

# PROSTHETIC RESTORATION OF A NASAL DEFECT AFTER ABLATIVE SURGERY A CASE REPORT

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## ABSTRACT

Despite progress in maxillofacial cancer surgery, most patients present with disfiguration of their faces. A nasal prosthesis can reestablish aesthetic form and anatomic contours for midfacial defects often more effectively than can surgical reconstruction. It is not only noninvasive, but also cost effective and any local recurrence of growth can easily be supervised. This case illustrates prosthodontic rehabilitation of facial defect following surgical resection and radiation therapy for squamous cell carcinoma of the nasal vestibule.

**Keywords:** Nasal prosthesis, Squamous Cell Carcinoma of nasal vestibule, Maxillofacial restoration

## INTRODUCTION

When maxillofacial ablative surgery involving aesthetic areas of the face is indicated for the removal of significant quantities of tissue due to cancer, often-restorative plastic surgery is not able to recuperate the extensive area removed. Moreover, a long oncological observation period of the patient is sometimes necessary before any restorative plastic surgery can be performed. Prosthetic rehabilitation in such cases has many advantages: it requires no additional plastic surgery, it can decrease the hospital stay, and often the results are more aesthetically pleasing, cost effective and less invasive. A nasal prosthesis artificially restores all or part of the nose, which has been lost due to radical cancer surgery, traumatic amputation, and serious burns. The delicate remaining structures and mucus membranes lining the nasal passages must be kept moist and free from irritation. The prosthesis duplicates the function of nose by directing airflow to the nasopharynx. It also helps to maintain the proper humidity for sinuses and respiratory mucosa. Normal speech resonance is also restored. It also serves as a great psychological support in rehabilitation of the patient.

This case report presents prosthetic rehabilitation of midfacial defect following ablative surgery and radiotherapy for squamous cell carcinoma of nasal vestibule, which is restored with an acrylic nasal prosthesis.

## CASE REPORT

A 52 yr old female patient was referred to Department of Dental surgery, Manipal Teaching Hospital, Pokhara for reconstruction of her facial defect. She had undergone surgical resection and radiotherapy for squamous cell carcinoma of nasal vestibule. The defect was large involving nose and disfiguring (Figure 1).



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## PROSTHODONTIC MANAGEMENT

A preliminary impression of the facial defect was made with irreversible hydrocolloid impression material and was poured with dental plaster<sup>1</sup>. A special tray was fabricated on the plaster model to record the borders of the defect. Silicone impression was made and poured in dental stone. Patient's daughter's nose impression was taken with alginate to suit patient's face. Alginate impression was filled with molten wax. After it cooled down the wax pattern was removed. It was trimmed to fit the defect on the stone model. The silicone impression of the wax model was made to prepare more than one prosthesis to suit the skin color. The suitable oil paint was mixed on a ceramic slab matching with skin. The impression was filled with self-cure acrylic mixed suitable oil paint. The prosthesis was removed and tried on patients face for color matching. As colour change in acrylic resin after setting is a known phenomenon, more than one prosthesis were prepared and the one which matched patient's complexion most was selected. The prosthesis was fitted on the cast and finally on patient's face. The prosthesis was held in position on the face with spectacle frame around<sup>2</sup>. The frame and prosthesis were oriented with help of impression compound. The assembly was taken out and prosthesis was firmly fitted to spectacle frame with cold cure acrylic resin and 19 gauge S.S wire.



A thin layer of pink acrylic resin was applied to the inner side of the prosthesis to avoid untoward reaction to oil paint<sup>3</sup>. Post restoration appearance (Figure 2) was satisfactory to the patient and to her family members. However the satisfaction was relative and this was because no other substitute was available at that cost and convenience. The

patient was advised to daily wash the prosthesis with 1% chlorhexidine solution. Presently she is doing fairly well.

## DISCUSSION

While maxillofacial prosthetic treatment is not a substitute for plastic and reconstructive surgery, in certain circumstances it may be an alternative. Certain patients may simply not be good candidates for plastic surgery because of their advanced age, poor health, very large deformity, or poor blood supply to irradiated tissue<sup>4</sup>. Moreover, maxillofacial prosthetic treatment is indicated when anatomical parts are not replaceable by living tissue, when recurrence of malignancy is likely, or when radiotherapy is being administered<sup>5</sup>.

Nasal prosthesis is one of the easiest extra oral prosthesis because it can be attached to the spectacle frame. Natural skin fold further conceal the detection of prosthesis<sup>6</sup>.

Modern silicones are normally preferred because of its lightweight and life like appearance. But it has its own shortcomings. It is costly and needs special technical manpower<sup>7</sup>. It also has limited life span. Therefore the attempt has been made here to prepare a nasal prosthesis in an acrylic resin, which is affordable and readily available<sup>8</sup>.

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