RHINOPLASTY AND YOUNG'S OPERATION IN ATROPHIC RHINITIS

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Abstract: Rhinoplasty in atrophic rhinitis is a difficult surgery because the dorsal skin is adherent to the underlying structures. There is also more chance of postoperative infection. Our experience of various types of rhinoplasty in 25 atrophic rhinitis patients are presented here. The patients were from the age group 16 to 35 years. Most of the operations were done under local anaesthesia. Commonest graft used was conchal cartilage. Bone graft was avoided for augmentation because of its high rate of absorption in atrophic rhinitis. In 10 patients Young's operation was done in one side along with rhinoplasty. Young's operation was done only with skin layer.

Keywords: Rhinoplasty, Atrophic rhinitis, Young's operation

INTRODUCTION

Nasal reconstruction has been described in Susruta Samhita as early as sixth century B.C.

In 1887 John Orlando Roe of United States described corrective rhinoplasty. Robert Weir (1892), Jacques Joseph (1898), Miller (1907), Aufrecht (1920), Goldman (1956) and Sercer (1958) may be mentioned among others as having made valuable contribution towards growth and development of rhinoplastic surgery. Rethi (1971) first described a trans-columellar incision as an approach to the nasal tip. Goodman popularised the technique in North America since 1973.

Nasal bridge depression may be seen in many cases of atrophic rhinitis. This may be due to inadequate development of the nasal bones. Gross saddle deformity in many cases of long standing atrophic rhinitis is due to absorption and / or weakening of the septal cartilage or the nasal bones. Increased concentration of alkaline phosphates in atrophied nasal mucosa may be responsible for absorption of bone and cartilage (Girgis, 1966). Various other deformities which are found in otherwise healthy noses may also be found in patients of atrophic rhinitis. Rhinoplasty in patients with atrophic rhinitis is risky as there will

be more incidences of postoperative infection and graft rejection. But with proper precautions any type of rhinoplasty can be done in atrophic rhinitis patients. Bone grafts should be avoided in atrophic rhinitis patients, as it will be absorbed in most of the cases. Correction of the external deformity will

not cure the underlying disease. So Young's operation (unilateral) was done along with rhinoplasty in some of our cases. Young's operation was done in single layer i.e. only by skin layer. The advantages of single layer is that there will be less deformity due to Young's operation, operation is easier and reopening will be easier.

MATERIALS AND METHODS

25 cases of atrophic rhinitis, 18 females and 7 males ranging in age from 16 to 35 years were operated in ENT department during the period from September, 1995 to May, 2004. The nasal deformities were saddle nose, crooked nose, deviated nose, tip deformity, supratip depression, broad nasal bridge, low dorsum, flaring ala, alar defect etc. Conservative treatment was done in all the patients by alkaline nasal douche, 25% anhydrous glucose in glycerine, systemic antibiotics, iron and vitamins. Suction clearance was done to remove the crusts in nasal cavities and systemic antibiotic was given one week before the operation.

After pre-operative check up, photographs were taken in frontal, lateral and basal view. Most of the operations were done under local anaesthesia. General anaesthesia was used in uncooperative adults and where rib cartilage and iliac crest grafts were taken. Extended septoplasty was performed to correct the functional problem and the cartilaginous dorsal deviation. For minor or moderate augmentation, autologous conchal cartilage was used in two or three layers after ligating those with vicryl

Fig. I : Pre-operative frontal view of a patient with saddle nose who underwent augmentation by conchal cartilage.

Fig. II: Post-operative frontal view of the same patient.

Fig. III: post-operative basal view of the same patient showing closure of left nostril.

or catgut. For major augmentation iliac crest bone or rib cartilage was used. To minimize absorption of the graft and to prevent displacement, the grafts were placed under the nasal bone periosteum. For augmentation, external rhinoplasty was found to be a better approach as the subperiosteal pocket could be made exactly in midline under direct vision and the graft lied away from the incision site.

For tipplasty external approach was found to be better than the internal

approach though the former takes more time. The alar cartilage was incised just medial to the dome and a posteriorly based pedicled chondral flap was made in both sides. Cephalic trimming of the lateral crus was done symmetrically in both sides. In some cases medial crura were sutured and inlay tip graft was placed. For correction of crooked noses septorhinoplasty with medial and lateral osteotomies was performed. Septal exposure was done before the osteotomies. Tight nasal packing was avoided to prevent displacement of the fractured bony lateral walls. For flaring ala alar resection was done at the end of the operation.

For alar defect like alar perforation (traumatic origin), composite graft was taken from pinna. A triangular piece of composite graft was excised from the pinna and the graft was trimmed to fit in the alar defect.

Young's operation (unilateral) was done along with rhinoplasty in 10 cases of atrophic rhinitis. Young's operation was done in single layer i.e. with skin layer only after making circular incision at mucocutaneous junction in nasal cavity.

RESULT AND ANALYSIS

In the present series the patients were from the age group 16 to 35 years, the incidence in female was more than in male (Table : I). Augmentation rhinoplasty was the commonest operation followed by tipplasty (Table II). Young's operation was done in 10 cases along with rhinoplasty. Commonest graft used was autologous conchal cartilage (26%) (Table III). Failure occurred only in 2 cases. In one case, the iliac crest graft was completely absorbed and in another case conchal cartilage graft was absorbed due to infection. For alar repair composite graft was taken from pinna. In the present series external rhinoplasty (52%) was more commonly done than the internal approach. Most of the operations were done under local anaesthesia (Table IV).

All the patients were more or less satisfied with the results of the operation though all operations were not perfect. Following complications were seen -

- 1) Subconjunctival haemorrhage and dark areas beneath the eyes in two patients where osteotomies were done.
- 2) Tip oedema- more in external rhinoplasty which recovered gradually.

- 3) Columellar scar in one patient.
- 4) Mobile dorsal graft in one patient where cartilage graft was placed subcutaneously.
- 5) Mild stenosis of the anterior nares in one patient where alar resection was done.
- 6) The layers of the cartilage graft for augmentation should be ligated with vicryl. Catgut ligature invited infection of the graft in some cases which was controlled by systemic antibiotics and local injection of gentamicin.

Mild deformity of pinna due to perichondritis after taking conchal cartilage graft in one patient.

DISCUSSION

Minimum surgery to gain maximum benefit should be the principle in rhinoplasty in atrophic rhinitis. Patients should be suitably explained about the deformity and how best one can successfully correct it ⁽¹⁾. In long standing atrophic rhinitis the thick puckered skin is usually adherent to the underlying structures. So elevation of skin is difficult and great care and patience is required to prevent buttonhole formation. These patients tolerate synthetic implants poorly and show an unusually high rate of absorption of autologous bone graft ⁽²⁾. In the present series in only one case bone graft was used which was absorbed completely. For major augmentation rib cartilage was found to be the best material. To minimize the curling of rib cartilage balanced cross section should be done. Septoplasty was done with minimum elevation of mucoperichondrium and minimum resection of septal cartilage.

The sub-labial approach to the lateral osteotomy carries a danger of infracturing the head of the inferior turbinate, with ensuing airway impairment ⁽³⁾. It is very important to perform complete radical osteotomies. Mobilization and reduction by incomplete osteotomies usually corrects the deviation initially, but there will be a recurrence of the deformity due to the contraction of the fibrous tissue within six weeks. The reintroduction of an osteotome in a case of incomplete osteotomy always produces very severe post-operative bruising and swelling, often with enormous black eyes. The closed septorhinoplasty does not give the depth perception and makes the quantification of the amount of reduction or augmentation difficult for the surgeon. Even the most experienced surgeon can benefit from the enhanced visualization and greater working area associated with the open approach.

The external approach to nasal tip surgery allows the placement of sutures with exact symmetry and the various tip procedures may be performed more easily, more symmetrically and with better results ⁽⁴⁾. Adamson et al (1990) reviewed 100 consecutive external rhinoplasties and found only 2.5% minor complications related to columellar scar ⁽⁵⁾. During septoplasty mucoperichondrial tears are usually made at the junction of the cartilage with the premaxilla and maxillary crest. This is caused by the fact that resilient connective tissue fibres cross this joint.

Since these fibres are stronger than the mucoperichondrium itself there is a chance of piercing the mucosa rather than the joint capsule if one resorts to blunt dissection ⁽⁶⁾. It is advised to splint the nose at the end of the operation in a slightly over-corrected position.

In 10 cases rhinoplasty was successfully combined with unilateral Young's operation. Young's operation was done only with skin layer and there was no alar deformity. Atrophic rhinitis patients suffer both mentally and physically. In some of the cases rhinoplasty and Young's operation will help them to overcome this.

Table - I : Age and sex incidence

Age group in years	Male No. of cases	Female No. of cases	Percentage
16-20	1	9	40
21-30	5	6	44
31-35	1	3	16
Total	7	18	100

Table - III : Grafts used and results

Nature of graft	No. of cases	%	Result	
			Satisfactory	Failure
Conchal cartilage	13	71	12	1
Rib cartilage	3	17	3	-
Iliac crest bone	1	6	-	1
Composite graft (Pinna)	1	6	1	-

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Table - II : Incidence of Different Procedures

Procedures	No of Cases	Percentage
Augmentation rhinoplasty	16	64
Tipplasty	6	24
Correction of alar flare	5	20
Septorhinoplasty	4	16
Extended septoplasty	2	8
Ala repair by composite graft	1	4

Table - IV : Techniques of Rhinoplasty and Anesthesia

Techniques	No of Cases		Percentage
	L.A.	G.A.	
External approach	9	4	52
Internal approach	11	1	48

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