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PROSTHODONTIC MANAGEMENT OF HEMIMANDIBULECTOMY PATIENTS TO RESTORE FORM AND FUNCTION - A CASE REPORT

Dental Science

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ABSTRACT

Loss of mandibular continuity results in deviation of remaining mandibular segment toward the resected side depending on the extent of osseous and soft tissue involvement, degree of tongue impaired, the loss of sensory and motor innervations, the type of wound closure, the presence of remaining natural teeth and finally the first initiation of prosthetic treatment.

The earlier the mandibular guidance therapy is initiated in the course of treatment; the more successful is the patient's definitive occlusal relationship. Prosthodontic treatment coupled with an exercise program helps in reducing mandibular deviation and improving masticatory efficiency. This case report describes prosthodontic management of a patient who has undergone a hemimandibulectomy 2 years back. The patient was rehabilitated using conventional mandibula & maxillary complete denture prosthesis designed to fulfill the patient's needs and requirements.

KEYWORDS

Hemimandibulectomy, Conventional Denture, Prosthodontic Rehabilitation.

I. INTRODUCTION:

Maxillofacial prosthodontics is the world of art and science which is full of challenges.

One has to struggle hard for getting the natural function and lifelike appearance of the Prosthesis.[1,2]

Advances in maxillofacial materials and techniques have been remarkable in the past decade.[3] To minimize the psychological trauma that will be associated with the facial disfigurement in hemimandibulectomy patients, a maxillofacial prosthodontics should meet the challenges associated with the fabrication of a prosthesis which meets the functional and esthetic requirements of the patient so as to help him/her in leading a normal social life.[4]

Although the prosthodontic rehabilitation of patients with mandibular defects is challenging. The unilateral loss of mandibular continuity due to surgery or trauma results in mandibular deviation toward the defect side with lack of occlusion. Unlike the dentulous patients, edentulous patients are difficult to retrain mandibular movement and many times may never achieve proper maxillomandibular relationships for optimum mastication and appearance.

II. Classification

Cantor & Curtis[5,6] provided a hemimandibulectomy classification for edentulous patient that can also be applied in partially edentulous arches.

Class I: Mandibular resection involving alveolar defect with preservation of mandibular continuity.

Class II: Resection defects involve loss of mandibular continuity distal to the canine area.

Class III: Resection defect involves loss up to the mandibular midline region.

Class IV: Resection defect involves the lateral aspect of the mandible, but are augmented to maintain pseudoarticulation of bone and soft tissues in the region of the ascending ramus.

Class V: Resection defect involves the symphysis and parasymphysis region only, augmented to preserve bilateral temporomandibular articulations.

Class VI: Similar to class V, except that the mandibular continuity is not restored.

This case report describes prosthodontic management of a patient who has undergone a hemi-mandibulectomy 2 years back. The patient was rehabilitated using conventional mandibular & maxillary complete denture prosthesis designed to fulfil the patient's needs and requirements.

III. CASE REPORT

A 52-year-old male patient reported to the department with deviated mandible for functional and esthetic recovery. The patient gave a history of a large swelling on the right side for 2 years which was later diagnosed as cemento-ossifying fibroma. This was followed by a surgical procedure which involved segmental resection of the right mandible without reconstruction.

- The defect was Class II according to Cantor and Curtis classification. On extraoral examination, there was severe deviation of the mandible toward right side. There was deviated mouth opening and disturbed profile with facial asymmetry. Mouth opening was found to be reduced to 35 mm, and mandibular deviation of 18–20 mm toward right side was found on opening of jaw. Intraoral findings included missing maxillary and mandibular teeth accompanied with trismus and excessive salivation with drooling.

Procedure

Preliminary impressions were made with irreversible hydrocolloid using stock metal trays. Casts were prepared and custom trays were fabricated**. (Fig 1)**

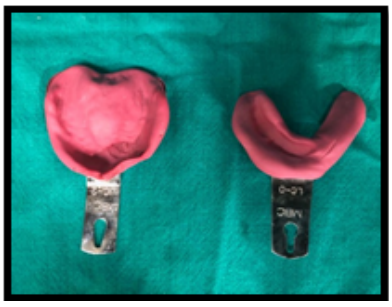

Figure 1. Upper and lower primary impressions:

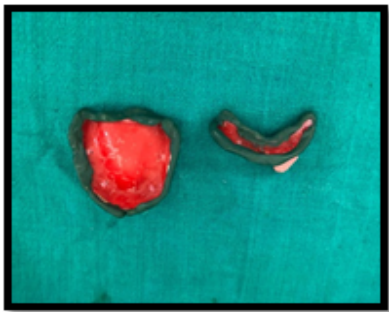

Figure 2. Border moulding

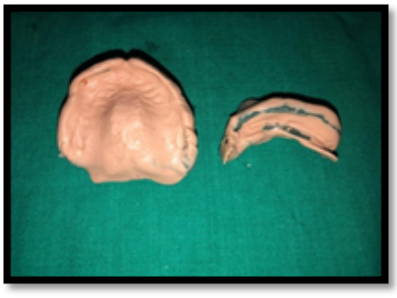

Figure 3. Final impression was made with monophase addition silicone

4. Maxillary jaw orientation using Fox Plane

5. Jaw Relation Recording A wax set-up was tried in the mouth and was checked for esthetics, phonetics, occlusal vertical dimension and occlusion .

6. Try In done

7. Smile line recording

8. Wax Up done before Flasking

9. Post Operative (Maxilla, Mandible & Occlusion Denture)

Final prosthesis was delivered [Figure .....].

Post Insertion: The patient was trained to use the prosthesis, and post insertion instructions were given.

The patient was followed up at a regular interval of 2 months for the next 1 year. Marked improvement was noted in the esthetics of the patient extraorally, and occlusal contacts were also maintained that improved the function of the patient.

DISCUSSION

This paper highlights the functional and esthetic rehabilitation of

partial mandibulectomy (partial edentulous and complete edentulous) patients. Loss of facial structures and sensory and motor innervations complicates the control factor and together with the reduced denture base contributes to a difficult complete denture situation. The maxilla–mandibular relation cannot be recorded with accuracy due to deviation, so a satisfactory occlusion is difficult to achieve.[7]

The goals of prosthodontic treatment include providing lip support, improving articulation, reducing drooling, and regaining favorable esthetics.[8] Recent advancements in facial reconstructive surgery and osseointegrated dental implants provide a treatment modality that may adequately rehabilitate oral cancer patients so that they can return to a healthy, productive life.[9] The placement of multiple implants for fixed prostheses has been shown to be a predictable method for long-term treatment of edentulous patients.[10] Limitations such as severely resorbed jaws, large antra, unfavorable jaw relations, and financial restrictions sometimes prevent the placement of a sufficient number of implants to accommodate a fixed prosthesis and therefore require an alternative for edentulous patients with compromised oral function.[11,12]

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