

The rehabilitation of hemi mandibulectomy in a young female patient – A case report

¹Dr. Hema Agnihotri, Asst. Professor, Dept. of Dental Surgery, St. Johns Medical College and Hospital, Bangalore.

²Dr. Purushotam Manvi, Professor and HoD, Dept. of Dental Surgery, St. Johns Medical College and Hospital, Bangalore.

³Dr. Anju Roy, Junior Resident, Dept. of Dental Surgery, St. Johns Medical College and Hospital, Bangalore.

Corresponding Author: Dr. Hema Agnihotri, Asst. Professor, Dept. of Dental Surgery, St. Johns Medical College and Hospital, Bangalore.

Citation of this Article: Dr. Hema Agnihotri, Dr. Purushotam Manvi, Dr. Anju Roy, “The rehabilitation of hemi mandibulectomy in a young female patient – A case report”, IJDSIR- July - 2022, Vol. – 5, Issue - 4, P. No. 204 – 207.

Copyright: © 2022, Dr. Hema Agnihotri, et al. This is an open access journal and article distributed under the terms of the creative commons attribution non-commercial License. Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Most of the benign and malignant lesions of the mandible are treated by resection followed by bone graft to maintain continuity and to achieve good prognosis and prevent future recurrence. The surgical modality no doubt limits the disease but alters the maxillomandibular relationships due to deviation of mandible by the unrestrained pull of muscles on the resected side. Apart from the function, speech and aesthetics, psychological wellbeing and self-confidence also gets affected. Especially in a young woman where aesthetics is important to regain the lost social life. The case report presented here took into considerations patient's requirements which were mainly aesthetic and fixed prosthesis for rehabilitation.

Keywords: hemi mandibulectomy, guiding flange, resection, rehabilitation.

Introduction

Ameloblastoma is a benign neoplasm, odontogenic in nature and associated with high recurrence rate¹.

Treatment modality thereby warrants a wide excision to reduce the possibility of recurrence². Post-surgical rehabilitation is a challenging task for the prosthodontist as resection results in deviation and downward rotation of the mandible that alters the maxillomandibular relationship impairing the function, speech, and aesthetics to a great extent³. Guide flange prosthesis (GFP) is a mandibular conventional prosthesis useful to the patient who is not consistently able to achieve appropriate mediolateral position of the mandible required for adequate mastication⁴

The GFP prosthesis prevents the mandible from deviation while speaking and in function. Loss of mandibular continuity results in deviation of remaining mandibular segment toward the resected side primarily because of the loss of tissue involved in the surgical resection. The final outcome of prosthetic rehabilitation is based on various factors, the most important of all is the extent of the surgical resection, the presence of mandibular continuity and patient's cooperation and

psychological wellbeing⁵. The earlier the mandibular guidance therapy is initiated in the course of treatment; the more successful is the patient's definitive occlusal relationship. This case report describes prosthodontic management of a patient who has undergone a hemi mandibulectomy and was rehabilitated using provisional guide flange prosthesis followed by a definitive fixed cantilever prosthesis.

Case report

A post operated case of a hemi mandibulectomy young female age 32 years reported to Dental department, St Johns Medical College and Hospital, Bangalore. Patient was diagnosed with ameloblastoma at the age of 24 years. Clinical examination and old reports of the patient suggested right segmental hemi mandibulectomy and reconstruction with free fibular flap as a viable treatment for ameloblastoma (Fig 1).



Fig 1: Pre - operative intra - oral view showing reconstructed mandible right side with flap.

The resection on left side led to the loss of mandibular continuity and removal of teeth from 32 to 47 thus resulting in mandible deviating to left side while opening. Patient's chief complaint were unaesthetic appearance because of missing lower anteriors and lack of lip and cheek support. Initially patient was given mandibular guiding flange for 6 months to control the deviation of mandible towards the resected side.

Removable cast metal prosthesis restoring the occlusion and replacing the anteriors was planned to meet the functional and aesthetic needs. As the patient is unmarried and young, she was not convinced for removable prosthesis. Fixed option would have been implant supported prosthesis but not a viable option in her case owing to financial constraints and unfavourable bone determinants. Finally aesthetics along with patient's convenience was given priority over functional rehabilitation. After clinical and radiographic evaluation (Fig 2), fixed cantilever prosthesis was planned using 33, 34, 35, 36 and 37 as abutments.



Fig 2: OPG view showing reconstructed right side.

Primary impression was made with alginate (Zelgan 2002, Dentsply), master cast was obtained in dental stone (Goldstone, Asian Chemicals). Patient's pre and post preparation bites were taken with putty elastomeric impression material (FL exceed). Models were articulated using existing bite of the patient (Fig 3, 4).



Fig 3: Pre and post-operative bite registration



Fig 4: Impression made with elastomeric material.

Temporary crowns with cantilever were tried in the patient's mouth (Fig 5). Bite was verified, anterior arch form and lip support was checked. Patient was satisfied with the trial (Fig 6).



Fig 5: Intra-oral view showing temporary prosthesis.



Fig 6: Intra-oral view showing metal trial.

Impressions with the temporary cantilever prosthesis were taken send to the lab for reference. The final cantilever prosthesis replacing 43, 42, 41, 31 and 32 using abutments 33, 34, 35, 36, 37 were cemented using GIC luting cement (Fig 7, Fig 8).



Fig 7: Intra-oral view showing final prosthesis.



Fig 8: Post-operative view after prosthetic rehabilitation.

Discussion

The recent advances in the field of maxillofacial prosthodontics have changed the outlook in rehabilitation of hemi mandibulectomy patients. With the advent of newer materials, promising results can be achieved in challenging cases⁶. There are many treatment options for restoring the defect like guiding flange prosthesis, conventional acrylic removable partial prosthesis, cast partial dental prosthesis, implants etc. The choice of treatment depends upon the size of resection, the amount of deviation, patient's overall wellbeing, socioeconomic status and patient's cooperation⁷. The case report presented here is of young unmarried woman age 32 years. The surgical resection extended across the midline with the loss of mandibular

continuity and deviation towards the resected side on the right side due to unopposed contralateral pull of musculature. Mandibular guiding flange helped the patient to close the mouth with minimal deviation. Mandibular guiding flange given immediately after surgery helps to minimise deviation thereby optimising masticatory efficiency and minimising facial asymmetry⁸. Cast partial dentures would have helped to restore the occlusion on the resected side and the presence of rest on the remaining teeth would have helped in better distribution of stresses. Patient was not convinced for the removable prosthesis that require daily removal and cleaning. Implant supported prosthesis offers better retention, stability and support as compared to conventional methods⁹. The financial burden of the treatment along with the uncertainty of recurrence implant prosthesis could not be planned. Fixed prosthesis involving cantilever design was formulated that restored the aesthetics along with the comfort of mastication on the non-resected side due to absence of flanges on either side.

Conclusion

It's not always possible to combine function, aesthetics and comfort altogether for the rehabilitation but sometimes we have to compromise to meet the patient's requirements and satisfaction especially if it is crucial for uplifting patient's psychological wellbeing and to regain patients lost self-confidence.

References

1. Varkhede A, Tupkari JV, Mandale MS, Sarda M (2010). "Plexiform ameloblastoma of mandible: Case report." *J Clin Exp Dent.*; 2: 146-148.
2. Olaitan, AA, Arole, G, Adekeye, EO (1998). "Recurrent ameloblastoma of the jaws: A follow-up study." *Int J Oral Maxillofac Surg.*; 27: 456-460. THE

REHABILITATION OF HEMIMANDIBULECTOMY IN A YOUNG FEMALE PATIENT 9

3. Curtis TA, Cantor R (1974). "The forgotten patient in maxillofacial prosthetics." *J Prosthet Dent.*; 31(6): 662-680.
4. Desjardins RP (1979). "Relating examination findings to treatment procedures. In: Laney WR, editor. *Maxillofacial prosthetics.*" Littleton: PSG Publishing; 69-114.
5. Curtis TA, Cantor R (1974). "The forgotten patient in maxillofacial prosthetics." *J Prosthet Dent.*; 31: 662-680.
6. Majage B, Chandrakar N, Chowdhary R, Gala V, Moldi A, Mahoorkar S (2010). "Prosthodontic rehabilitation of hemi mandibulectomy patient with magnet retained overdenture - A case report." *Int J Clin Dent Sci*; 1: 30-32.
7. Marathe AS, Kshirsagar PS (2016). "A systematic approach in rehabilitation of hemi mandibulectomy: A case report." *J Indian Prosthodont Soc.*; 16(2): 208-212.
8. Kar, S., Tripathi, A., & Madhok, R. (2015). "Treatment outcome with guiding flange prosthesis in hemi mandibulectomy patients: Case series of three patients." *Annals of maxillofacial surgery*, 5(2), 266-270.
9. Brown KE (1969). "Complete denture treatment in patients with resected mandibles." *J Prosthet Dent*; 21: 443-447