

OBTURATOR PROSTHESIS FOR REHABILITATION  
OF ACQUIRED MAXILLARY DEFECT  
– A CASE REPORT

## Abstract :

Malignancies are common in oral region which are treated through surgical intervention. These surgical interventions sometimes lead to altered anatomy and devastating effect on the patient's esthetics, self confidence, speech and mastication. Rehabilitation of these acquired defects can be accomplished by using various types of microvascular flaps or by prosthetic means. Surgery is preferred means of treatment but it may not be feasible in many clinical scenario. So prosthetic rehabilitation is best alternative. Prosthetic rehabilitation of missing oral and extra oral structures should aim at restoration of normal function of mastication, speech, swallowing, appearance etc. This case report describes a case of acquired maxillary defect rehabilitated using an interim obturator.

Key words: Obturator, Acquired palatal defect, Maxillectomy.

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## INTRODUCTION

Malignant neoplasm of upper gingiva and hard palate nearly account for 1-5% of total occurrence in the oral cavity. Two thirds of the lesions which involve these areas are squamous cell carcinomas.

Most of these carcinomas invade the underlying bone when diagnosed. The recommended treatment for these types of lesion are alveolectomy, palatotomy, partial/ total maxillectomy. These surgical defects can result in multiple problems as it disturbs both form and function of normal stomatognathic system.

It results in hypernasal speech, regurgitation of food/fluid

into nasal cavity, impaired mastication and deglutition. At times it also affects the facial contour of the patient. Rehabilitation of these acquired maxillary defect can be accomplished by using various types of flaps or by prosthetic means. Surgical reconstruction is the preferred treatment but it may not be feasible in many clinical scenario when defect is large, chances of recurrence are there and there is general disability of patient.

Prosthetic rehabilitation seems to be a better alternative. The prosthesis that is fabricated to repair the defect is called as a maxillary obturator.

According to Glossary of Prosthodontic terms, an obturator

is a prosthesis which is fabricated so as to cover or maintain the integrity of the intra oral structures which may have been lost as a result of congenital, acquired or developmental disease process.

Obturators for post surgical defect have been described to be three types : (1) Surgical obturator (2) Interim Obturator (3) Definitive obturator.

The surgical obturator - It is a base plate type appliance which is constructed from the pre-operative impression cast and inserted at the time of resection of the maxilla in the operating room to serve as a matrix for keeping surgical packing in place, reducing wound contamination by covering the defect, preventing hematoma formation, aiding speech and deglutition and providing psychological assurance to the patient that rehabilitation has begun. The surgical obturator must not be removed for 7 - 10 days post-surgically.

The temporary / interim obturator - An interim obturator is a maxillofacial prosthesis which is made following completion of initial healing after surgical resection of a portion or one side or both side maxillae; majority of times some or all teeth in the region of the surgical defect are removed during surgical procedure. It is provided after few weeks of the healing period. It aids in initial closure of the surgical defect following initial healing. The interim obturator is a provisional prosthesis which is made when a clearly well defined surgical defect margin exists and no further surgical procedures are planned.

The definitive obturator - A definitive obturator is a maxillofacial prosthesis that replaces part or all of the maxilla and associated lost teeth due to surgery or trauma. A definitive obturator is fabricated only after it has been

confirmed that there will not be any further tissue changes occurring or that the chances recurrence of tumor are unlikely, which allows for a permanent prosthetic rehabilitation.

The following case report describes a case of acquired maxillary defect rehabilitated using Interim obturator.

#### CASE REPORT

A 40 years old male patient (Figure 1) reported to the Department of Prosthodontics and Crown & Bridge with the chief complaint of difficulty in speech and mastication. He was also concerned about esthetics due to acquired maxillary defect (Aramany Class VI). Patient had a history of carcinoma and had undergone partial maxillectomy for resection of the same 2 and a half months ago. On intra-oral examination a defect was seen (Figure 2), which extended from second premolar region of first quadrant to second premolar region of second quadrant and involved the labial sulcus. First and second molars were present on both sides. Initial healing had taken place. An interim obturator was planned so that definitive treatment could be delayed until sufficient healing occurs.

Moreover, patient can get accustomed to wearing a prosthesis until a definitive obturator is fabricated. It was planned that acrylic teeth would be incorporated in the prosthesis for esthetic purpose but those would be kept out of occlusion so that minimum load is exerted on to the still healing ridges and mucosa.

Preliminary impressions were made with irreversible hydrocolloid (Algitec) and stone cast (Gypstone, Prevest, DenPro) was obtained. (Figure 3)

Special trays were fabricated with autopolymerizing acrylic



Figure 1: Extra oral photograph of patient

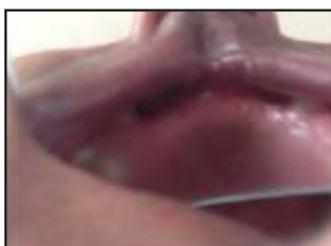


Figure 2 : Intra oral photograph of defect



Figure 3: Preliminary cast



Figure 4: Final cast



Figure 5 : Investing of waxed up denture



Figure 6 : Finished and polished prosthesis



Figure 7 : Denture insertion

resin after blocking out undercuts. Border moulding was done using low fusing compound and final impression was made with light bodied silicone (Zetaplus). Final cast was poured in Type IV gypsum (Kalrock, Kalabhai). (Figure 4)

Undercuts were blocked with baseplate wax and autopolymerizing acrylic resin record bases were fabricated. Occlusal rims were fabricated and jaw relations recorded.

Teeth arrangement and try-in was done.

Wax-up was done and prostheses invested, dewaxed and processed in conventional manner. (Figure 5)

Prostheses was retrieved, finished and polished (Figure 6). Prosthesis was delivered (Figure 7) and patient was recalled after 24 hours, 1 week and 1 month. Patient was satisfied with the prosthesis and mentioned an improvement in speech and mastication.

#### DISCUSSION

Rehabilitation of maxillary defects very often puzzles the clinicians as a great dilemma still exists whether to go for surgical or prosthetic rehabilitation. Surgical rehabilitation is not done until the defect is stable and the lesion is less likely to recur. Also it is not possible in each and every case to go for surgical intervention.

The basic advantage of surgical reconstruction are permanent closure of oro-nasal communication. Problem with this procedure are questionable prognosis of vascularized flap with autogenous bone graft particularly for very large defects because the vessels of the free flap are compromised with partial necrosis.

As reported by Corderio et al, there are systemic complications in 11.7% of patients and in 9.1% re-exploration is necessary because the vessels of the free flap are compromised with partial necrosis in 1.8% cases.

Other than this patient needs to be motivated for a second surgery and have to be convinced for another surgical wound at donor's site for the graft.

Prosthetic rehabilitation is seen to be a better alternative for such cases.

Advantage of obturators include avoidance of any further surgery, allowing the defect to keep under control in case of recurrence of primary disease, provision for replacement of teeth and can be planned at any time soon after surgical resection. In this particular case, a temporary/ interim obturator made up of heat polymerizing acrylic resin was planned so that definitive treatment could be delayed until sufficient healing occurs. Acrylic teeth were incorporated into the prosthesis for esthetics and were kept out of occlusion so that minimum load is transferred to underlying

tissues and ridges. The purpose of interim prosthesis was to allow sufficient time so that the patient's awareness of wearing a foreign object would decrease gradually with increasing time. Apart from this, it shall also serve as a diagnostic aid to test patient's ability to manage with the obturator.

#### SUMMARY

An interim obturator can be used to rehabilitate an acquired maxillary defect, protecting it from fluid contamination and resultant infection and aid speech and mastication till complete healing of the defect occur. Rehabilitation of individuals with acquired maxillary defects requires a sympathetic, patient and sequential approach whereby the individual should be given time to adjust to the altered anatomy of oral cavity and the prosthesis for a successful prognosis.

#### REFERENCES

1. Mukeshsoni, Jain Deshraj Interim Obturator Rehabilitation of a Maxillary Defect –Case Report IOSR Journal of Dental and Medical Science ; Volume 14, Issue 2 Ver. VII (Feb. 2015), PP 01-03.
2. Tirelli G, Rizzo R, Biasotto M, Di Lenarda R, Argenti B, Gatto A, Bullo F. Obturator prostheses following palatal resection: clinical cases. Acta Otorhinolaryngol Ital. 2010 Feb;30(1):33-39
3. Cordeiro PG, Santamaria E. A classification system and algorithm for reconstruction of maxillectomy and midfacial defects. Plast Reconstr Surg 2000;105:2331-2346
4. Singh M, Bhushan A, Chand S Obturator prostheses for hemimaxillectomy patients Journal of Oral Rehabilitation 2001 28; 821-829
5. Mubashir A S et al Management of Post Surgical Defect in the Mandible with an Interim Obturator: A Case Report Int J Oral Health Med Res | MAY- JUNE 2015 | VOL 2 | ISSUE 1
6. Ahmed Bilal Rehabilitation of surgically resected soft palate with Interim Velopharyngeal Obturator. International Journal of Oral and Craniofacial Science ; 2015; 1(2); 31-33