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A Case Report of Prosthodontics Treatment for Maxillary Defect

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Abstract

The management of patients with maxillary defect requires multidisciplinary approach and prosthetic restoration would be necessary to improve the oral health related quality of life of the patients. A case report of rehabilitation of surgically treated maxillary defect is discussed.

Introduction

Rehabilitation of congenital or acquired defect of palate, resulting in communication between oral cavity and nose and/or maxillary sinus, presents challenge to the patients as well as the clinician. In our Myanmar, only 60% of patients with maxillary defect received further maxillofacial prosthodontic treatment and also100% of mandibular defect patients failed to receive maxillofacial prosthodontic care. [1] Maxillary defect can be rehabilitated either by surgical correction with plastic surgery or by obturator prosthesis. Maxillofacial prosthetic restoration may be a substitute for or an alternative of plastic repair.

Case report

A 23 years old male patient was referred to Department of Prosthodontics, University of Dental Medicine, Mandalay (UDM, Mdy) from Department of Oral and Maxillofacial Surgery, UDM, Mdy for the prosthetic management of maxillary defect. By history taking, it was known that he was surgically managed (maxillectomy) for his swelling at left side of face with biopsy result of Adenofibrosarcoma on the date of 10.10.2014.

On clinical examination, his defect is classified as Class II defect according to Aramany's Classification for Maxillectomy Defects [2], based upon the relationship of the defect with the abutment teeth (Fig. 1) and as Class II A(vertically involves the alveolus and the antral wall, which would inevitably cause oro-antral or oro-nasal fistulae. Orbital floor or rim remains intact and horizontally involves unilateral maxillary alveolus and hard palate, sparing the contra-lateral side and nasal septum) according to Liverpool Classification of Maxillectomy Defect [3] (Fig. 2).

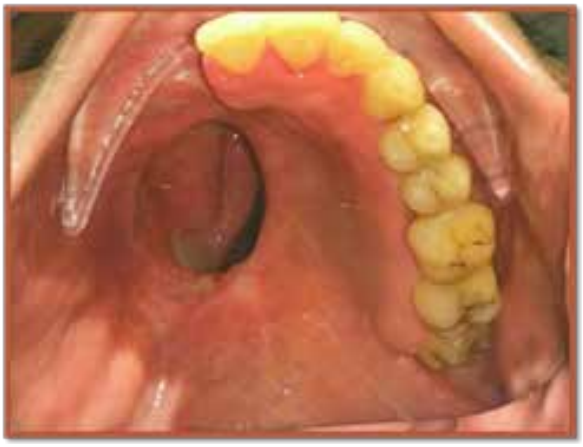

Figure 1. Intra-oral view of defect (Aramany's classification II)

Figure 2. Radiographs of maxillary defect (Liverpool classification II a)

Prosthodontics management

Depending on time between surgery and insertion of prosthesis, three types of obturators (Surgical obturator, temporary/interim obturator and definitive prosthesis) are used for rehabilitation of the patient with acquired palatal defect. The surgeon will evaluate the healing of surgical wound and depending on that will advise for the time for fabrication of the prosthesis. Fabrication of definitive prosthesis can be carried out at around 6 months after surgery. As far as remodeling of tissue at the wound is concern, it can continue for 1 year after the surgery. Factors to be considered for timing of fabrication are (i) Size and location of the defect (ii) Healing of surgical wound (iii) Prognosis of tumor recurrence control and (iv) Effectiveness of present obturator.

The definitive prosthesis should have proper contour on oral side to restore the patient's form and function (biomechanics principle) and on defect side to obturate the defect because poor sealing is the chief complaint from the patient in every visit. For partially edentulous cases, the design of oral side will be comparable to removable partial denture and will more commonly have the base metal framework. Hard acrylic was used for fabrication of the base at the posterior one third of the denture to enhance force distribution and stability of the denture base when function (Fig. 3)

Figure 3. Metal frame work of oral side of definitive prosthesis

Figure 4. Modification of bulb part of defect side of definitive prosthesis with polyvinyl siloxane soft liner

The hollow bulb obturator is used widely in defect side for rehabilitation of maxillectomy patients. Depending on conditions and requirements, various modifications in the technique and designing have been advocated. The contemporary materials and techniques for obturator prosthesis can provide solution for various clinical conditions which will lead to a successful rehabilitation and thereby improving quality of life of the patient.

In this case, the obturator was designed to obtain the retention and proper seal from the anatomical structures of the defect by extension of the silicone soft liner bulb to engage the soft tissue undercut over the scar band of the defect. The defect part of definitive prosthesis was made some modification. Firstly, it tissue surface was treated by sand-blasting and primer was applied to it. Then, sectional index was reassembled and polyvinyl siloxane soft liner material (Mucopren) was injected (Fig. 4).

Conclusion

The management of patient with maxillary defect requires multidisciplinary approach. The patient should be encouraged and educated towards receiving maxillofacial prosthodontic care for maintaining their oral health related quality of life. Enhancement of manpower and material resources to improve quality of life of patients with maxillofacial defect should be considered.

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