CASE REPORT

Rehabilitation of a Hemimandibulectomy Patient with Interim Prosthesis

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ABSTRACT

Maxillofacial prostheses are important not only in rehabilitation and aesthetics, but also in improving patient self-confidence and positive reinforcement towards life. Ameloblastoma is such a rare, benign tumor of odontogenic epithelium much more commonly appearing in the lower jaw than the upper jaw which causes severe disfigurement of face. Most commonly segmental or total resection of the mandible is done in these cases. Total resection of mandible usually leads to permanent cosmetic and functional defect due to loss of teeth and bone support. These acquired defects can be treated surgically by autogenous bone grafting and then following up by prosthetic intervention. Here is such a case of an acquired defect in mandible which is treated surgically and prosthodontically.

KEYWORDS: Hemimandibulectomy, Auotogenous bone graft, Rehabilitation, Reconstruction

INTRODUCTION

Prosthodontist possess a tremendous challenge during encountering with the management of maxillofacial patients delivering esthetics and function to a patient.[1] Mandible is the most common site for intraoral tumors which often requires the resection of large portions of the mandible. Severe disfigurement of the face and difficulty in chewing and speech is seen in such patients. The mandibular discontinuity defects can be surgically reconstructed with autogenous graft, allogeneic graft, xenograft, or alloplastic implants such as titanium, vitallium, stainless steel, silicone, and plastics. [2] Management of patients who require mandibular resection without bony reconstruction is difficult. A classification of mandibular defects has been described by Cantor and Curtis.[3] This system classifies defects based on remaining structures. Cantor and Curtis Classification Class I: Mandibular resection involving alveolar defect with preservation of mandibular continuity. Class II: Mandibular Resection defect involving loss of mandibular continuity distal to the canine area. Class III: Resection defect involves loss up to the mandibular midline region. Class IV: Mandibular Resection defect involving the lateral aspect of the mandible, but are augmented to maintain pseudo articulation of bone and soft tissues in the region of the ascending ramus. Class V: Manidular 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. Here is a case where right side hemimandibulectomy was done and was reconstructed with the autogenous graft and then interim prosthesis was given to the patient.[4]

How to cite this article:
Raipure PE, Prasad P. Rehabilitation of a Hemimandibulectomy Patient with Interim Prosthesis. Int J Dent Med Res 2014;1(4):83-86.

CASE REPORT

A 45 year old male patient was referred from the department of oral & maxillofacial plastic surgery for prosthetic rehabilitation to the department of prosthodontics. History revealed that the patient underwent right hemi-mandibulectomy due to Ameloblastoma 1 year back wherein patient had undergone total hemi-mandibulectomy involving the right coronoidectomy and leaving the right condyle intact which was reconstructed using autogenous fibula graft. A post-surgical panoramic radiograph revealed Graft ranging just above the right angle of mandible descending down to replace whole body and symphyseal region and no coronoid process is visible [Fig1].

Fig 1: Orthopantomograph reveals mandibular right side reconstructed with autogenous graft

Clinical examination revealed mild deviation of the mandible towards the resected site. The intraoral examination showed thick, movable soft tissues, reconstructed alveolar ridge and obliteration of buccal and lingual sulci in the right half of mandibular region (mesial to left central incisor)[Fig2].Mouth opening due to the action of

Fig 2: Intraoral View (Manibular Defect on Right Side reconstructed with the autogenous graft)

the left mandibular depressor muscles was normal[Fig3]. The patient was able to achieve an appropriate mediolateral position of the mandible and left side intercuspation.[5] On the basis of clinical and radiographic examination the patient was classified as Class V Mandibular defect according to

Fig 3: Adequate mouth opening

Cantor and Curtis classification of mandibular defects. Based on the clinical situation and patient expectation and demand a conventional interim prosthesis was planned to fabricate. Two sets of the maxillary and mandibular preliminary impressions were recorded using stainless steel stock trays with irreversible hydrocolloid impression material [Fig4].

Fig 4: Primary Impressions and casts

The mandibular stock tray was modified by trimming the buccal flanges to make the mandibular impression. The impressions were poured with Type III gypsum material and casts were retrieved. A special custom tray [Fig 5] was fabricated for the mandible. The peripheral border molding was done

Fig 5: Prefabricated custom tray

and the mandibular final impression was made

[Fig6]. The maxilla-mandibular relations were recorded using modeling wax and were transferred on to the articulator [Fig 7].

Fig 6: Final Functional Impression

Fig 7: Jaw Relation

Fig 8: Try in

Fig 9: Final Prosthesis in situ

Teeth arrangement was done according to the left side intercuspation. Try in was verified in the mouth and the patient consent was taken[Fig 8]The partial interim denture was then fabricated, verified and delivered to the patient[Fig 9].

DISCUSSION

The success of a maxillofacial case depends upon the type and quality of the surgical reconstruction done before prosthetic intervention. The autogenous graft (fibula, tibia) is well known to be used in reconstruction of the jaws.[6] The correction of disfigurement of the patients face largely depends on how skillfully the graft is positioned and the approximation of surrounding soft tissue.[7] The Prosthodontist role again becomes little simpler if the occlusion on the nonaffected side is kept unaltered with little deviation of mandible. In this case, the surgical reconstruction of the mandibular discontinuity and soft tissues was done with great precision, which made my job simpler. Our challenge was to improve the function, facial disfigurement and speech. The soft tissue over the residual ridge on affected side was little movable. So to counteract the compressibility of teeth on one half of midline and movable tissue on affected side we needed a fuctional mandibular impression. Due to financial reasons the patient demanded of interim acrylic partial denture instead of cast partial denture. The prostheses was then fabricated and delivered to the patient and regular follow up were done.

CONCLUSION

Reconstruction of mandibular continuity after total hemimandibulectomy leads to improved function, cosmetics and a superior quality of life in appropriately selected patients. Maxillofacial prostheses are important not only in rehabilitation and aesthetics, but also it improves patients confidence and resocialisation in the society.

REFERENCES

1. Chalian VA, Drane JB, Standish SM. Maxillofacial prosthetics Baltimore. Williams and wilkins co;1972.Pg 127
2. Wilson GW, Bosack RC. Reconstruction after hemimandibulectomy using a costochondral rib graft and a dacron-urethane tray with autogenous iliac bone: report of a case. J Oral Maxillofac Surg. 1988 Feb; 46(2):138-42.

3. Beumer J III, Marunick MT, Curtis TA, Roumanas E. Acquired defects of the mandible: etiology, treatment, and rehabilitation. Maxillofacial Rehabilitation: Prosthodontic and Surgical Considerations. St Louis: Ishiyaku EuroAmerica.1996:113–224.
4. Moore, D. J. and Mitchell, D. L. Rehabilitating dentulous hemimandibulectomy patients. J Prosthet Dent.1976;35:202-206,.
5. Desjardins, R. P. Occlusal considerations for the partial mandibulectomy patient. J Prosthet Dent. 1979; 41:308-315.
6. Curtis, T. A. and Firtell, D. N. Maxillofacial Rehabilitation: Prosthetic and Surgical Considerations. a) Initial Reconstructive Steps p. 106-113. b)Prosthetic Rehabilitation p. 150-184.C. V. Mosby, St. Louis.J Prosthet Dent .1979.
7. Newton, Andres Prosthodontic rehabilitation following total mandibular reconstruction: A clinical report. J Prosthet Dent. 1988; 60:139-142.

Source of Support: Nil
Conflict of Interest: Nil