clefts. Etiological factors can be attributed to either heredity or environment. These defects are genetically male sex-linked recessive. Environmental factors may be due to viral infections, influence of drugs like excessive use of steroids, antibiotics, insulin, antiepileptic drug and exposure to radiations, deficiency of vitamin A and B1
anaemia, stress and excessive consumption of alcohol, tobacco chewing and smoking in the first trimester of pregnancy.\textsuperscript{4}

It is very afflictive for the child as well as parents, once the child is born with this deformity. The psychological and socioeconomic entanglement of these congenital deformities can be severe and their management becomes a problem for health care system.

Literature\textsuperscript{5,6} states that following surgery, there may remain a residual oronasal opening on the palate, alveolar ridge, or labial vestibule wherein a palatal obturator may be used to compensate for hypernasality and to aid in speech therapy targeting correction of compensatory articulation caused by the cleft palate. Therefore we used a palatal obturator to cover the fistula remaining in the roof of the mouth providing an acrylic, removable roof of the mouth, which not only prevented regurgitation but also aided in speech, eating, and proper air flow.

\textbf{CASE REPORT}

An 8 year old male child presented with the chief complaint of poor feeding abilities and inability to maintain proper hygiene due food lodgment in the palate to the Department of Pedodontics and Preventive Dentistry, R.K.D.F Dental College and Research Centre, Bhopal. The past medical history of the child revealed that the child was born with unilateral cleft lip and palate and had been operated for cleft lip surgery at around 6-8 months and for cleft palate at 2yrs of age after birth and the nostrils were normalized in shape with reduced length of columella. There was no past family history of clefts or any other cranio-facial anomalies to any other family members. The patient has normal intelligence. On Intra oral examination there was presence of a median cleft in anterior part of the palate unilaterally i.e. right side is involved (Veau`s classification, Class III). The cleft extended from anterior portion of palate to the base of nose separating pre maxilla from the rest of the palate unilaterally on the right hand side.

Furthermore, the oral hygiene status was poor. The patient had problems in feeding and accompanying speech difficulties. Since the child was not scheduled for any cleft palate surgery in near future, pediatric functional rehabilitation using a palatal obturator was planned. All routine laboratory investigations were normal. A preliminary impression of the maxillary arch was made using alginate impression material. The impression was poured in a type IV dental stone. The cast was inspected for any presence of undercut and blocked with modelling wax. The
customized tray was prepared and modified to take the secondary impression. The final impression was taken using polyvinyl siloxane putty material. The final cast was prepared using dental stone. The palatal obturator was prepared using heat cure acrylic polymer and placed inside the patient mouth. The patient was instructed regarding use and maintenance of palatal obturator/feeding appliance. The patient was put under regular dental follow-ups.

**Figure 1. Pre-Operative Extra-Oral View.**

**Figure 2 Pre-Operative Intraoral View showing cleft palate.**
Figure 3. Palatal Obturator

Figure 4 Intra-operative View showing palatal obturator in position.
DISCUSSION

The clinical manifestation in cleft lip and palate patients includes difficulty in feeding, speech, hearing, personality disorders, dental anomalies and malocclusion. Parental attitudes towards children with developmental anomalies like cleft lip and palate need to be altered to a vast extent. These children no more have to be looked down in society due to the drastic transformation given to them by our modern advanced medical technology.\textsuperscript{7,8} The multidisciplinary approach is the key to successfully treat these defects. Rehabilitation with a palatal obturator is mainly indicated when the closure of the fissure is not complete after corrective surgery. Proper planning, coupled with early intervention will result in aesthetic and functional restoration for patients with a cleft palate. The use of a palatal obturator restores patient function, aesthetics and well-being. It seems that changes related to aesthetics, function and psychological well-being has an impact on patient’s personal lives and is also a great satisfaction for care-givers. A coordinated team approach is preferred to help the child achieve ideal speech, occlusion, facial appearance and self esteem. Unnecessary, unproductive, and unproven interventions, whether speech therapy, orthodontic or prosthetic treatment or surgical procedures should be avoided as they exhaust the patient, family, and health care system, produce unfulfilled expectations, and often introduce secondary deformities.\textsuperscript{9}

References


