

## **Mandibular movement Practicing Appliance for Early Management of Hemimandibulectomy: A case Report**

**Dr. Sadia Tahsin<sup>1</sup>, Dr. Md. Mostafa Zaman Faruk<sup>2</sup>**

<sup>1</sup> MS, Department of Prosthodontics, BSMMU

<sup>2</sup> Lecturer, Department of Prosthodontics, Dhaka Dental College

### **Abstract**

Guide flange is given to patients who have undergone surgical hemi/segmental/subtotal mandibulectomy due to various reasons (leading cause being squamous cell carcinoma), with resultant mandibular deviation. If procedures such as secondary osseous grafting are planned, the clinician has to wait for healing of the graft. Only after the healing of the graft, a definitive prosthesis can be planned.

**Keywords:** Squamous Cell Carcinoma; Segmental Mandibulectomy; Guide Flange

### **Introduction**

Oral squamous cell carcinoma (OSCC) is one of the most commonly occurring cancers of the oral cavity. It ranks among the top three most common malignant lesions in Bangladesh. So surgery is the most necessary step and only solution for this type of patients. Loss of mandibular continuity may result in severe impairments of mastication, speech and swallowing, deviation of the mandible toward the affected side during functional movements. Immediate mandibular reconstruction is desirable and aims to restore facial symmetry, arch alignment, and stable occlusion. This case report describes GFP management of a patient who had undergone a hemimandibulectomy.

### **CASE REPORT**

60-year-old male was referred to the department of prosthodontics for prosthetic rehabilitation following a hemimandibulectomy (Cantor and Curtis Class III). History revealed that the patient had a tobacco chewing habit for 10 years and was diagnosed with squamous cell carcinoma of the right mandible 6 months back. On extraoral examination I found diffuse swelling on the right side of the cheek. Deviation of mandible was observed to the right side (about 14 mm from the midline on 35 mm of mouth opening) due to effect of normal left mandibular muscle action in the absence of contralateral right mu

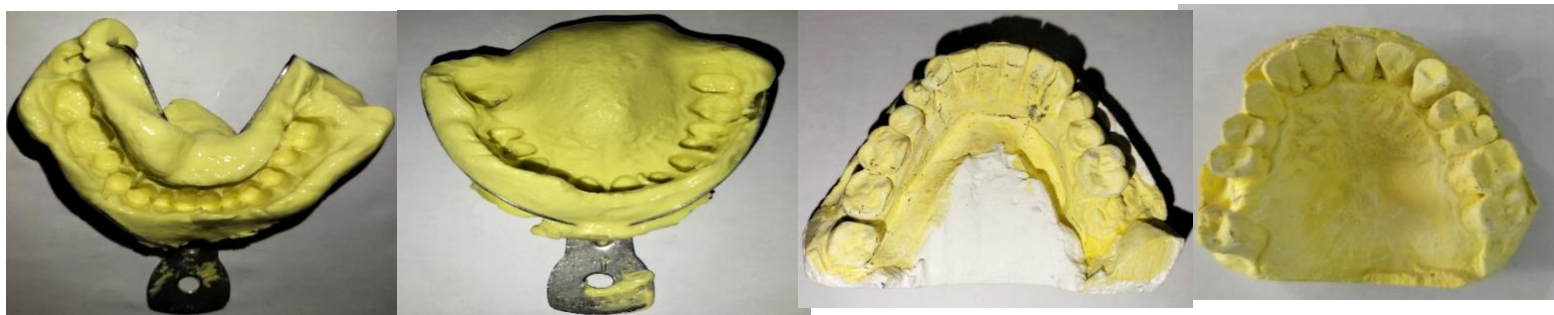


**A. Orhopantomogram before surgery.**



**B. Intraoral view after surgery**

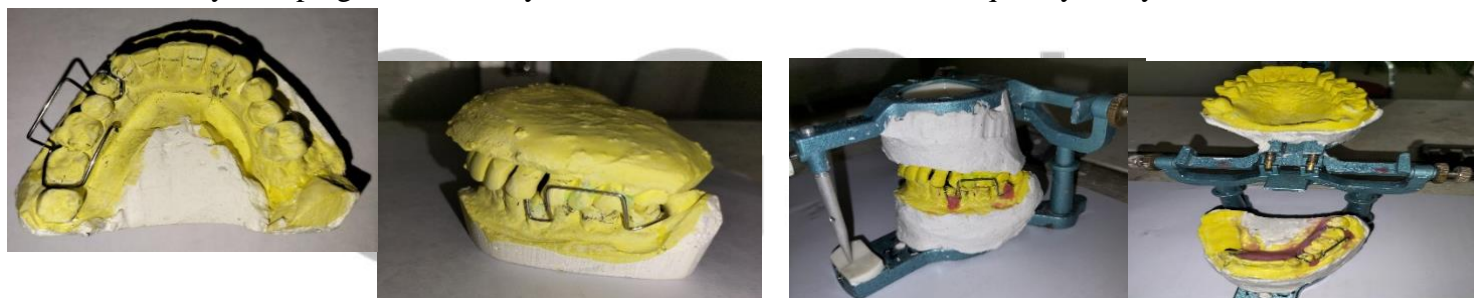
A stainless steel stock dentulous tray and irreversible hydrocolloid were used to record preliminary impression of the mandibular arch. Maxillary impression was also made with irreversible hydrocolloid. The impressions were poured with Type III gypsum material and casts were retrieved.



**D: Impression Making with Hydrocolloid material.**

**E: Fabrication of the cast**

A 19 gauge hard, round, stainless steel orthodontic wire was manipulated to fabricate a substructure for the modified GFP. The vestibular flanges and the mandibular guide-flange were made around the wire substructure by keeping a maxillary cast in occlusion and subsequently acrylized into the



autopolymerizing acrylic resin to make the GFP

**G: wire substructure occlusal view and Buccal view.**

**F: Acrylyzation procedure**

Completed modified guide flange prosthesis. Indicating the buccal indentations of opposing maxillary teeth in occlusion to guide the mandible in a definite closing point.



**G: Final prosthesis**

**H: Final insertion into the patient's mouth**

The GFP was tried in patient's mouth and the initial stability and retention was checked. After proper finishing and polishing the prosthesis was delivered and post-insertion instructions were given.

## Discussion

Depending upon the location and extent of the tumor in the mandible, various surgical treatment modalities like marginal, segmental, hemi, subtotal, or total mandibulectomy can be performed.<sup>2</sup> Loss of mandibular continuity causes deviation of remaining mandibular segment(s) towards the defect and rotation of the mandibular occlusal plane inferiorly. Our principal aim was to maintain his esthetics during mandibular movements. The GFP can be regarded as a training type of prosthesis. If the patient can successfully repeat the mediolateral position, the GFP can often be discontinued.

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