

Case Report

Fabricating a Partial denture obturator for the rehabilitation of maxillectomy patient – A Case Report.

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ABSTRACT:

Obturator prostheses are considered to be the preferred choice for the restoration of maxillary defects. Patients with palatal insufficiency, speech and deglutition becomes impaired, thereby requiring prosthodontic rehabilitation. The prosthodontic rehabilitation of patients with acquired defects of the maxilla after surgical resection is the complete responsibility of a maxillofacial prosthodontist. He has to recreate an artificial barrier between the cavities and thus restore the functional capabilities of speech, mastication and swallowing. Palatal obturator is the only substitute which covers the defect and contributes to normal speech production. It eliminates hypernasality and improves the communication.

Introduction:

There is an increasing number of people who undergo surgery for tumors of the maxilla. After maxillectomy, patients experience major dysfunction in speech, swallowing and mastication with a very negative psychological effect.¹ The Glossary of prosthodontic terms define the maxillofacial prosthodontics as “the branch

of prosthodontics concerned with the restoration and/or replacement of the stomatognathic system and associated facial structures with prostheses that may or may not be removed on a regular or elective basis”.² Surgical resection of tumors of the maxilla and paranasal sinuses results in loss of structures, including the teeth and bone. Following such resections, the support, retention, and stability of the removable partial denture (RPD) acting as an obturator depends on the remaining hard and soft tissues. Since forces are transmitted to abutment teeth, the RPD design should be made in anticipation of the movements that will occur with the prosthesis during function. The objective of the design should be to preserve the remaining structures. The larger a surgical

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resection, the greater the loss of support and, therefore, the higher the unfavorable forces acting on the remaining teeth.³⁻⁵

In partially edentulous cases with large defects, lack of support and retention causes loss of stability of the obturator prosthesis and the forces exerted on the artificial teeth on the defect side cause a cantilever effect on the abutment teeth. In each case the prosthesis should have proper design.⁶ Some authors suggest the use of multiple teeth for retention to distribute the stress in selected patients.⁷ Attention must be directed toward the surgical area to gain additional retention.⁸

Case report:

A male patient aged 22 years, who had undergone surgery for a maxillary tumour on the left side of the maxilla for the restoration of the palatal defect. The patient presented with an obvious and typical nasal twang and he was experiencing difficulty in speech and deglutition. Besides, the patient needed a denture to restore his lost teeth and an obturator which would overcome his defect and make things easier for him in terms of mastication and communication.

On examination, it was found that the left half of the patient's face was disfigured. It was clearly evident that the oral tissues, the palatal bone and the remaining residual ridge were incapable of supporting the prosthesis. Owing to such unfavourable conditions, it was necessary to plan a prosthesis that would be light and easy to wear. The weight of the prosthesis could jeopardize the health of the tissues and compromise the function of the prosthesis. After taking a thorough medical and dental history, the patient was educated and prepared psychologically to undergo the procedure of obturator making. Soon after, a primary impression was made in irreversible hydrocolloid impression material and a primary cast was retrieved out of it.



Fig: Depressed side (left) and intraoral view (right).



Fig: Occlusal rim with base (left) and trial in patient mouth(right).

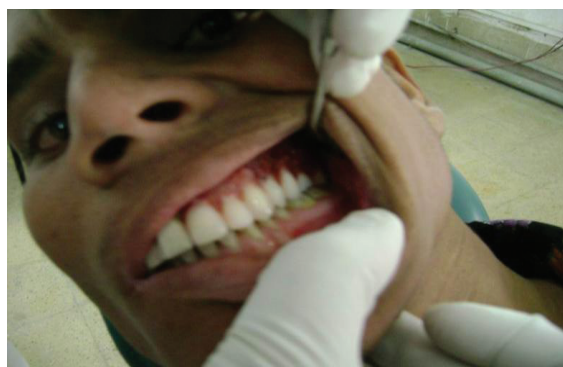


Fig: Check for the fit of the prostheses (left) and insertion of the prostheses after curing (right).

A master cast was procured out of it and the borders were outlined for the record bases. The undercuts on the sides of the defect were blocked with wax and also, the internal part of the cavity was painted with a thin layer of wax before making the acrylic record bases. A jaw relation record was made and by a conventional method. The usual tracing devices were not used in this case because of the lack of a resistant base (palate). Moreover, after surgery, a patient is not expected to give a centric relation record.

The rules of aesthetics were borne in mind during the selection and the setting of the teeth. Waxed up dentures were tried and checked for retention, stability and comfort in the mouth. Phonetics was a cause of concern and so, the denture movements were re-checked during phonation and corrections were made accordingly. After this, an occlusal bite was made in rubber base putty material, that would be used in the later stages for the occlusal orientation.

The dentures were finished, polished and were kept aside.

Discussion:

It is a common practice to construct a partial denture obturator in patients with palatal defect. The patient may be able to chew the food on the denture-obturator, but when in function, the denture moves and the food gets trapped between the denture and the defect. The defect areas always need to be relieved of pressure under the prosthesis. Permanent soft liners can be used to reduce the pressure on the defect areas, as they provide the cushioning effect between the defect margins and the prosthesis. Also, they provide flexibility to the obturator, which allows its relatively simple placement in retentive undercut regions. But, as soft liners need repetitive replacement, it is better to avoid using them for fabricating a definite maxillofacial prosthesis, thus limiting their use only till the recently created defects.⁹

Light-cured resin record bases can also be used for palatal defect

cases, thus eliminating the need for heat-processed record bases, which save clinical and laboratory time while providing the patient with a lightweight prosthesis.¹⁰ In any obturator case, it is important to know that the affected palate provides limited 'tissue support' for any prosthesis which rests on it. Efforts were taken to fabricate the prosthesis by abiding the basic rules of denture preparation.

Conclusion:

Partial denture obturator is one of the therapies which attempts to alleviate any anatomical and functional deficiencies. Thorough knowledge and skills, coupled with a better understanding of the needs of the patients enable the successful rehabilitation of such patients. Mostly, the maxillofacial patients come from the lower socioeconomic group, who need the best out of the lower expenses. The maxillofacial patient is a compromised person who requires total rehabilitation, physically as well as psychologically.

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