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Case Report

Twin Occlusion: A Solution to Rehabilitate Hemimandibulectomy Patient - A Case Report

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ABSTRACT

Loss of continuity of mandible destroys the balance and symmetry of mandibular function,leading to altered mandibular movements and deviation of mandible towards the resected side.
Prosthodontic treatment along with physical therapy may be useful in reducing mandibular deviation and improving masticatory efficiency.This case report describes the rehabilitation of a hemimandibulectomy patient using twinned teeth(two rows of teeth) arrangement.

INTRODUCTION

Functional rehabilitation of patient who has partially resected mandible is one of the most challenging procedures confronting the maxillofacial prosthodontists.
Loss of continuity of the mandible destroys the balance of the mandibular movement and function,leading to deviation of the residual fragment towards the surgical side.The greater the loss of tissue,greater will be the deviation of the mandible to the resected side,thus compromising the prognosis of the treatment.
Hemimandibulectomy has an adverse effect on the physiological function as well as esthetics which may result in psychological trauma.
Cantor and curtis provide a hemimandibulectomy classification for edentulous patient that can also be applied in partially edentulous arches.In cases with class II,III.IV and V guide flange prosthesis would be a treatment modality.

We present a case of partially edentulous hemimandibulectomy patient who approached for replacement of missing teeth after 5 years of cancer therapy.
Initial evaluation of considering prosthetics management indicated poor prognosis .However patients positive mental attitude towards treatment along with the application of basic fundamental principles by the prosthodontist during treatment procedure led us to fabricate a simple,effective functioning prosthesis that showed positive satisfactory prosthetic results.

CASE REPORT

A 58 year old female patient with maxillary unilateral partially edentulous reported to the Department of Maxillofacial Prosthodontics,Patna Dental College and Hospital,Patna,India with complaint of having difficulty in eating and speaking due to loss of teeth. Her medical

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history revealed that she was diagnosed for Squamous Cell Carcinoma on left side of mandible,for which she had undergone extensive resection of the entire mandible on Right Side 6 years back. The patient habit revealed that she was a tobacco chewer since 40 years.The medical history revealed the patient was surgically operated 4 years back by a wide resection of the tumour with left hemimandibulectomy without disarticulation,left radical neck dissection and reconstruction with pectoralis major myocutaneous flap. Extra oral examination indicated facial asymmetry (fig 1) and a convex profile with deviation of mandible to the left side. Past dental history revealed extraction of periodontally weakened maxillary teeth.

Intraoral examination(fig 2) revealed maxillary Kenedys class II partially edentulous arch with missing teeth from 11,21 to 27 and on palpation,the absence of mandibular ridge from left canine region posteriorly. Clinical examination of the surgical wound closure showed consolidated cicatrical tissue,the remaining natural teeth in both arches were attrited with loss of periodontal support.

An Orthopantogram radiograph revealed resected mandible distal to left canine involving entire mandible of left side without condylectomy representing calss II type post surgical impairment according to cantor and Curtis classification, which was determined by prosthetic considerations.

PROCEDURE

The preliminary impression(fig 3) were made with polyvinyl siloxane of putty viscosity for the maxillary arch and irreversible hydrocolloidal for the mandibular arch to obtain primary casts from Type II dental plaster for acrylic custom trays constructions. Secondary rubber base impressions were made after border molding with Type III dental stone.The shellac base plate denture base with wax occlusal rim constructed on master casts(fig 4) was used to record jaw relation. The articulation was done on a semiadjustable articulator(fig 5). Try-in was completed with a wax rim made on right palatal half surface adjacent to the posterior teeth and double rows of posterior teeth was placed on the left palatal surface that guided the deviated mandible into occlusion. After processing heat cure acrylic maxillary twin occlusion were inserted (fig 6).

Postinsertion(fig 7)the patient was advised not to masticate on the side of the defect. Follow up evaluation every 3-6 months showed marked improvement in masticatory efficiency(fig 8).

DISCUSSION

This article highlights functional rehabilitation of hemimandibulectomy patient who has undergone resection without reconstruction. Literature review advocates fabrication of guide flange on palatal ramp prosthesis for such patients to prevent deviation of the mandible and to improve masticatory function and aesthetics.

Since a considerable period of time had elapsed after the surgical procedure,scar tissue formation had occurred and guidance prosthesis was not possible. Thus a prosthesis was fabricated with an arrangement of two rows of teeth because the patient could not close her mouth in proper intercuspation and hence could not masticate. After insertion of prosthesis the patient could not intercuspate mandibular teeth properly due to twin maxillary occlusal table. The patient was kept on 6 months recall. After 1 week the patient reported an increase in masticatory efficiency.

CONCLUSION

In patients with mandibular resection the prognosis of any prosthesis is guarded. This present article illustrates functional rehabilitation of hemimandibulectomy patient, who has undergone resection without reconstruction guide flange prosthesis is the most common treatment modality in such cases but in cases where sufficient numbers of abutment teeth are not present and where deviation is massive, providing twin occlusion rehabilitates the patient functionally. The positive mental attitude of the patient towards treatment with assisted physiotherapy led to overcoming the limitations of prosthetic rehabilitation giving satisfactory results.

Fig 1.Preop frontal view

Fig 2.Intraoral View

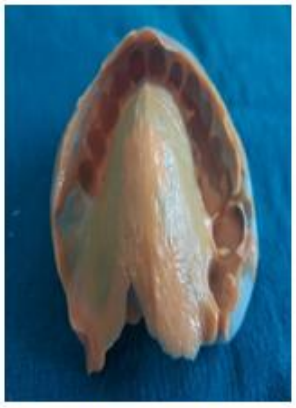

Fig 3.Maxillary Final Impression

Fig 4. Maxillary Master cast

Fig 5.Mounted cast

Fig 6.Finished denture.

Fig 7.Intraoral occlusion

Fig 8. Satisfied patient

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