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PALATAL REHABILITATION USING INTERIM OBTURATOR -A CASE REPORT

Dental Science

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ABSTRACT

Management of the patient with congenital or acquired defect of palate, resulting in communication between oral cavity and nose and/or maxillary sinus, presents challenge to the clinician. The prosthodontic management involves use of obturator prosthesis. This article discusses various aspects of the obturator prosthesis.

KEYWORDS

Maxillectomy, maxillofacial prosthesis, obturator

INTRODUCTION

Maxillofacial prosthesis is the art and science of anatomic, functional or cosmetic reconstruction by means of nonliving substitutes in the regions of maxilla, mandible and face that are missing or defective because of surgical intervention, trauma, pathology or congenital malformation. Despite remarkable advances in surgical management of oral and facial defects, these reconstructive surgical procedures cannot satisfactorily rehabilitate the defect. For increasing life span of the affected individuals have made maxillofacial prosthetics a challenge in the field of dentistry. The most important objectives of the maxillofacial prosthesis and rehabilitation include:

1. Restoration of aesthetic and cosmetic appearance of the patient.
2. Restoration of function.
3. Protection of tissues.
4. Therapeutic or healing effect.
5. Improving the quality of life.
6. Psychological therapy.

Maxillary defects

Defects that are either acquired or congenital in nature in the mid facial (maxillary) region are referred to as maxillary defects. They are classified as follows:

1. Congenital maxillary defects
2. Acquired maxillary defects

Congenital maxillary defects Congenital maxillary defects include the cleft lip and cleft palate. Other defects are submucous cleft palate, Pierre Robin syndrome and hemifacial microstomia.

Acquired maxillary defects

Most acquired defects occur due to surgical resection of tumours. Common tumours of this region include epidermoid carcinoma, salivary gland tumours, malignant mesenchymal tumours, benign mesenchymal tumours, etc. The resection of a maxillary tumour requires a medical and rehabilitation team composed of a surgeon, maxillofacial prosthodontist, radiologist, radiation oncologist, medical oncologist, nutritionist, psychologist, nursing staff, laboratory technician and social worker, to obtain an optimal treatment outcome. A maxillofacial prosthodontist should be consulted prior to performing the surgery, if the patient needs to be rehabilitated with obturator prosthesis. It is the responsibility of the prosthodontist to suggest various treatment plans to the surgeons regarding prosthodontic requirements for restoring maxillectomy defects. Thus, a proper diagnosis, consultation and good planning are of prime importance prior to treatment. Surgical considerations for optimal prosthetic outcome. An overall successful treatment depends on complete elimination of the tumour and functional rehabilitation. This can be achieved by good pre surgical and postsurgical planning. The role of the maxillofacial surgeon is not only in complete elimination of the tumour but also in providing a favourable postsurgical foundation which would enhance the prosthetic prognosis and improve patient's quality of life.

Remaining hard palate and teeth provide good bone support of the palatal area as well as the proximal alveolar bone of the tooth adjacent to the defect which is crucial for the obturator prosthesis. Palatal bone functions as a supportive structure to transfer the forces of occlusion through the denture base and the remaining teeth of the arch will aid in retention of the obturator. Therefore, preservation of as much of dentition and palatal bone possible without compromising a tumour free margin should be considered.

CASE REPORT: Fig 1 Maxillary defectA patient aged 68 years reported to the Department of Prosthodontics and Crown& Bridge, at Buddha institute of dental sciences and hospital, Patna, Bihar, India, having palatal defect on right side. He complained of difficulty in deglutition, phonation, fluid leakage into nasal cavity, inefficient mastication and hypernasal voice. He had undergone partial maxillectomy due to carcinoma .The defect created was of size 11.5mm x16.5 mm (fig 1) approx. and extra-oral examination revealed a collapsed midface and diplopia. Intra-oral examination showed resectioning of the hard palate, alveolar bone, teeth and soft tissue that did not exceed the midline. The patient had 4 vi-able maxillary teeth (left central incisor, left lateral incisor, left canine and left first premolar) and mild periodontal disease. The defect was classified according to Armany as a Class I Curved Arch.

Fig.1 intraoral view of the defect

Clinical Procedure

The defect was closed by packing gauze pieces into the defect .This were done to prevent impression material going into nasal cavity. Impression for maxillary and mandibular arches was made with alginate impression material. (Fig 2) and poured in Type III dental stone (Dentstone; Pankaj Industries, Mumbai, India).

Fig. 2. Primary impression

Fig. 3. custom-made tray

A custom-made tray was constructed from auto-polymerizing acrylic resin according to a predetermined outline on the stone model; a secondary impression was made from polyvinyl siloxane in order to develop a definitive cast on which the obturator framework would be designed.

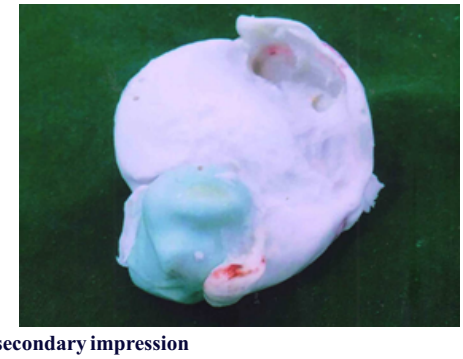

Fig.4 secondary impression

A closed, hollow-bulb obturator prosthesis was processed from heat-polymerizing acrylic resin using conventional laboratory procedures. The obturator portion of the prosthesis was smoothed to reduce the possibility of trauma to the mucosa and thus improve tolerance of the prosthesis. The patient was provided with oral hygiene instruction, and follow-up evaluations were performed at 3 and 6 months. At the 1-year recall visit, the patient reported that the obturator pros- thesis was comfortable and easy to maintain.

Fig. 5 Cameo surface of obturator

Lab procedure

Flasking of the trial obturator was done using conventional method. Packing for the mould after wax burnout was done using heat cure acrylic resin. Curing for obturator was done as done for complete denture

Fig.6 Intaglio surface of obturator

Deflasking of the obturator was done (fig 3).Obturator insertion was done after finshing and polishing of obturator (fig 4) .

Fig. 7 Intraoral view after insertion of obturator

Fig.8. Lateral view after insertion of obturator

CONCLUSION

The management of the patient with maxillectomy requires a multidisciplinary approach. The contemporary materials and techniques for obturator prosthesis can provide solution for various clinical conditions. Depending on the case, the operator should select the best suitable material and technique for successful rehabilitation and thereby improving quality of life of the patient.

Fig. 9. Front view after insertion of obturator

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