

# Technical Innovation: Intra-Operative Obturator For Nasal Lining With Skin Graft

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## Abstract

### INTRODUCTION

Squamous cell carcinoma, arising in nasal mucosa, is rare and is estimated to be less than 1% of cases of head and neck cancer. Surgical treatment for aggressive intranasal squamous cell carcinoma (SCC) requires a multidisciplinary team approach to ensure optimal patient outcomes. Surgical procedures for the removal of intranasal malignancies may include rhinectomy, palatectomy, and maxillectomy. These procedures leave patients with significant facial defects. However, in rare cases surgery may preserve nasal skin. In these cases, one needs to reconstruct nasal lining and support. Complex nasal reconstruction is often staged and therefore may delay complementary oncologic therapy [1,2]. As a rule, we would initially like to keep reconstruction as simple as possible, while preserving valuable tissue from scarring and shrinkage due to radiotherapy. Lining the nose with a full-thickness skin graft may serve this purpose well [3,4]. In order to assist skin graft adherence in the immediate post operative stage as well as prevent later shrinkage, we constructed a nasal obturator.

### CASE REPORT

A 62-year-old patient, otherwise healthy, presented to our hospital with nasal bleeding of a few month duration. A tumour, arising from the nasal septum, was found, biopsied and diagnosed as SCC. Upon completion of medical workup, a metastatic lymph node in his left neck was found. The patient was scheduled for radical removal of his tumour and left comprehensive neck dissection. During surgery the tumour was resected including nasal columella, nasal vestibular lining, upper and lower lateral cartilages and most of the cartilaginous septum (Fig 1) and a neck dissection performed uneventfully. For lining, we used a full-thickness skin graft harvested from right groin and secured with rapidly absorbable sutures to the inner surface of the nasal

vestibule. To support and assure graft adherence to the recipient bed, we devised, intra-operatively, a mold-obturator using Methyl methacrylate fast setting cement that filled that entire anterior nasal cavity. A number six endotracheal tube has been inserted into the mold before it hardened to enable breathing and to help securing the intranasal obturator (Fig 2). Skin graft take was 100% (Fig 3).

The patient was discharged seven days after surgery, feeling very comfortable in his daily chores in hospital and at home with this device also taking it out and reinserting it for hygiene purposes (Fig 4). Three months after completing radiation therapy, the patient can dismiss it walking around without his obturator and breathing freely through his nose. The nose retained its projection in rapport to his face. At present the patient is waiting for further reconstructive surgery

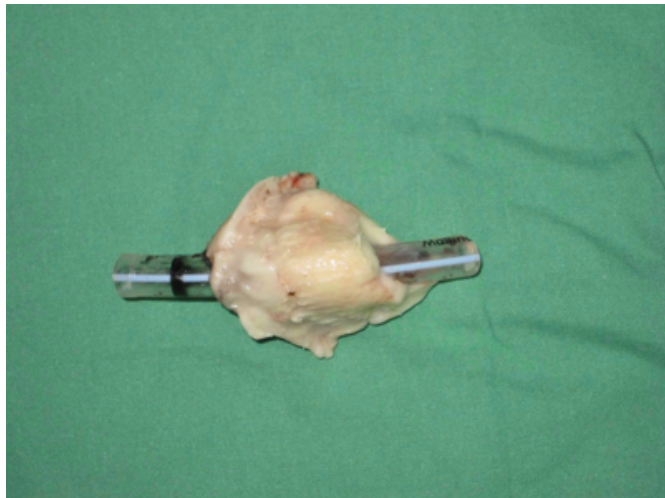
### Figure 1

Fig 1: Nasal defect after tumor resection



**Figure 2**

Fig 2: Methylmethacrylate obturator with cut endotracheal tube inserted.



**Figure 3**

Fig 3: Nasal lining with full-thickness skin graft.



**Figure 4**

Fig 4: Patient walking with obturator secured on post operative day 6



## DISCUSSION

Complex nasal reconstruction continues to be a challenge to the plastic surgeon [1]. It is often multi-staged and lengthy process [2]. In cases of malignancy, due to the need of the patient to have complementary radiation and possible chemotherapy, the reconstructive surgeon does not always have the luxury of healing time of the operated area. In these cases, one must provide “first aid” for the patient while trying to preserve and protect the patient's remaining tissues from further damage for future reconstruction. Skin graft is low in the reconstructive ladder because it is simple, easy to perform and the potential for complications that will delay oncologic treatment is little. We present a simple innovation that may help the skin graft take and reduce nasal tissue shrinkage while the patient is having radiation therapy and before definite reconstruction is undertaken. We found that patient tolerance was excellent.

## References

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