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CASE STUDY

FABRICATION OF AN INTERIM OBTURATOR FOR A CLASS 2 MAXILLARY DEFECT: A CASE REPORT

***Dr. Prateek Pandey, Singh, D. K., Dr. Lav Kumar and Dr. Anupam Singh**

Department of Prosthodontics, Patna Dental College and Hospital

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ABSTRACT

An interim obturator acts as a bridge between surgical and definitive phases of treatment of a maxillectomy patient. Apart from restoring the functions of speech and deglutition, it has a great psychological benefit to the patient in regaining social acceptance. The following article attempts to describe the steps followed in the fabrication of the interim prosthesis.

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INTRODUCTION

An obturator is a prosthesis used to close congenital or acquired palatal defects. Large defects which cannot be closed surgically are best treated with prosthetic obturators. Traditionally there are three distinct phases of rehabilitation of maxillectomy patients. These are surgical, interim and definitive phases (Wolfaardi, 1986). Obturators may be used on an immediate or transitional basis (Schaaf, 1976and Carl, 1976). An interim obturator is normally placed 7-10 days after surgery (Curtis, 1996; Frame, 1981; Kouyoumdjian, 1984; Wolfaardt, 1989; DaBreo, 1990 and Kaplan, 1992). An interim obturator allows for a smooth transition from the surgical to definitive obturation. During the time the interim prosthesis is in place, the surgical site heals and becomes dimensionally stable. The patient is also prepared physically and emotionally for the restorative care that may be necessary. During this time there is considerable improvement in speech, swallowing and function too. Artificial replacement of the teeth and palate aids speech, mastication, esthetics and morale (Kouyoumdjian *et al*., 1984 and DaBreo, 1990). The interim obturator can be made by a modification of the surgical obturator, or making a new prosthesis altogether.

****Corresponding author: Dr. Prateek Pandey***
Department of Prosthodontics, Patna Dental College and Hospital

Case Report

A 42 yr old male patient reported to the out-patient department of the Department of Prosthodontics, Patna dental college and Hospital; being referred from the ENT department of Patna Medical College and Hospital. On examination, the patient had a class 2 maxillary hard palate defect. The patient had undergone partial maxillectomy for a tumor of the hard palate 15 days ago. It was decided that an interim obturator would be fabricated for the patient which would serve for 3-4 months.

Procedure

Primary Impressions: A perforated dentulous stock tray was selected according to the configurations of the remaining maxilla. Modelling wax was used to modify the boundaries of the stock tray to include all the areas of the defect. The medial and anterior undercuts of the defect were blocked out with gauze lubricated with petrolatum. Tray adhesive was applied to the tray and wax. The irreversible hydrocolloid was mixed and loaded into the tray. Before placing the tray in the mouth, some amount of impression material was wiped into the posterior and lateral undercuts. The impression material was allowed to set and later retrieved from the mouth.

Fig. 1. Class 2 maxillary defect

Diagnostic cast and custom tray: The impression was poured and a diagnostic cast was obtained. The cast was used to fabricate the custom tray. The undesirable undercuts in the cast were blocked out with wax. The custom tray was fabricated with acrylic resin, providing relief to the palatal structures and the superior lateral aspect of the defect. The tray was extended 1cm onto the soft palate on the defect side. The tray was extended up the full height of the lateral wall of the defect.

Border moulding and secondary Impressions: The extensions of the tray were verified in the mouth and adequately recontoured. Green stick compound was used to perform the border moulding. The border molding was first completed on the unresected side in order to stabilize and properly orient the tray to the defect. This was followed by molding the medial palatal margin and the extension towards the soft palate. Finally, the lateral, posterior and anterior aspects of the defect were recorded. The secondary impression was taken with an elastomeric impression material (addition silicone). During impression making, the lips and cheek were manipulated and the patient was asked to perform eccentric movements of the mandible.

Fig. 2. Secondary impression with putty

Jaw relation records, teeth setting and try-in: The vertical dimension records were taken in the conventional manner, with wax rim on record base. Using the bimanual chin guidance, centric relation was recorded and teeth setting was done. During the try-in stage, the centric relation, the vertical dimension and the esthetic display were verified.

Processing, delivery and follow up: The dentures were processed in a standard manner, using heat cured methyl methacrylate. During delivery, in order to permit seating of the prosthesis, relief was provided to the resin extensions in the undercut areas and the bulb of the obturator. The superior bulb was well polished with pumice to avoid impingement and irritation to the nasal mucosa. Pressure indicating paste was used to delineate areas of tissue displacement on the unresected side.

Fig. 3. Finished prosthesis in heat cured acrylic resin

Fig. 4. Prosthesis in place

DISCUSSION

Maxillectomy often results in a high level of morbidity with significant psychological and functional implications for the patient (Lang *et al*., 1967; Piff, 1985), Such disabilities include inability to masticate and disturbances of deglutition and speech (Morton *et al*., 1990 and Freidline *et al*., 1980). The interim obturator allows the patient to slowly adapt to the new prosthesis. There is remodeling of the soft tissues adjacent to the defect and scar band reorganization. Due to this remodeling the interim obturator may require frequent readjustments. Adding teeth to the prosthesis enhances the esthetics and function. When the soft tissues around the defect have stabilized, a definitive obturator can be fabricated.

Summary and Conclusion

The patient is currently wearing the prosthesis regularly. There is considerable improvement in his speech. The hypernasality of the voice has considerably decreased. There is decrease in the regurgitation of food and liquids from the nose. The patient feels socially acceptable and has gained in self-confidence. The prosthesis is helping the patient in restoring his speech, function and esthetics. The role of interim obturator in the rehabilitation of a patient with maxillary defect is well

accepted and established and it should be used wherever required.

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