Management of Oromaxillary Defect with a Definitive Obturator

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ABSTRACT

Prosthetic rehabilitation of the maxillofacial region has played an important role in improving the quality of life of patients with acquired maxillary defects.[1]Obturators extend into nasal defects to various degrees and contribute to the effectiveness of oronasal separation, the retention and the stability of the prosthesis, thereby improving the patients speech and aesthetics. The degree of maxillofacial prosthetic treatment depends on various factors, such as the size and location of the defect, the absence or presence of natural teeth and availability of tissue undercuts around the defect cavity.[4]Maxillary defects can be very damaging in terms of the psychological impact on the patient; hence, it is imperative for the prosthodontist to take prompt measures to institute a definitive prosthesis for the patient. The present case report deals with the fabrication of a definitive obturator for a hemimaxillectomy patient.

KEYWORDS: Hemimaxillectomy Patient , Definitive Obturator

INTRODUCTION

Patients with acquired oromaxillofacial defects have either had an ablative cancer surgery or a severe trauma. Various maxillofacial defects cause facial disfigurement affecting quality of life of the patient. Among all intraoral defects, maxillary defects must be the most common one that can appear in the form of communication between oral cavity and maxillary sinus or nasopharynx.[3] Such defects vary as far as etiology, location and size are concerned. The size of the defect may vary from small to large, which may include parts of hard and soft palate, alveolar bone, floor of nasal cavity, and maxillary sinus and may extend up to floor of orbit and zygomatic complex. A prosthesis used to close a palatal defect in a dentate or edentulous mouth is referred to as an obturator. The obturator prosthesis is used to restore masticatory function and improve speech, deglutition and cosmetics for maxillary defect patients.[5]

CASE REPORT

A 58 year old male patient reported to the department of Prosthodontics and Crown & Bridge ,Rungta College of Dental Sciences and Research Bhilai,India,with a cheif complaint of loss of partition between oral and nasal cavity will lead to passage of fluid into cavity and also with the difficulty in speech ,mastication and deglutition. On recording the medical history, was revealed that the patient had trauma in the zygomatic region that is zygomatic maxillary complex fracture and undergone surgery 3 years back, After that miniplates placed in the region to stabilize the fracture and meshwork also given to hold in the orbit region (Fig.1,2). On Clinical Examination, a hemimaxillectomy defect seen in the midregion, there is opening passage between oral and nasal cavity will lead to fluid into cavity. The tissues were assessed as healthy, and the defect area ,which measured with 1.5cm superioinferiorly and 1 cm mediolaterally diameter. Teeth missing with 11,12. The periodontal condition for other teeth was assessed as fair (Fig. 3).

Fig:01 Preoperative View (front view).

Fig:02 Lateral View.

Fig:03 Intra oral View (Maxillary arch)

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4.Treatment Procedure: The pre-operative impression was made using an irreversible hydrocolloid material (Hydrogum 5, Zhermack, Italy) in a perforated stock tray. Before making the preliminary impression the defective site was blocked with the guaze piece ,So that the material will not enter into the cavity region.(as seen in Fig: 04).After making the impression, the impression was poured with dental stone (Gold Stone,India) to produce the positive template/cast (Fig.5).

Fig:04: Blocked out with Guaze piece for impression.

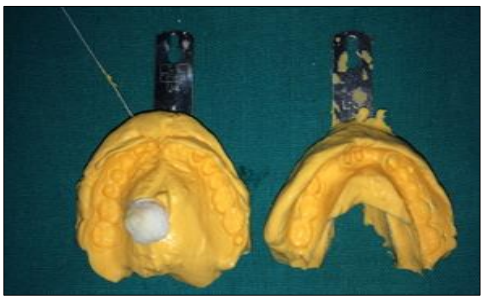

Fig:5: Primary Impression

The final impression was made using elastomeric impression material. The impression was poured with type 4 dental stone to obtain the master cast. The undercut area was block out in master cast. For trying adapted the shellac base plate over the cast and then a teeth to be arranged in the occlusion. Teeth are arranged as per the aesthetic requirement of the patient,(as seen in fig 06).The wax try-in was carried out to check for the patient's chief complaint of phonation, nasal regurgitation, and irritation of the mucosa. (Figs 7 and 8)

Fig:06: Master Cast with teeth arrangement

Additionally, esthetics and occlusion were also evaluated Denture finishing and polishing was carried out in a conventional manner.(as seen in Fig:09,10,11). The prosthesis was inserted; the functional aspect of the

Fig:07 Try in (Maxillary Arch)

Fig:08: Try in done

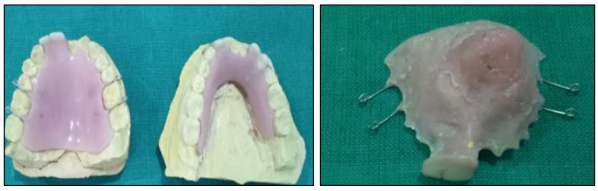

Fig:09: Finished and polished prosthesis

Fig:10 Prosthesis insertion View.

Fig:11 Prosthesis delivered.

prosthesis was assessed by asking the patient to drink a glass of water; improvements in esthetics and phonation were also noted. The patient was instructed about maintenance of the prosthesis, insertion, removal, hygiene, and the importance of recall appointments. To evaluate the condition of the surgical site and prosthesis, a recall schedule was revised at 2 days, 1 week, 6 months, and on a yearly basis. The patient expressed contentment with the treatment, and reported no complaints regarding the dynamics of prosthesis, speech impairment, denture sores, burning sensation in the oral and nasal cavity, and regurgitation of fluids. She reported an overall improvement in general well-being and quality of life owing to her improved nutritional status.

DISCUSSION

Management of the patient with congenital or acquired defect of palate,resulting in communication between oral

cavity and nose or maxillary sinus, presents challenge to the prosthodontist. The prosthodontistic management involves use of obturator prosthesis. A obturator (Latin obturare to stop up) is a disc or plate, natural or artificial, which closes an opening or defect of the maxilla. The preliminary function of obturator are to improve function when deglutition and mastication were impaired,it improve speech or in some instances makes speech possible.It reduces the flow of exudates into the mouth.[1] Approximately 6months after surgery consideration may be given to the construction of a definitive obturator prosthesis. The timing will vary depending on the size of the defect ,the progress of healing the prognosis that causes the effectiveness of the present obturator and the presence of teeth or the absence of teeth. Changes associated with healing and remodelling will continue to occur in the border areas of the defect for atleast 1 year .Dimensional changes are primarily related to the peripheral soft tissues rather than to bony support areas (Zarb,1967;Chalian et al,1971;Beummer III et al,1979).[5] In this present situation case the defect site area is not too large hence a simple approach apply on it. While the hollow bulb obturator is required in large defect area of the palate region. Maximum distribution of support is achieved by incorporating more of the remaining teeth into the prosthesis and retention and stability gain by the two adams clasp which engage into the both sides of first molars. In any obturator case ,it is important to know that the affected palate provides how much tissue support and teeth support which rests on it. Efforts were taken to fabricate the prosthesis by abiding the basic rules of denture preparation.

CONCLUSION

The management of the patient with maxillectomy requires a multi disciplinary approach. The contemporary materials and techniques for obturator prosthesis can provide solution for various clinical conditions. Though it is difficult as well as challenge to improve the quality of life for hemimaxillectomy patients when compared with patients with conventional prostheses, success can be achieved with the skill, knowledge and experience of a prosthodontist. The definitive obturator prosthesis for a hemimaxillectomy patient resulted in regaining functional integrity and also provided psychological well being of the patient.

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