RECONSTRUCTIVE RHINOPLASTY

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Summary

Twelve cases of injury nose, treated in the Plastic Surgery Section at University Hospital, Varanasi, are presented. Traumatic etiology was seen in eight cases (66.66%), and one each was due to electric burn, rat bite, human bite and post surgical. One case of lower half avulsion was seen without loss of tissue. Others having loss of tissue of different component of nose, were treated by flaps and skin grafts. Primary closure was done in the one presenting without loss of tissue. The evaluation of results have been discussed.

Introduction

The restoration of a lost nose is not a very simple procedure, if the result to be achieved is such as to make a nose indistinguishable from its original, so that the patient can mingle without his deformity being observed in society. Experience has guided both the conclusions and the methods adopted by us in this series of cases. When a nose is made from the forehead skin, it is known as the "Indian Method of Rhinoplasty" and this gives the best results as the colour match is excellent. When it is made from an arm flap, it is known as the "Italian Method", after the famous surgeon of Bologna, Dr. Gaspare Tagliacozzi. It is a cumbersome method and is second best to the forehead.

Various other flaps are available for rhinoplasty and sometimes temporarily skin grafts are also indicated, every procedure having its advantages and disadvantages. In general, during rhinoplasty, the surgeon is concerned about the size, good colour match, shape, scarring, lining, cover and support etc.

Observations

A total of 12 cases were seen over a duration of nine years. Maximum number of cases (66.66%) were seen of traumatic etiology, while one case each was seen as a result of electric burn, rat bite. human bite, and post—surgical (Table 1).

Table 1

Cause of injury

Cause	No. of cases
Traumatic	8
Electric	1
Rat bite	1
Human bite	1
Post surgical (after excision of tumor)	1
Total	12

Table II

Presentation

With loss of tissue	11
Without loss of tissue	1
Total	12

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Type of defect revealed that three cases had only skin loss, while the rest had full thickness defect including one without loss of tissue. Out of 3 cases of skin loss only one case had electric burn ulcer at the root of nose in a child, one case with rat bite of the dorsum and tip of the nose, and the third one had trumatic loss while playing on a vegetable cart.

Full thickness loss were mainly due to trauma, in road side accidents (6 cases), two cases were of homicidal nature (including one human bite), and one case had defect of nose following wide excision of the squamous cell carcinoma. The different sites involved have been elaborated in Table III.

Table III

Type of defect

	No. of cases
Dorsum and tip of nose	3 (2*)
Subtotal loss	1
Partial alar loss	1
Root of nose	1*
Transverse cut with avulsion lower half of nose	1
Tip of nose and ala	1
Tip, ala and columella	3
Lower half of nose	1
Total	12

* Only skin loss

Operative procedures done included primary closure, tkin grafting, and repair by skin flaps (Table IV).

Primary closure was done in one case of transverse cut, without loss of tissue. The closure was done in two layers.

Temporary skin grafting was done in 3 cases of skin loss only and all three were below 5 years of age.

Table IV

Reconstructive procedures

Forehead flap	No. of cases
Midline	2
Off midline	2
Off midline plus nasolabial	1
Nasolabial flap	2 (1 bilateral)
Arm tube pedicle flap	1
Skin grafting	3
Primary closure	1
Tatal	12

Repair using different flaps were done in remaining eight cases. Midline forehead flap was used in 2 cases. Off midline forehead flap was used in 2 cases, one case of columella loss also was repaired with off midline forehead flap and a nasolabial flap. Unilateral nasolabial flap was used for repair of partial loss of ala in one case, and bilateral nasolabial flap was used to reconstruct a bigger defect involving the ala and the columella.

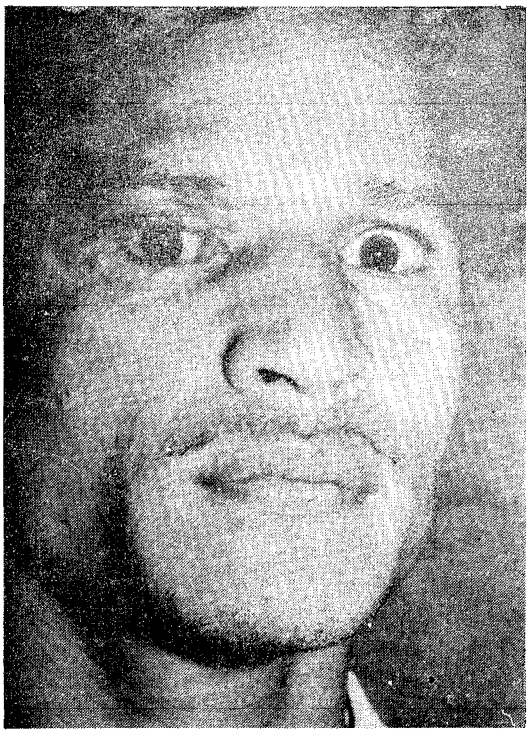
Arm tube pedicle flap was used in a lady with human bite, who refused for the local flaps of the face. Although the colour match was inferior than the forehead flap, but it was satisfactory as seen 2 years after repair

Discussion

The nose occupies the most prominent position of the face, a position that makes it vulnerable to distortion by trauma and the most frequent feature involved with skin cancer. The degree of loss and deformity will usually dictate the type and quantity of tissue required for correction. Techniques for utilization of a variety of tissues have been described for nasal reconstruction (Blair & Byars, 1946; Brown and McDowell, 1965, Converse, 1977).

Fig. 1. Front view face showing loss of tip and part of columella following road side accident.

Fig. 2. Right literal view (pre-operative).



Flg. 3. Front view six monthsafter reconstruction.

Fig. 4. Leftlateral view six months after reconstruction.

Fig. 5. Front view showing loss of lower partof nose (Human bite)

Fig. 6. Right lateral view (Pre-operative)

Fig. 7. Front view two yearsafter recons truction(Using arm tube pedicle flap).

Fig. 8. Left lateral view two years after reconstruction.

The tissues closest to the nose will give the best result with the most natural appearance, if they are of good quality and satisfactory in quantity.

Split thickness skin has a limited usefulness in this type of repair. There are cases, however, in which the split graft may be used for cover. In these cases the best donor areas are the neck, infracvicular, lateral chest and inframammary areas, in that order of preference for colour match (Edgerton and Hansen, 1960). We have used split thickness skin in 3 children, where the bed was not very healthy, to serve as a temporary cover. Final cosmetic appearance will be improved when the children grow old.

For most significant defects of nasal structure, flap tissue will provide the best reconstructive material. The history of Plastic Surgery is intertwined with the use of flap tissue for nasal reconstruction. As early as 600 B. C. the ancient Hindus utilised first cheek and later forehead flaps to rebuild noses that had been cut off as punishment for theft, adultery, and other crimes (Carpue, 1969; McDowel et al., 1952). In the fifteenth and sixteenth centuries, the Brancas and Tagliacozzi carried out nasal reconstruction with arm flaps in a manner that is now classic (Gnudi and Webster, 1950). In the nineteenth century European surgeons used three flaps; Dieffenbach described many variations in the mid 1800s (Dieffenbach, 1845, 1833). Recent advances all go in favour of use of flaps, preferably a local flap for a better colour match, proper fat content, and non-hairy. For the quality and eonsistency forehead and nasolabial flaps preferred over arm flap.

The tissue of both cheeks, particularly that outpouching directly lateral and superior to the juncture of the cheek and upper lip has most of the qualities necessary for good nasal reconstruction. It has the advantages of location, color match, excellent blood supply, minimal donor deformity, absence of hair and ease of transfer usually under local anaesthesia (Cameron, 1973). The most significant limitation to the use of this tissue is its quantity, though in appropriate patients with proper planning of the flaps, almost the entire nasal dorsum can be resurfaced from this source (Fryer, 1974). We heve used the nasolabial flaps in two patients with good results.

The skin of the forehead has the same advantages in general as that of the nasolabial fold and cheek in nasal reconstruction. In addition there is usually more than adequate quantity available. There is a consistent, predictable vascular supply that allows transfer usually without delay unless long narrow or complex flaps are utilized (Millard, 1974, 1976). For these reasons it is the most widely used tissue for major nasal reconstruction, though the donor site deformity may be significant. We have used forehead flaps in five patients with persistently satisfactory results.

Arm flaps for rhinoplasty has the main disadvantage of poor colour match, in addition to the difficult positioning. We have used this Italian method in one lady patient who refused for the forehead as the donor site.

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