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Nasal and Upper Lip Reconstruction of a Case of Squamous Cell Carcinoma Nose Stage IV—A Case Report

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Abstract

We report a case of 77 years old male patient who presented to our hospital with bleeding from a fungating mass of the nose. Investigations revealed the lesion to be moderately differentiated basaloid type squamous cell carcinoma, with lung, liver and spleen metastasis. Oncologists started palliative chemotherapy for the patient. Excision of the tumour required removal of most of the nose including the lateral nasal cartilages and the nasal septum. Nasal reconstruction was done by using left nasolabial flap after deepithelialising 3 parts of it and covering that flap with a forehead flap. Residual tumour of the upper lip required further excision later on and coverage with a fan flap. The patient survived about 6 months after the surgery in a good appearance and was accepted and approached well by his family. We think that this type of reconstruction is suitable for late stages cancer nose considering the life expectancy of this category of patients.

Keywords

Nasal Reconstruction, Nasolabial Flap, Forehead Flap, Fan Flap

1. Introduction

The site of the nose, being at the center of the face, makes any lesion in it well evident and noticeable. It is rare to get patients presenting to the clinic for the first time with a large fungating mass with bleeding. The bad smell of the cancer, the disfigurement, the haemorrhage from the tumour and the community avoidance are all factors that can push the patient to seek medical advice. The patient presented in this case was found to have stage IV squamous cell carcinoma with metastasis to internal organs. Considering the life expectancy of the patient, the

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classical ways of nasal reconstruction incorporating cartilage grafts or other steps with possible additional complications were not preferred to be done. Nasal reconstruction was done in a way that could afford good shape of the nose and acceptance by the community.

2. Case Report

A 77 years old thin underweight gentleman presented to Mafraq Hospital Accident and Emergency Department for the first time with bleeding from a big fungating mass of his nose. According to the patient and his family, the lesion started as a small boil of one year duration and was progressively increasing in size. There was a history of recurrent attacks of bleeding from the mass. There was a history of productive cough. There was no history of treatment from debilitating diseases and no history of previous operations.

The general examination of the patient showed that his height is 148 cm and the weight is 37.5 Kg with a body mass index of 17.1 Kg/m^2.

The local examination showed a bad odour fungating mass of a size 5.5 × 5 × 3.5 cm occupying the tip of the nose, dorsum, columella and lateral nasal cartilages. The mass had raised everted edges with irregular surface and mild bleeding from it. There was no epistaxis. No lymph nodes were palpable in the neck (**Figure 1**).

X-ray chest done showed a superior mediastinal mass with haziness in the left upper zone.

This was confirmed by the CT scan which showed large malignant mass lesion in left lung, consistent causing left upper lobe collapse with infiltration of left pulmonary artery and aorta. There were mediastinal nodal metastasis and multiple hepatic and splenic metastasis (**Figure 2(a)** and **Figure 2(b)**).

Facial CT scan showed enhancing ulcerated soft tissue density mass lesion arising from the nose and anterior nares. The mass was found infiltrating the anterior portion of the cartilaginous nasal septum. There was no evidence of infiltration of the nasal bones or the paranasal sinuses with no intracranial extension of the mass (**Figure 2(c)** and **Figure 2(d)**).

Liver image guided core biopsy was done and showed metastatic sinonasal squamous cell carcinoma, basaloid type.

Figure 1. (a) (b) Two views of the fungating mass; (c) Size of the mass after excision; (d) Residual defect.

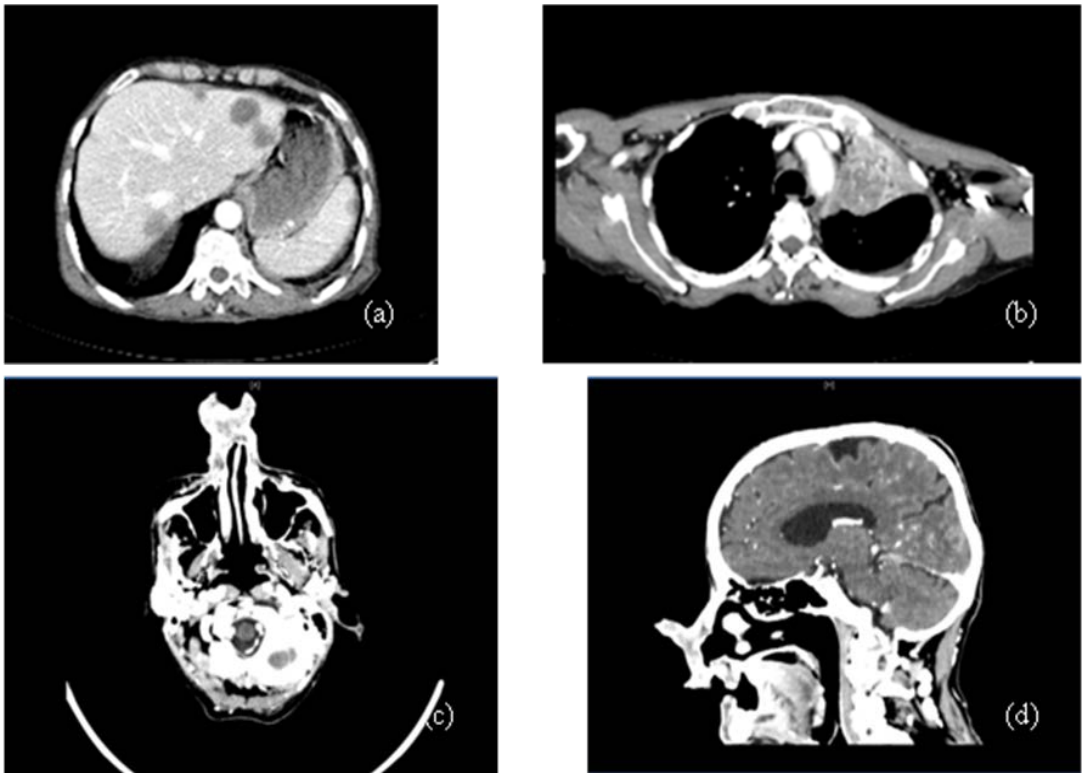

Figure 2. (a) CT scan abdomen showing liver and spleen metastasis; (b) CT scan chest showing left lung mass with mediatstinal metastasis; (c) & (d) Horizontal and sagital sections CT scan facial bones showing the tumour.

The lesion was excised under general anaethesia with 1 cm safety margin and sent for histopathological examination which was reported as moderately differentiated sinonasal squamous cell carcinoma, basaloid type. There was involvement of the anterior and lateral margins with the tumour cells.

The case was discussed in the tumour board meeting and the plan of management was discussed with the patient and the relatives. Palliative chemotherapy in the form of 5-fluorouracil and carboplatin were started by the oncology doctors.

Operative Procedures

Further wide local excision was done under general anaesthesia and free margins were confirmed by frozen section examination. This resulted in amputation of most of the nose with loss of most of the alae on both sides, loss of most of the septum and loss of the upper and lower nasal cartilages. The nasal bone was exposed with no overlying skin. The nose of the patient was reconstructed by using a left nasolabial flap and forehead flap based on the right supratrochlear artery.

A nasolabial flap was raised from the left cheek 5 cm in length and inverted upside down to make the nasal lining. Deepithelisation of the flap at the site of suturing to the septum and both alae was done. The flap was sutured to each of these structures using 4/0 rapid Vicryl sutures. The donor area of the flap was closed in two layers. There became a resulting raw area formed of the nasal bone proximally, the under surface of the nasolabial flap and the caudal part of the exposed cartilage of the nasal septum (**Figure 3**). This raw area was covered with a forehead flap based on the right supratrochlear artery after designing it in the shape of the nose. The donor site of the forehead flap was directly closed. A small area at the middle was covered with a split thickness skin graft harvested from the medial aspect of the left arm. The rest of the skin graft was used to cover the proximal part of the nasolabial flap and the undersurface of the proximal part of the forehead flap (**Figure 4**).

The patient was kept on medications and dressings postoperatively. Both the flaps were found well viable and the grafts settled well. He was discharged from the hospital 2 weeks postoperatively. The patient was not reviewing the Plastic Surgery Clinic regularly. The follow up revealed a recurrent tumour starting to grow about 2

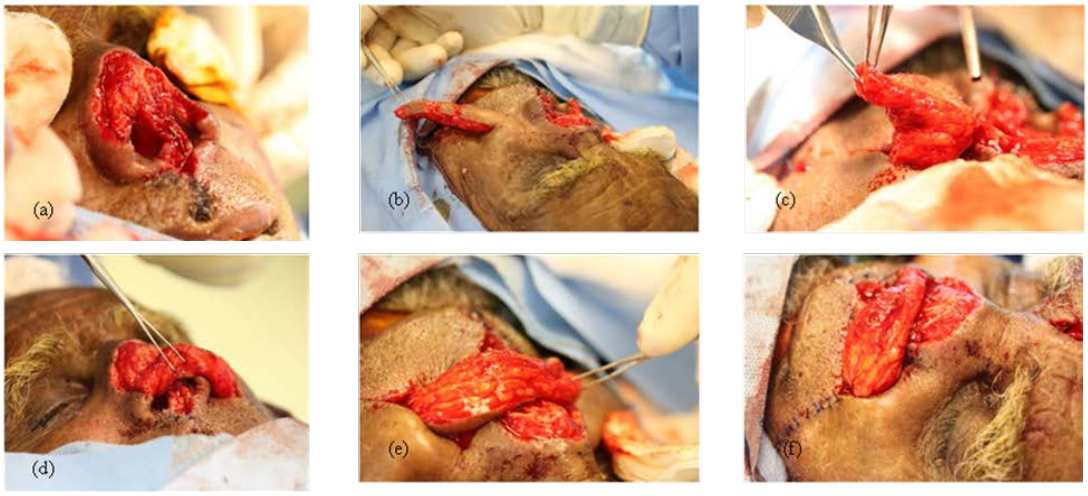

Figure 3. (a) The area to be constructed; (b) Left nasolabial flap elevated and deepithelialised at 3 areas; (c) The most medial deepithelialised area is sutured to the left ala; (d) The other two deepithelialised areas are sutured to the nasal septum and the right ala successively; (e) Starting closing the donor site of the flap in layers; (f) The nasolabial flap is viable and ready to be covered by the forehead flap.

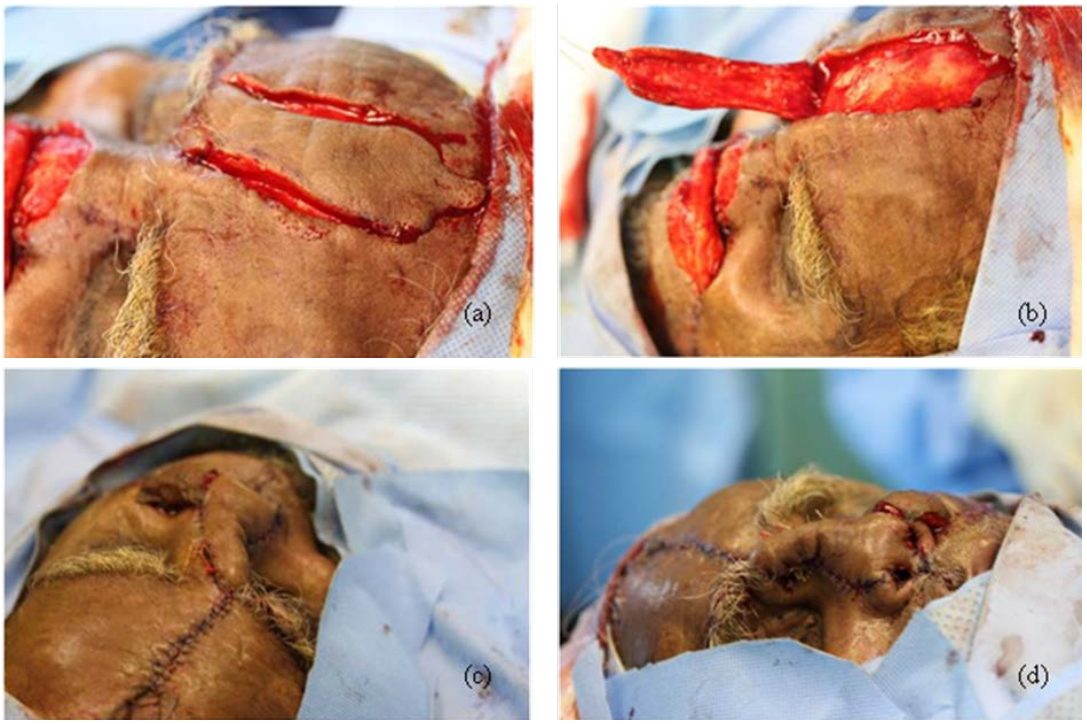

Figure 4. (a) The incisions for forehead flap; (b) The forehead flap raised; (c) The forehead flap inset; (d) At the end of surgery.

months postoperatively at the upper lip which was widely excised under general anaesthesia and sent for frozen section examination (**Figure 5**). The defect of the upper lip was covered with a fan flap with incorporation of Z-plasty flap. Division of the left nasolabial flap and the forehead flap was done at the same time (**Figure 6** and **Figure 7**). The postoperative period was uneventful except that the patient was somewhat upset as he had to wait for his beard to grow back which is part of his tradition. The patient was discharged from the hospital 8 days postoperatively. He was on regular follow up in the Plastic Surgery and Oncology Clinic. He survived about 6 months postoperatively in a good acceptable shape without bad odour or disfigurement (**Figure 8**).

Figure 5. (a) Early post operative frontal view; (b) Early post operative nasal view; (c) Two months later with recurrence of the tumour at the upper lip; (d) Donor site of the forehead flap healed. Recurrence seen at the upper lip.

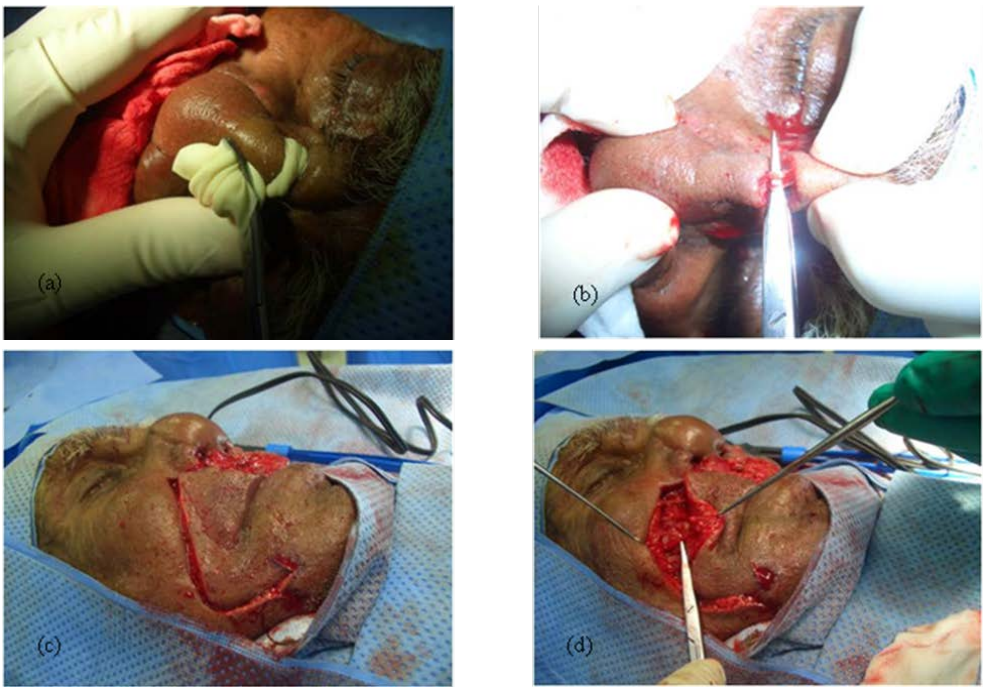

Figure 6. (a) Tourniquet applied at the pedicle of the forehead flap to confirm viability before division; (b) The Supratrochlear artery identified and cauterized. Pedicles for both flaps divided; (c) The tumour of the upper lip excised with safety margin. Incisions made for the fan flap; (d) Identification of the feeding vessels and branches of the facial nerve.

Figure 7. (a) Repair of the mucosa of the upper lip; (b) Flap mobilisation; (c) Suturing of the flap. The tubercle of the upper lip is also reconstructed; (d) Early postoperative result.

Figure 8. (a) Late postoperative frontal view; (b) Lateral view; (c) Nasal view; (d) Final shape.

3. Discussion

The history of nasal surgery goes back to many centuries BC. Edwin Smith in 1862 discovered an Ancient Egyptian papyrus which is considered as the oldest known surgical treatise dated to the old kingdom from 3000 to 2500 BC. It included among its subjects surgery of the nose [1].

In ancient India, Sushrata used the forehead flap for nasal reconstruction about 700 BC as amputation of the nose was a way of punishment at that time [2].

Till now the forehead flap is considered as the best option for nasal reconstruction due to its superb colour and texture match, vascularity and ability to resurface all or part of the nose [3]. The forehead flap is an axial flap based on the supratrochlear artery. The supratrochlear artery is found to consistently exit the superior medial orbit approximately 1.7 to 2.2 cm lateral to the midline, and continues its course vertically in a paramedian position approximately 2.0 cm lateral to the midline [4] [5].

The forehead flap surgery is usually done on two stages of flap inset and later on flap division. Some surgeons prefer to get it done on three stages by adding a stage of flap thinning in between which was not necessary in our case [6].

Ibrahimi *et al*. managed to construct the nose in a single stage using this flap by islandising it and passing it under a skin tunnel at the medial side of the eyebrow. In this way he avoided division of the flap in a second stage but using this technique the flap could only reach till above the tip of the nose [7]. This was not suitable for our case which required also columellar reconstruction.

Many procedures for nasal lining are described. The use of local nasal mucosal flaps was not possible due to loss of most of the nose.

Winslow *et al*. used free radial forearm fascial flap for the nasal lining and split calvarial bone and auricular cartilage to make frame for the nose [8]. Nasal frame reconstruction by using costal grafting, the use of 3-dimentional laser surface scanning and the use of titanium mesh or other alloplastic materials are all prescribed techniques [9]-[11].

In our case considering the general condition of the patient, the systemic metastasis and the short life span expectancy of the patient we felt that these sophisticated procedures may not be the best option for him and he can benefit, for the remaining months of his life, from a simpler technique with less morbidity. That is why we chose the nasolabial flap as a lining after deepithelialising 3 parts of it. The nasolabial flap was used before for nasal reconstruction either for coverage [12] or as a lining [13]. We found the flap to be well reliable and vascular. The flap was able to give coverage to both nostrils. The bulky subcutaneous fat of the flap gave the shape of the dome of the nose.

Fan flap described by Gillies is a useful technique for upper lip reconstruction [14]. In our case the flap was able to cover the defect resulted from excision of the tumour and it was well viable with acceptable appearance of the lip.

4. Summary

For advanced stages cancer nose, the use of complicated procedures of nasal reconstruction as cartilage or bone grafts may not be required. Providing an acceptable shape to the patient to face his community for the remaining period of his life using simpler techniques can be a good and satisfactory solution.

Conflict of Interest

The authors declare that they have no conflict of interest.

Ethical Approval

All procedures performed in this study involving human participant were in accordance with the international ethical standards.

Informed Consent

Additional informed consent was obtained from the participant for whom identifying information is included in this article.

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