

# Metachronous Cancer of the Nasal Cavity after Totally Cured Larynx Squamous Cell Carcinoma

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## Abstract

Head-and-neck region tumors are mostly seen on the larynx. The risk factors of this region may increase the secondary tumors. Nasal squamous cell carcinoma (SCC) can be detected after larynx SCCs, a second primary tumor. Second primary tumors are difficult to manage. Total rhinectomy is the choice of treatment modality, but rehabilitation is necessary. We present a secondary nasal SCC treated with total rhinectomy. A 67-year-old patient, who was treated for larynx SCC by total laryngectomy 3 years ago, was admitted to the outpatient clinic with a complaint of nasal swelling and pain. The patient was diagnosed as nasal SCC. Total rhinectomy was performed, and silicon nasal prosthesis was applied after 3 months of surgery. Total rhinectomy can be rehabilitated via silicon nasal prosthesis. This was cost-effective, safe, less time-consuming, and functional. Using prosthesis has given us better chance to detect recurrences. We encourage surgeons to use prosthesis for rehabilitation.

**Keywords:** Metachronous tumors, nasal squamous cell carcinoma, rhinectomy, silicon nasal prosthesis

## INTRODUCTION

The presence of second primary cancers is a challenging situation for cancer treatment. It is known that after new innovations in radiological screening instruments, the second primary cancer rate is approximately 5%.<sup>[1]</sup> Predisposing factors such as tobacco usage and alcohol consumption are related to both primary and secondary cancers, especially in the head-and-neck region. It has been known that larynx cancers are the most common cancer in the head-and-neck region.<sup>[1]</sup> Advances in cancer treatment might supply the long-term survival rates, but still we have not known the results. There are many factors affecting the survival rates such as second primary tumors. Warren and Gates specify the secondary primary tumors as the histologically identifiable tumor, topographically distinct and separate from the primary tumor, and ruling out from the metastasis of the primary tumor.<sup>[2]</sup> Classification is specified depending on the time of the diagnosis of the secondary tumor. Synchronous tumors are diagnosed either at the same time or within a 6-month period from the primary tumor. Metachronous tumors are diagnosed at least 6 months after primary diagnosis.<sup>[2]</sup>

## CASE REPORT

A 67-year-old male patient was diagnosed with larynx squamous cell carcinoma (SCC) and treated with total laryngectomy before 3 years. The disease was in remission, but on follow-up, the patient complained with nasal tenderness over the nasal vestibule and purulent nasal drainage. He was treated by antibiotic therapy, but the tenderness was not healed and contrastingly the clinical status worsened, so he was referred to our clinic. Physical examination revealed an ulcerovegetan mass lesion on the vestibule of the nose which was extended posteriorly and obliterated the nasal cavity bilaterally [Figure 1a and b]. There was no sign of neck metastasis. Magnetic resonance investigation revealed lobulated, contrast-enhanced, 24 mm × 18 mm-diameter mass lesion on the anterior side of the nasal vestibule and confirmed the absence of neck metastasis [Figure 2]. After completing the imaging investigation, biopsy from the mass was taken and the tumor was diagnosed as SCC of the nasal vestibule. Total rhinectomy was planned to perform under

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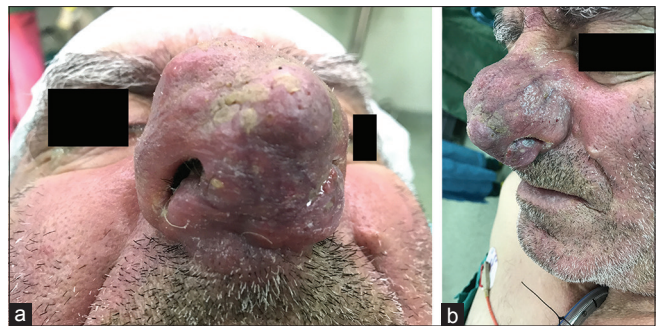
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general anesthesia. After marking the surgical site completely, incisional lines of bilateral lateral rhinotomy were marked and infiltration anesthesia was performed. The incision was started from the lateral edge of the nostrils with 1.5-cm clear margins and then carried through the dorsum of the nose and joined with inferior skin incision. The dissection was started from the lateral edge and lateral cartilages were separated from the bony structures. Then, the base of the columella was incised and caudal septum was visualized. Osteotomies were performed on both sides. The tumor was excised with clear margins. Frozen section was sent to pathology (the nasal SCC stage is T4N0M0, previous larynx SCC stage is T3N0M0) to determine the clear surgical margins. Mucosal bleeding was controlled by electrocautery. The skin defect and mucosa were sutured primarily. Epithesis was implanted to frontonasal process bilaterally and the remaining nasal bone on the midline. Two months after rhinotomy, nasal silicon prosthesis was applied for reconstruction [Figure 3a and b]. On follow-up, there is no recurrence or any complaint.

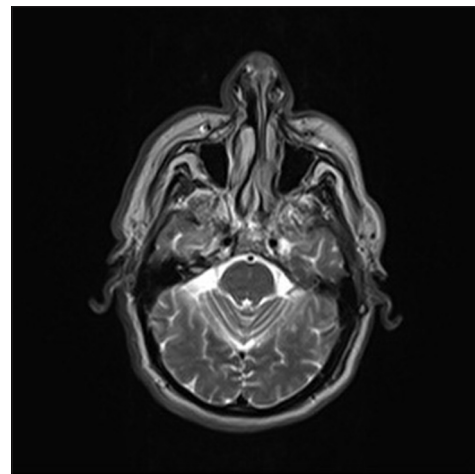
## DISCUSSION

Larynx cancers are the most common cancer in the head-and-neck region. Most of the tumors are SCC.<sup>[3]</sup> The treatment modalities depend on the stage and medical status of the patient and mainly are surgery, radiotherapy, chemotherapy, or combination of them. Advanced larynx cancers can be treated via total laryngectomy, same as our case. Malignancies of the nasal cavity and paranasal sinuses encompass only 3% of the head-and-neck region and 50% of the cases are SCC.<sup>[4-6]</sup> Second primary nasal cavity SCC is extremely rare as it is known. The behavior of the cancer in this region is local aggressiveness and tendency to rapid spread. Disease control is supplied via local wide excision. Overall, 10%–14% of the larynx cancers are expected to develop second primary neoplasm and 10% of the cancers are synchronous.<sup>[7]</sup> Boysen and Loven reported the yearly incidence of the second primary cancer as 2.1% after larynx cancer.<sup>[8]</sup> Another study that investigated 514 patients concluded the second primary cancer rate as 8.17%, of which 1.55% are synchronous and 6.61% are metachronous.<sup>[9]</sup> The most common second primary cancer is lung cancer followed by esophagus and urinary bladder cancers, but nasal cavity cancers are extremely rare.<sup>[10]</sup> It is obvious that second primary cancers are difficult to manage even when diagnosed at a very early stage.<sup>[9]</sup>

Previously reported most common symptoms were epistaxis and nasal swelling. In our case, the patient had both tenderness and swelling. The diagnosis can be done by biopsy, but the average time for diagnosis was 5.7 months.<sup>[11]</sup> The time is related with nonspecific symptoms of the tumor. In our case, the patient was treated with antibiotics due to a suspicion of infection, but even after treatment, the symptoms were not recovered. The treatment method is complete excision of the tumor by total rhinectomy, but posttotal rhinectomy is an important aspect of the treatment. There are two options to supply the appearance: one is the otologous flap reconstruction and the other is the application of the nasal prosthesis.<sup>[12,13]</sup>



**Figure 1:** (a) Preoperative frontal view of the ulserovegetan mass lesion of the nose. (b) Preoperative lateral view of the ulserovegetan mass lesion of the nose



**Figure 2:** Magnetic resonance image of the nasal squamous cell carcinoma



**Figure 3:** (a) Frontal view of the total rhinectomy defect and silicon prosthesis application. (b) Lateral view of the total rhinectomy defect and application of the silicon nasal prosthesis

Osseointegrated abutment can be placed during rhinectomy and after 3 months, the silicon prosthesis can be applied by this way. In our case, the treatment modality is total rhinectomy to supply the disease-free margins. During the operation, we applied the abutments for implantation of the silicon prosthesis.

Surgical repair of the total rhinectomy is a complex reconstruction involving three-layer repair. More than three surgeries might be necessary which might result with lots of complications and ignorance of the disease recurrence.<sup>[12,13]</sup> A previous study performed on 51 patients showed that limited resection of the SCC resulted with recurrence of the tumor.<sup>[14]</sup> If there is a surgical correction of the defect after total rhinectomy, the recurrence of the tumor might be missed. Most of the recurrences are detected

within 1 year. Nasal ala, medial canthus, and columella are the most common sites of recurrence.<sup>[15]</sup> Local and forehead flaps might prevent the diagnosis of recurrence. We believed that reconstruction of rhinectomy is a dangerous way to detect recurrences. Recurrences under the flaps might be ignored and at the end, if there is a recurrence, both flaps and recurrence excision cause huge defects. Benech *et al.* reported an 80-year-old previously laryngectomized patient who was diagnosed with nasal SCC. He was treated via forehead flap multistep surgery after total rhinectomy, but on follow-up, SCC recurred and wide local excision involving the flap was performed. Then, they used a silicon prosthesis as reconstruction.<sup>[16]</sup>

After total rhinectomy, patients deal with negative self-esteem and social isolation.<sup>[8]</sup> The advantageous part of the nasal prosthesis is the inspection of the former tumor region and taking biopsy easily.<sup>[17,18]</sup> Low-cost early rehabilitation and short operation time are the other beneficial components of the prosthesis. Psychological problems due to total rhinectomy are shown in previous reports.<sup>[18,19]</sup> Hence, all patients should be evaluated during the surgical process and follow-up. Our patient also was consulted before surgery. He was mildly depressed due to foul smelling of the tumor in the nose. This smell also disturbs the other patients, so we must isolate the patient in a single room. After surgery, the patient was happy due to improvement of the smell, but the appearance of the face disturbed him this time. He was deeply depressed after surgery due to appearance, but when we applied the prosthesis, he was feeling good again. Early prosthetic application might be important for controlling cancer and clinicians might easily check patient for recurrence of the disease.

Becker *et al.* investigated 43 total rhinectomy patients who were rehabilitated via nasal prosthesis. They have concluded that overall functional appearance and fit of the nasal prosthesis were acceptable for users.<sup>[11]</sup> The results of the nasal appearance were the same as that of nasal surgical reconstruction after total rhinectomy.<sup>[20,21]</sup> If the prosthesis is a bone-anchored or implant-retained facial prosthesis, the stability of the prosthesis is acceptable and does not disturb daily activities such as housekeeping and sports.<sup>[8]</sup> The cleaning problem is not mentioned from any users, but renewal of the prosthesis is necessary about every 2 years.<sup>[11]</sup> In addition, Becker *et al.* emphasized the change of the professional career of the total rhinectomy patients as difficult work situation or early retirement.<sup>[11]</sup>

## CONCLUSION

Larynx SCC with metachronous secondary primary nasal SCC is an extremely rare status, and few reports have been seen in literature. To our knowledge, both total laryngectomy and rhinectomy and rehabilitation with nasal silicon prosthesis on the same patient is presented in this case report firstly in the literature. We have emphasized that early rehabilitation with nasal prosthesis is a good way of psychological wellness and disease follow-up.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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