

Journal of Surgery and Insights



Case Report

Ndiaye L, et al. J Surg Insights: JSI-100010

Surgical Reconstruction of the Nose in Sub Saharian Country: A Propos of 27 Cases

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Citation: Ndiaye L, Ndiaye A, Toure S, Foba ML, Sankale AA (2020) Surgical Reconstruction of the Nose in Sub Saharian Country: A Propos of 27 Cases. J Surg Insights: JSI-100010

Received date: 07 February, 2020; **Accepted date:** 14 February, 2020; **Published date:** 21 February, 2020

Abstract

Background: Nose reconstruction is a very challenging procedure in our context and there are still rising in our department. Nose defect leads to an aesthetic concern. Patients are mostly young women victims of injuries. The aim of this study was to report our experience in reconstruction of nose defect.

Patients and Methods: We carry out a retrospective study from January 2002 to December 2019. Thirty patients with nose following different aetiologies were included. Patients with cleft lip were excluded. Parameters studied were epidemiologic, clinic and therapeutic.

Results: There were 13 men and 14 females. Mean age was 27 years [7 months - 57 years]. Aetiologies were dominated by human bite in 7 cases, noma sequelae 6 cases, burn in 4 cases, road traffic injuries 4 cases, benign tumor 3 cases and malignant tumor 3 cases.

The loss of substance involved the alar in 15 cases, the columella in 4 cases, both alar and columella in two cases, the dorsum in 4 cases and the alar and dorsum in 2 cases. Fourteen patients have been operated of which 6 alar reconstructions by nasolabial flap and composite auricular helix graft, 2 columella reconstructions by local flap, 2 cases of nasal remodeling after neurofibroma removal, 2 dorsum reconstruction by local flap, one forehead flap for columella and alar reconstruction and one full thickness skin graft.

Complications occurred in 4 cases. We had one case of composite graft loss, partial forehead flap necrosis and 2 hypertrophic scars. After 5 months' mean follow up, results were assessed as excellent in 4 cases, good in 7 cases and fair in 3 cases.

Conclusion: Reconstruction of the nose is challenging in young women people who may have disfiguring scars such as keloids or hypertrophic scar. The chosen procedure should be simple and lead to the lowest sequelae.

Keywords: Nose defect; Reconstruction; Sub-Saharan people; Surgery

Introduction

The nose is the most prominent organ of the face and every little anomaly may cause an important concern. The aetiology of nasal defect depends on population area. Reconstruction of nasal defect represents a difficult challenge in consideration of his situation, anatomy and function. In Caucasian people cancer

removal is the main whereas in our daily practice, injuries are most seen. The purpose of reconstructing a loss of substance from the face, in this case the nose, is to allow the restoration as natural as possible by replacing each fabric with its best equivalent [1].

There are numerous procedures of nose reconstruction and the best technique should take account to the aesthetic unit as described by Burget [2]. Nose reconstruction is very challenging in our context because it is not often. Through this study we, we report our experience in nose reconstruction in sub-Saharan country.

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Patients and Methods

We carry out a retrospective study from January 2002 to December 2019. During this period 27 patients who needed nose reconstruction were included. Patients who undergone cleft lip and patient who did not need reconstruction were excluded. Data recording was made with medical files as well as pre and post-operative photographs. All procedures were performed under general anesthesia.

Results

There was 13 men and 14 females. Mean age was 27 [7month -57 yrs]. Aetiologies was dominated by human bite in 7 cases, noma sequela 6 cases, burn in 4 cases, road traffic injuries 4 cases, benign tumor 3 cases and malign tumor 3 cases. The loss of substance involved the alar in 15 cases, the columella in 4 cases, both alar and columella in two cases, the dorsum in 4 cases and the alar and dorsum in 2 cases.

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Discussion

Nasal loss of substance requires aesthetic and functional reconstruction to allow better social well-being. The chosen technique should let the lowest sequela to avoid post-operative concerns. The aetiologies of the nasal defect are numerous and depend to the geographic area. In our study, injuries such as human bite, road traffic injuries and burns were most seen. However, in western countries tumor removal are more often [3]. As same as in our study, [4] recommends to perform all procedures under general anesthesia because it permits the intraoperative evaluation of vascularity and three-dimensional contour without vasoconstriction or fluid distortion. Nose reconstruction is based on three principles: make a precise diagnosis of the loss of substance, replace each tissue with its best equivalent, respect the aesthetic units [1].

In our study, the transfixing loss of substance involved mainly the alar wing and the columella. Reconstruction of these units are one of the most difficult procedures in facial plastic surgery [5]. For the alar reconstruction we did use two kind of procedures: the superiorly based nasolabial flap, describe by Burget and composite graft from the auricular helix root. The superiorly based nasolabial flap is a safe and good technique for the reconstruction of transfixing loss of substance and allows to obtain an excellent postoperative result, both on the aesthetically and functionally [6]. However, there are some inconvenient such as extra scar, and additional procedures for flap weaning or for degreasing the flap [7].

The composite auricular helix graft can also be use in defect less than a centimeter. In the literature [8-10], losses of nasal substance less than 1 cm wide, the composite chondro-cutaneous graft, taken at the root of the auricular helix constitutes the reference technique described. The composite graft failure we noted was probably due to an insufficiency of scar tissue excision. Care should be therefore taken to excise the cicatricial tissue of the bank of the defect to allow graft take. There is no additional scar on the nose and the face. The end result is then higher than that obtained by the best reconstructions by flap, due to the finesse, the precision of the nasal contour and of the lighting of the delicate modeling of the two "domes" under an ideal skin [1]. For the one case of columella reconstruction, we did perform a local flap introduced by Elbaz [11]. It's a simple procedure which is suitable for people with large nostril as we can see it in black people. The forehead flap we did realize was due to the fact that previous failed reconstruction had compromised the use of local flap and the nose defect was both on the alar and the columella. Coloration, texture, thickness, suppleness makes frontal integuments a privileged donor area for nasal reconstruction, as soon as extent of substance loss exceeds possibilities of flaps local. Proximity to the forehead and the quality of its axial vascular supply vertical allow the paramedian frontal flap to be used in all situations, from reconstruction of the nose wing to total nasal reconstruction [1].

Numerous techniques are available for nasal reconstruction. Reconstruction in cicatricial tissue are very difficult due to contracture of surrounding tissue. The best result we obtained was in immediate reconstruction in tumor removal (**Figure 1-5**).



Figure 1: Reconstruction of alar defect following bite.

Figure 1A: Acute wound after bite.

Figure 1B: Alar defect after healing.

Figure 1C: 6 months follow after reconstruction by naso-labial flap described by BURGET.



Figure 2: Burn alar contracture.

Figure 2A and 2B: Alar post burn contracture.

Figure 2C: Alar reconstruction by composite auricular helix graft.



Figure 3: Dermoïd cyst of the dorsum.

Figure 3A: benign tumor of the dorsum.

Figure 3B: Immediate result after reconstruction by Rieger flap.

Figure 3C: Result after 3 years follow up.

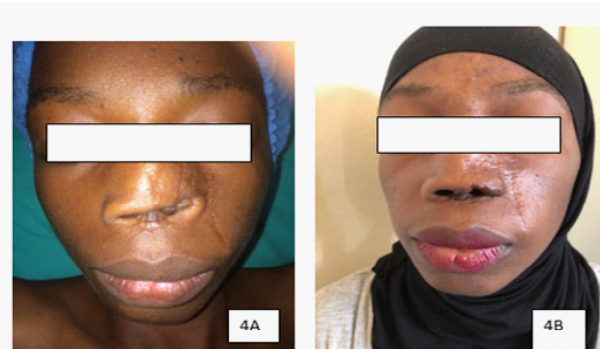


Figure 4: Alar and columela defect reconstructed by forehead flap.

Figure 4A: Alar and columela defect.

Figure 4B: 1yr follow up after forehead flap.



Figure 5: Plexiform neurofibroma of the nose.

Figure 5A: Neurofibroma of the alar and the dorsum.

Figure 5B: Immediate result tumor removal and nose remodeling.

Conclusion

Nose reconstruction in sub Saharan and developing country is very challenging. Aetiologia are mostly due to injuries and young people are mainly affected. The chosen technique should provide best social well-being and the lowest morbidity.

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