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# A METHOD OF FABRICATION OF AN EXTENSIVE FACIAL PROSTHESIS

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Prosthodontics is that branch of dentistry, which deals with replacement of missing structures. Prosthodontics also encompasses the replacement of extra-oral structures like eyes, ears, limbs etc. Prosthesis is an artificial replacement. Extensive defects pose a rehabilitative challenge to any prosthodontist. Extensive prosthesis is not attempted due to the difficulty encountered in retaining the prosthesis.

Trauma and malignancies can cause extensive facial defects posing a rehabilitative challenge to the prosthodontist. Extensive prostheses are not usually attempted due to the difficulty in obtaining retention. A case of epidermoid carcinoma resulting in a large and its prosthodentic rehabilitation is reported.

A sixty five-year-old male patient reported to the postgraduate department of prosthodontics of MR Ambedkar College, Bangalore after receiving treatment for an extensive lesion of epidermoid carcinoma involving the mandible. Surgical treatment hemimandibulectomy and hemiglossectomy had resulted in a large facial deformity. Only the right side condyle, coronoid process and angle of the mandible were preserved (figure 1). Patient complained of saliva drooling from the corners of the mouth restricting his social interactions. Patient had no other systemic problems. Surgical reconstruction was not attempted because of the reluctance on the part of the patient and hence extensive overlay prosthesis was planned. The prosthesis was designed to extend from one angle of the mandible to the other to give an acceptable appearance of the lower third of the face.

**Figure 1: Pretreatment stage.**

**Steps of fabrication of the prosthesis:**

*1. Preparation of the cast*

Facial impression of the patient was made in alginate. The impression extended from the base of the nose to the base of the neck (figure 2). Alginate impression was reinforced with model plaster (figure 3). The impression was casted in dental stone.

**Figure 2: Facial impression using alginate impression material**

**Figure 3: Facial impression reinforced using model plaster**

*2. Preparation of the wax pattern*

On the cast a pattern was prepared in modeling wax. Carving and finishing process was carried out on the model and surface texture of skin was incorporated using a brush (figure 4). Trial was then performed on the patient. A suitable maxillofacial flask, which could accommodate the complete pattern was selected and the pattern was invested in dental stone.

**Figure 4: Wax pattern on the stone cast**

*3. Acrylisation of the prosthesis.*

Dewaxing was carried out followed by processing of the prosthesis in heat cure acrylic resin. Color of the resin was matched to the patient's skin color by adding burnt umber, yellow ochre and burnt sienna pigments into the monomer and by mixing pink and clear acrylic polymer.

*4. Retention of the prosthesis*

Retention was designed with wire hooks and elastic bands. Four hooks were attached to the prosthesis-behind the condylar region and at the angle of the mandible on each side. Elastic bands, running around the head were engaged to the wire hooks (figure 5).

**Figure 5: Profile of the patient with facial prosthesis in place**

*5. Absorption of saliva*

It was decided to give a lining of highly absorbent cotton wool with adhesive in one side and which was attached to the tissue side of the prosthesis to prevent drooling of saliva (figure 6) Cotton had to be replaced periodically. This acted like a cushion. External lining and final finishing was done (figure 7).

**Figure 6: The facial prosthesis (left)**
**Figure 7: Patient with the prosthesis in place (right)**

A case of epidermoid carcinoma resulting in a large defect and its successful rehabilitation is reported.