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## Case Report

# Prosthodontic rehabilitation of extraoral and intraoral maxillofacial defects



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## Introduction

The surgical treatment of maxillofacial malignancies often results in intraoral and extraoral defects. While small sized defects can be restored by reconstructive surgeries, prostheses are often necessary to mask the larger anomalies. The restoration of large maxillofacial defects pose challenges to Prosthodontists because of the limited means of retention, enhanced expectations about esthetics and the need to restore function to the best possible extent.<sup>1,2</sup> A successful rehabilitation would go a long way in improving the quality of life of the patient. The following case report illustrates the various aspects of fabricating a maxillofacial prosthesis in patient with residual extra and intraoral defect after surgical reconstruction.

## Case report

A 47-year-old male patient reported to this hospital, after having undergone surgery one month ago for dedifferentiated chondrosarcoma involving the left maxilla and extending to the infraorbital region. The patient was concerned about his poor esthetics and inability to eat and speak.

**Extraoral examination:** The region over the left cheek was sunken because of resection of underlying alveolar and zygomatic bones. The left eye had been enucleated. The surgical site was covered by means of a flap from the forehead that had been rotated and sutured over the area of the defect (Fig. 1).

**Intraoral examination:** Revealed radical maxillectomy of the left side along with orbital exenteration resulted in a large intraoral defect (Fig. 2). Generalised chronic periodontitis with halitosis was observed. There were 9 maxillary teeth and 14 mandibular teeth present. Their occlusal relation on the right side was satisfactory.

### Following treatment was planned for this case

- i) Oral prophylaxis and restoration of carious teeth. Root canal treatment and crowns on select teeth.
- ii) Hollow bulb interim obturator for a period of 03–06 months.
- iii) Definitive obturator for the intraoral defect.
- iv) Silicon prosthesis for the extraoral defect.

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**Fig. 1 – Extra oral picture.**

**For rehabilitation of intraoral defect**

Impressions of the maxillary and mandibular regions were made with irreversible hydrocolloid (Jeltrate® Dustless Alginate Impression Material, Dentsply, India). The impressions were poured with dental stone and casts were retrieved. These diagnostic casts were articulated in maximum intercuspation. A design was made to fabricate an interim obturator. Subsequently, working casts were prepared in a similar manner.

The defects were evaluated and unfavorable undercuts were blocked using type II dental plaster. On this blocked out cast hollow interim obturator was fabricated using two piece technique. Trial insertion of the prosthesis was carried out to look for pressure spots and found to be satisfactory. The lid of the bulb was attached with autopolymerising resin. Occlusal



**Fig. 3 – Interim obturator.**

rims were fabricated and teeth were arranged using the remaining teeth as guides. The trial was repeated and checked for esthetics and occlusion. It was then processed with heat polymerized polymethylmethacrylate (DPI® heat cure, DPI, India) (Fig. 3). The patient was instructed about use of the prosthesis and the need for periodic reviews.

When it was felt after 6 months that the size of the defect had stabilized, the patient was taken up for fabrication of a definitive obturator. Irreversible hydrocolloid (Jeltrate® Dustless Alginate Impression Material, Dentsply, India) was used to make the impression using a modified stock tray. The maxillary cast made in dental stone (type III) was surveyed and a design to formulate a cast partial denture was prepared. The root canal treated teeth were reinforced with porcelain fused to metal crowns in which occlusal rests were incorporated. Retentive and reciprocal clasps were designed in the molars and premolars and a guide plane was planned in the maxillary left central incisor.

After mouth preparation, impression of maxillary arch was made with elastomeric addition silicone impression



**Fig. 2 – Intra oral picture.**



**Fig. 4 – Definitive obturator.**

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