

## Case Report

**Immediate Obturator Prosthetic Rehabilitation of Maxillary Defect: Case Report**Singh Pardeep<sup>1</sup>, Sheoran Kirtika<sup>2</sup>, Attresh Gyanander<sup>3</sup>, Yadav Pradeep<sup>4</sup><sup>1</sup>Post graduate Student, Prosthodontics, Post Graduate Institute of Dental Sciences, Rohtak, Haryana<sup>2</sup>Post graduate Student, Periodontics, Post Graduate Institute of Dental Sciences, Rohtak, Haryana<sup>3</sup>MDS, Oral and Maxillofacial Surgery.<sup>4</sup>Post graduate Student, Oral and Maxillofacial Surgery, Harvansh Singh Judge Institute Of Dental Sciences, Chandigarh, Haryana.**\*Corresponding author**

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**Abstract:** Squamous cell carcinoma is common in oral cavity, which is treated through surgical intervention. Surgical procedures are responsible for creating catastrophic effects on aesthetics, functional and psychological aspects of patients. Anatomic defect created through surgery forms communication among the oral cavity, nasal cavity and maxillary sinus. In such cases it is very difficult for the patient to perform various normal functions like mastication, swallowing, and speaking etc. Goal of prosthodontist is to restore missing structure and rehabilitate with obturator prosthesis to achieve normal function and esthetics of patient.

**Keywords:** Squamous cell carcinoma, surgical intervention, catastrophic effects

**INTRODUCTION**

Oral squamous cell carcinoma (SCC) represents 90% to 95% of all malignant neoplasms of the oral cavity. It is classically regarded as an adult disease entity and has a high correlation with alcohol and tobacco consumption [1]. Oral SCC occurs in several well established intraoral sites, including the floor of mouth, tongue (most common), gingiva, lips, and buccal mucosa. It might also present in the tooth-bearing segment of either the maxilla or the mandible, with bony involvement. The recommended treatment for these type of lesions are alveolectomy, palatectomy, partial/total maxillectomy, depending on the severity & location of the actual lesion, patient's age and general health status and histology of lesion. Post surgical effects results in hyper nasal speech, regurgitation of food/fluid into nasal cavity, impaired mastication and deglutition. At times, it affects the facial contour of the patient, particularly when it involves one or both sides of maxilla with or without associated paranasal sinuses. Reconstructive options range from a nonbiologic obturator (a modified denture that extends to replace the resected tissue) to complex, microvascular, free-tissue transfer (composite fibula, scapula, deep circumflex iliac artery, or soft-tissue rectus transfer), depending on the extent of resection as well as patient factors [4-6]. Surgical reconstructions are usually considered when extensions of the defects are small. For larger defect, prosthetic rehabilitation seems to be a better alternative,

since more risks are involved for survival of the graft. The prosthesis that is fabricated to repair the defect is called as a maxillary obturator. An obturator (Latin: obturare, to stop up) is a disc or plate, natural or artificial, which closes an opening or defect of the maxilla as a result of a cleft palate or partial or total removal of the maxilla for a tumour mass [2]. The maxillofacial-prosthodontist has two primary objectives of to restore the functions of mastication, deglutition, and speech and to achieve normal oro-facial appearance[3].

Depending upon the time period elapsed from surgical resection of maxilla, the obturator can be of three types: the surgical obturator, the temporary or intermediate obturator and the definitive obturator. The present case report is about male patient having scc in maxilla and rehabilitated with surgical obturator following maxillectomy.

**CASE REPORT**

A 45 years old male reported to department of Oral Medicine and Radiology in PGIDS Rohtak with chief complaint of heaviness and pain in upper right side of maxilla. Patient was not able to chew properly. Clinical examination revealed asymmetry on right side of face and continuous nasal discharge fig.1,2.



**Fig-1: pre operative**



**Fig-3: scrapping of cast**



**Fig-2: asymmetry on right side**



**Fig-4: obturator appliance**

Intraoral examination did not show any significant abnormality but in CT of maxilla, there was huge radiolucency and diagnosed with squamous cell carcinoma Patient was planned to go for surgical intervention (hemimaxillectomy) for above said pathology. Surgical resection of the cancer tissues was planned followed by restoration of the defect with the surgical obturator. Patient was referred to department of prosthodontics for construction of obturator. In collaboration with oral surgeons and oncologist, incision line and surgical landmark was decided followed by taking of primary impression with irreversible hydrocolloid. Patient's impression was poured with type III gypsum material (Kalstone; Kalabhai Karson, Mumbai, India) to obtain a working cast and was outlined with the anticipated line of resection. Review of the design was done by the surgeon to verify the anticipated scope of the planned resection. Scraping of the cast was done to achieve the normal anatomical contours in the labial vestibule. fig.3

Adams clasp and ball clasp was made with 21 gauge stainless steel wire that engaged the labial infrabulge retentive areas of the remaining healthy teeth on the nonresected side .Plate was fabricated by incorporating the clasps with heat polymerizing acrylic resin (DPI Heat cure; Dental Products of India, Mumbai, India) in conventional manner fig.4. Finishing and polishing of the palatal plate was done in usual manner. After fabrication of the obturator, patient was operated for resection of the right maxilla to eradicate all possible cancerous tissues. surgical defect area was examined carefully fig 5



**Fig-5: maxillectomy defect**



**Fig-6: insertion into patient's mouth**

Prosthesis was disinfected before trying it in patient's mouth with 0.2% glutaraldehyde solution. Minor adjustments were done to fully seat the prosthesis in position immediately after the surgery. Surgical pack was placed in the defect area before placement of the obturator if necessary. Surgical obturator was placed after maxillectomy fig 6. Patient was scheduled for routine recall appointments for the examination of the healing tissues and adjustment of the obturator.

#### DISCUSSION

Rehabilitation of patients with acquired maxillary defects is relatively simpler than rehabilitation of defects in the mandible, and pleasing as well as accepted outcomes can be identified at the end of treatment. On the other hand, great efforts should be given in dealing with large defects to obtain the substantial requirements for retention and support of the prostheses.[7] Very often the clinicians get puzzled as a great dilemma still exists whether to go for surgical or prosthetic rehabilitation. The positive features of obturators include avoidance of any further surgery, allow 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. The purpose of making a simple acrylic plate initially 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 also served as a diagnostic aid to test patient's ability to manage with the obturator. The major deficits and difficulties that occur after resection may have a psychological impact on the patient that may be alleviated by the presence of the surgical plate[8,9]

#### CONCLUSION

In present case report, patient was rehabilitated with normal form, function and esthetics and further patient was recalled for construction of definitive obturator after follow up of 6 months.

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