

Prosthodontic Rehabilitation of a Mandibulectomy Patient - A Clinical Report

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Abstract: Prosthetic options to correct mandibulectomy include intermaxillary fixation, removable guide flange prosthesis, implant supported prosthesis and palatally based guidance restorations. This clinical report described the mandibular guidance therapy to correct the mandibular deviation due to segmental mandibulectomy.

Key words: Guiding Flange Segmental Mandibulectomy

INTRODUCTION

Masticatory system is complex and a multitude of conditions affect it. Each movement of the masticatory complex is regulated by intricate neurological control. Mandible is one of the vital components of masticatory system and is essential for precision in jaw movements and efficient functioning of the system. Any dysfunction / defect leads to collapse of the entire complex mandibulectomy are the commonest treatment modalities for many of the mandibular defects. The reasons for mandibulectomy can be a malignant tumour resection or due to trauma. The goals of the mandibular reconstruction after resection are to restore form and function and reduce the severity of deviation facilitating guidance therapy.

Sequelae of Mandibulectomy: The sequelae following mandibulectomy include the deviation of the mandible to the resected side by the muscular pull. The rotation of the mandible leading to occlusal derangement on the resected side.

Case Report: A 40 years old male patient was referred to the department of Prosthodontics, Tamil Nadu Government Dental College, Chennai for prosthetic rehabilitation following resection of mandible. The patients history revealed that 3 years back, a lesion was noticed which enlarged in size and eventually diagnosed as giant cell tumour in right side of the mandible.

Mandibular resection surgery was carried out and the right side of the mandible was resected till I premolar on other side. The resected region was favorable to receive the prosthesis. (Fig. 1, 2 &3) Initially resection guidance restoration was given to the patient as temporary partial denture prosthesis till the occlusion was corrected and later definitive prosthetic rehabilitation was carried out for the same patient.

Technique:

- A preliminary alginate impression was made, capturing the defect in impression compound (Y – dent impression compound MDM corporation) and a pick up with alginate (Algimate Dento One Inc.) (Fig. 4).
- A custom tray was fabricated using self cure acrylic resin (DPI RR Cold Cure Dental products of India) (Fig. 5).
- A secondary impression of the defect was taken using addition silicone (Aquasil LV hydrophilic addition reaction silicone Dentsply) after border moulding the custom tray (Fig. 6).
- Temporary removable partial denture fabricated for the lower arch.
- Impression for the flange on the normal side without encroaching the vestibule was made using impression compound (Fig. 7).
- Fabrication of flange using self cure resin and the acrylic flange is attached to the RPD (Fig. 8).

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Fig. 1:



Fig. 2:

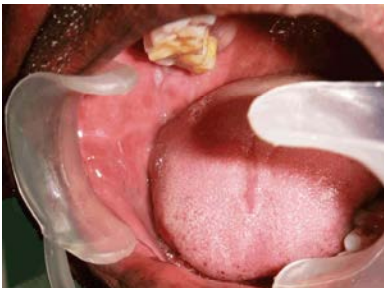


Fig. 3:



Fig. 4:



Fig. 5:

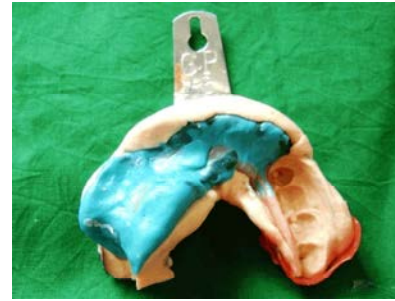


Fig. 6:



Fig. 7:



Fig. 8:



Fig. 9:



Fig. 10:



Fig. 11:



Fig. 12:



Fig. 13:



Fig. 14:

- The flange helps in correcting the deranged occlusion.
- The patient was followed up after 3 weeks.
- Once the occlusion was settled, a definitive prosthesis, like cast partial denture was fabricated.

- All the steps for cast partial denture were followed and the definitive prosthesis was delivered to the patient (Fig. 9, 10, 11, 12, 13 & 14).

DISCUSSION

The success of restoring the mandibular deformity using mandibular guidance therapy depends on four important factors.

- Time - early the initiation by guidance therapy better the results.
- Compliance of the patient in wearing the prosthesis.
- Nature of the surgical defect.
- Extent of reconstruction.

The mandibular guidance prosthesis consists of a removable partial denture framework, with a flange extending laterally and superiorly on the buccal aspect of the bicuspid and molars on the non defect side. This flange engages the maxillary teeth during mandibular closure, thereby directing the mandible into an appropriate intercuspal position. Earlier the mandibular guidance therapy is initiated in the course of treatment, more successful the patient's definitive occlusal relationship. Mandibular guidance therapy begins when immediate postsurgical sequelae have subsided, usually 2 weeks after surgery. The use of resection guidance restoration is predicted on the basis of presence of maxillary and mandibular teeth, as teeth presence in both arches is important for effective guidance and reprogramming of mandibular movement. The patient in this clinical report retained all of his maxillary dentition and mandibular dentition from left third molar left third molar to left second premolar and consequently better proprioceptive sense. Guidance therapy improves form and function of the individual. It serve as a interim basis to allow for neuro muscular adaptation of the mandible for correcting the existing deranged occlusion and it also allowed to proceed with further definitive Prosthodontics management.

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