# Prosthodontic management of a case with surgically treated cleft lip and palate with residual oro-nasal fistula

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## Abstract

The primary goal of maxillofacial prosthodontics is to improve the quality of life of the individuals with maxillofacial defects. Maxillofacial defects may be divided into: a) defects due to congenital malformations and b) the acquired defects resulting from surgery for oral neoplasms or trauma. At times, even after surgical repair of large congenital defects, some minor defects may persist.

Key Words: - Cleft Palate, Oro-nasal fistula, Obturator RPD

#### Introduction

Prosthodontic management of maxillary palatal defects has been employed for many years. The early obturators were used to close congenital rather than acquired defects, whereas after World War I & II maxillofacial prostheses played a major role in reconstruction & rehabilitation processes of acquired defects<sup>1,2</sup>.

During 16th Century in France, emphasis was made on cosmetic & functional replacement. In early 1500s, Ambroise Pare used artificial means to close a palatal defect. In 1875, Claude Martin described the use of surgical obturator prosthesis. Fry was the first one to suggest and describe the use of impressions before surgery way back in year 1927, and in the year 1956, Steadman fabricated an acrylic resin prosthesis lined with gutta-percha to hold a skin graft within a maxillectomy defect.<sup>3,4,5</sup>

## **Case Report**

A 35 years old male patient reported to the department with chief complaint of nasal regurgitation of fluid, hypernasal speech, and missing tooth leading to poor appearance. History of surgical correction of cleft lip and cleft palate in early childhood was given. No family history of any other sibling or close relative with similar condition was reported. On general examination, built and gait of the patient was found to be normal. On extra-oral examination, there was a scar in right side of upper lip suggestive of surgical scar of cleft lip repair surgery (Figure 1).



Figure 1: - Pre-operative Frontal View

On intraoral examination, constricted maxillary arch was noticed. Unilateral persistent cleft palate (oronasal fistula) on the right side in pre-maxillary region was present. Maxillary right lateral incisor and first premolar were found to be congenitally missing (Figure 2).



Figure 2: - Intraoral View

Thorough medical history and physical examination was performed, and no systemic abnormalities were noticed. His mental ability and intelligent quotient were also assessed and were found to be normal. Occlusal and periapical radiographs in the region of missing tooth and patient's photographs were taken after thorough intraoral examination.

#### Treatment:

The main objective of this patient's treatment was to seal the oro-nasal communication to improve swallowing, phonetics and maintenance of patency of the nasal cavity. Other objective was to replace the missing lateral incisor to improve esthetics and to overcome psychological trauma. To close the defect it was decided to give an obturator removable partial denture replacing maxillary right lateral incisor. Due to economic considerations patient refused the treatment option of cast partial denture obturator, hence it was decided to give an acrylic partial denture obturator. After thorough oral prophylaxis maxillary and mandibular primary impressions were made using alginate (Plastalgin, Septodont) (Figure 3) and casts were made using dental stone (Kalstone, Kalabhai). These casts were articulated on a mean value articulator and diagnostic wax-up for interim obturator RPD with a maxillary acrylic lateral incisor set in edentulous space, was made to judge the treatment outcome and was shown to the patient (Figure 4). When patient agreed, the acrylic obturator RPD was processed with heat cure acrylic resin (Dentsply) and was finished and polished and inserted in the patient's oral cavity (Figure 5). At the time of insertion of the prosthesis, the patient was educated about the use of obturator and maintenance of its hygiene.

He was instructed for periodic follow-up in every six months.



Figure 3: -Impressions



Figure 4: - Wax up



Figure 5: - Obturator – RPD- in place



Figure 6: - Post operative Frontal View

#### Discussion:

Cleft lip and cleft palate patients undergo social and psychological trauma. Treatment planning in cleft lip and palate deformity patients should take this factor also into consideration. Other factors which also influence treatment plan are age, socioeconomic status, type and severity of defect. Following surgical intervention to treat a cleft lip and palate, an oro-nasal fistula may remain in the palate in many cases and this may cause problem in chewing, phonation, swallowing and breathing.

In the above case presented, there was residual oronasal communication after surgical repair of cleft palate. Due to lack of bone in the region of cleft, it was not possible to place an implant to replace the missing maxillary right lateral incisor. To close the oro-nasal fistula a removable dental prosthesis replacing maxillary right lateral incisor was given. The obturator sealed the oro-nasal fistula and improved the aesthetics, function and speech of the patient (Figure 6).

### **Conclusion:**

The prosthodontic management of a patient with surgically treated cleft lip and palate with oro-nasal communication and a missing lateral incisor is described in this article. The prosthesis given in this case would be effective for similar patients. This design is acceptable to the patient because of easy insertion and removal, easy maintenance, simple construction and low cost.

**Follow-up:** Patient is being called for regular follow-up every six months.

## Conflict of interest: None Patient's Consent: Obtained References

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