**Journal of Advanced Medical and Dental Sciences Research**
@Society of Scientific Research and Studies
Journal home page: www.jamdsr.com doi: 10.21276/jamdsr UGC approved journal no. 63854
(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

# CASE REPORT

# Prosthodontic Management of Post Surgical Mandibular Deviation using Mandibular Guidance Flange Prosthesis: A Case Report

[1]Amrita Pritam, [2]Nivedita Mall, [3]Rajiv Pal

[1,2]Post Graduate Student, Department of Prosthodontics, Shree Bankey Bihari Dental College and Research Centre, Ghaziabad, India
[3]Former PG Student, Department of Prosthodontics, Nair Hospital Dental College, Mumbai, India

***ABSTRACT*:**
As we all know that unilateral loss of mandibular continuity because of surgery or trauma results in mandibular deviation towards the resected side. This results in great loss of occlusion on the opposite normal side. It also presents as facial asymmetry and poor esthetics. A correction device 'mandibular guidance flange prosthesis' is indicated in such situations to limit these clinical dilemmas. Guide flange prosthesis literally serving as a guidance device by redirecting the mandibular closure in right way. This clinical report describes the rehabilitation following segmental mandibulectomy using mandibular guidance flange prosthesis.
**Key words:** Guidance flange prosthesis, Rehabilitation, Carcinoma, Mandibular deviation.

Received: 15 December 2018 Revised: 27 December 2018 Accepted: 28 December 2018

**Correspondence to:** Dr. Amrita Pritam, Post Graduate Student, Department of Prosthodontics, Shree Bankey Bihari Dental College and Research Centre, Ghaziabad, India

**This article may be cited as:** Pritam A, Mall N, Pal R. Prosthodontic Management of Post Surgical Mandibular Deviation using Mandibular Guidance Flange Prosthesis: A Case Report. J Adv Med Dent Scie Res 2019;7(1):97-99.

## INTRODUCTION

Loss of mandibular continuity is an unavoidable consequence of surgical management of carcinomas and other related clinical circumstances. It frequently leads to mandibular deviation and altered muscle function. Clinically it manifest as facial asymmetry, poor esthetics and malocclusion. Following the surgical resection of the affected portion of the mandible, the remaining body and ramus of the mandible has tendency to deviate towards medial and superior sides.[1] The relative amount and span of mandibular deviation largely depends on the site and severity of the surgery. It is also being altered by the amount of soft tissue and the presence of remaining natural teeth. Many of the researchers and clinicians have worked on the management of such mandibular deviation. Literature has also evidenced that it's a challenging task as it involves meticulous efforts and inputs. One of the primary aims of management is the rehabilitation of acceptable occlusal function.[2] The commonly employed means to lessen this deviation include usage of skin grafts and flaps for wound closure, intermaxillary fixation in surgical procedure, mandibular guidance flange prosthesis and thorough physiotherapy that would lessen the muscular fibrosis.[3] The fundamental therapeutic intention is to train the mandibular muscles and to re-establish a satisfactory occlusion in such a way that patient can effectively organize opening and closing of mandible. Mandibular guidance flange prosthesis may be used either immediate post-surgically as intermaxillary fixation or within 5-12 days after the resection as removable device. To achieve more efficient occlusal outcomes, it wise to start the guidance therapy as soon as possible. Literature has shown that delaying in the commencement because of extensive tissue loss and other postsurgical issues could possibly result in a failure to re-establish typical maxilla-mandibular relationships.[4] This case report describes the clinical usage of mandibular guidance flange prosthesis in a patient following hemi-mandibulectomy.

## CASE REPORT

A 48 years male patient reported with the chief complaint of chewing, speech and disfigurement due to lower jaw

deviation during closure. On further case history exploration it was revealed that patients had mandibular resection surgery of right side for squamous cell carcinoma of that side. The surgery was performed approximately 3 months back in territory hospital. For the defect closure and reconstruction, surgeons had used patient's pectoralis major myocutaneous muscle graft. Because intermaxillary fixation was unable to achieve; severe mandibular deviation resulted in post surgical phase. It is therefore hemimandibulectomy for squamous cell carcinoma of one side of the mandible. The mouth opening was restricted to about 23 mm with gross asymmetry of the face. There was a deviation of 14 mm of the mandible toward the right side from the midline. TMJ examination also revealed severe deviation of the mandible towards the resected site. The overall oral hygiene was very bad with generalized mucosal mild inflammation. The occlusion was also totally disfigured and mutilated due to resection of few teeth along with the hemimandibulectomy of that side. This has actually given rise to few other interrelated problems like drooling of saliva and halitosis. Our primary and sole aim was to improve the oral hygiene and construct guide flange prosthesis for correction of the mandibular deviation and to improve function. Impressions were made with alginate and master casts were poured with type III dental stone (Kalrock, Kalabhai Karson Pvt. Ltd., Mumbai, India). Firstly, an acrylic plate was fabricated in upper cast using self polymerizing acrylic resin. After this self polymerizing acrylic resin was added to primary plate as acrylic resin reached doughy stage. The site of second acrylic (flange) on initial plate was already predetermined according to the lower dentition. The appliance was finished, evaluated, and adjusted intraorally. The patient is then trained to insert the prosthesis by himself. The midline is once again evaluated to check that it matches. The patient is instructed to wear the prosthesis continuously except while eating food. The patient was given routine post insertion instructions and was motivated to make efforts to learn to adapt to the new prosthesis. Simple exercises were suggested to the patient that helped the patient learn to manipulate the mandible into the proper position [Fig. 1 & 2].

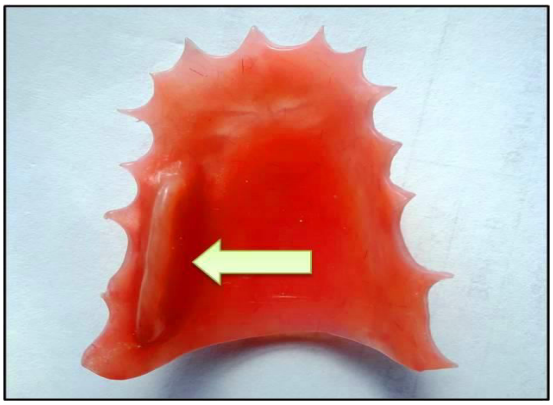

**Figure 1: Mandibular guide flange prosthesis**

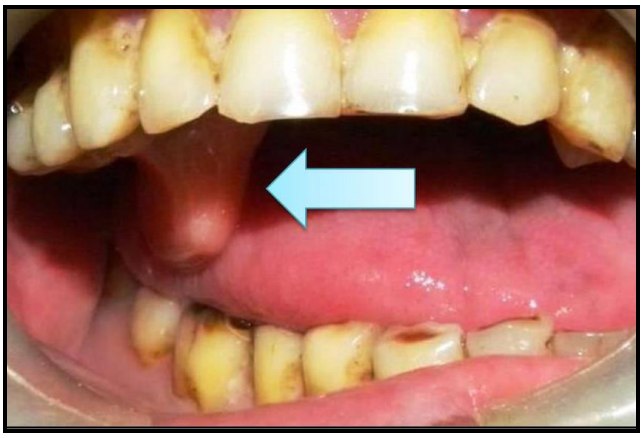

**Figure 2: Mandibular guide flange prosthesis [Intraoral View]**

## DISCUSSION

Literature has shown that oral rehabilitation is a crucial phase of any comprehensive treatment or care. Therefore it must be considered from the time of diagnosis in a complete and comprehensive treatment plan. The first and foremost aim is re-establishment of function and esthetic. Prosthetic methods, including intermaxillary fixation, mandibular-based guidance restorations, and palatal-based guidance restorations minimize mandibular deviation. The relative occurrence of teeth in both the arches is essential for effectual guidance and re-orientation of mandibular movements. Here in this clinical report, patients had all has upper teeth intact. It is actually very imperative for such patient as it offer enhanced proprioception and faster adaptation to normal physiologic state. Moore and co workers showed an innovative technique that includes crowns with a maxillary prosthesis to guide the mandible into a functional occlusion.[5] Mohamed A. Aramany and colleagues analyzed 14 patients who were managed by the use of immediate intermaxillary fixation after segmental resection of the mandible to manage malignant lesions.[6] They asserted that the usage of intermaxillary fixation during the first 6 postoperative weeks reduces the degree of deviation. Fattore et al. suggested that a two piece gunning splint, both for intermaxillary fixation and as a guidance appliance for an edentulous patient, following hemisection of the mandible.[7] Hasanreisoglu et al. advised that for dentulous patients, palatal guide ramps or mandibular guide flange prostheses are useful.[8] Joshi et al discussed the manufacture of mandibular guide flange prosthesis and recommended that a removable prosthesis is an effectual option for most patients with mandibular defects.[10] Prencipe MA et al discussed a procedure by which only 1 mandibular prosthesis can be used both for physiotherapy and eating.[11] They also advocated that this can be easily made by simply inserting and removing the guide flange. Two precision attachments were inserted into buccal surface of the denture base with their patrix and the

corresponding matrixes were inserted into the transparent guide flange. The success of mandibular guidance therapy depends on the early beginning, the nature of the surgical defect and the patient's cooperation. For better results, the prosthetic management can be combined with an exercise program that can be started 2 weeks after the surgery.[9,12-13]

## CONCLUSION

Partial mandibulectomy procedures frequently results in mandibular deviation towards the defect side resulting in loss of occlusion on the un-resected side. Mandibular resections also result in impaired speech articulation, difficulty in swallowing, mandibular deviation, poor control of salivary secretions, and severe facial disfigurement. Mandibular guidance flange therapy can be employed successfully as an adjunct to correct the mandibular deviation after partial mandibulectomy procedures and to minimize allied difficulties like mastication, speech and swallowing.

## REFERENCES


1. Beumer J, Curtis TA, Firtel DN. Maxillofacial rehabilitation: Prosthodontics and Surgical Considerations.St Louis,1979,The CV Mosby Co, p 130-56.
2. Taylor TD, editor. Clinical maxillofacial prosthetics. Chicago: Quintessence Publishing; 2000. pp.155-70.
3. Desjardins RP. Occlusal considerations for the partial mandibulectomy patient. J Prosthet Dent. 1979;41(3):308-15.
4. Monaghan AM, Bear AS. A simple appliance to correct mandibular deviation following hemimandibulectomy. British J Oral Maxillofac Surg1990;28,419-20.
5. Moore DJ, Mitchell DL. Rehabilitating dentulous hemimandibulectomy patients. J Prosthet Dent 1976:35:202–6.
6. Aramany MA, Myers EN. Intermaxillary fixation following mandibular resection. J Prosthet Dent 1977:37:437–44.
7. Fattore L, Marchmont – Robinson H, Crinzi RA, Edmonds DC. Use of a two piece Gunning splint as a Mandibular guide appliance for a patient treated for Ameloblastoma. Oral Surgery Oral Med Oral Patho. 1988;66:662-5.
8. Hasanreisoglu U, Uçtasli S, Gurbuz A. Mandibular guidance prosthesis following resection procedures: Three case reports. Eur J Prosthodont Rest Dent 1992;1:69-72.
9. Prakash V. Prosthetic rehabilitation of edentulous mandibulectomy patient: A clinical report. Indian J Dent Res 2008;19:257-60.
10. Joshi PR, Saini GS, Shetty P, Bhat SG. Prosthetic rehabilitation following segmental mandibulectomy. J Ind Prosthodont Soc. 2008;8:108-11.
11. Prencipe MA, Durval E, De Salvador A, Tatini C, Branchi Roberto. Removable Partial Prosthesis (RPP) with acrylic resin flange for the mandibular guidance therapy. J Maxillofac Oral Surg. 2009;8:19–21.
12. Patil PG, Patil SP. Guide flange prosthesis for early management of reconstructed hemimandibulectomy: a case report JAdv Prosthodont. 2011;3(3)172-76.
13. Chalian VA, DraneJB, Standish SM; Maxillofacial Prosthetics: Multidisciplinary Practice. Baltimore, 1972, The William & Wilkins Co, p 148.


**Source of support:** Nil **Conflict of interest:** None declared