

Original Research Article

Septorhinoplasty-our experience

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ABSTRACT

Background: The nose is not only a vital organ but also cosmetically important, especially for younger individuals. External nasal deformities like deviated nose, crooked nose, hump deformity, abnormalities of the tip are more noticeable. They cause cosmetic disfigurement and also may cause nasal obstruction when associated with deviated nasal septum. One of the oldest known cosmetic surgeries is rhinoplasty. Septorhinoplasty is done to correct the deviated septum as well as the external deformity of the nose. The aim is to study the indications, various surgical methods used, complications and results of septorhinoplasty.

Methods: A total of 30 patients were taken into the study based on the inclusion and exclusion criteria. They underwent rhinoplasty surgeries based on different deformities.

Results: The majority of the patients were in the 21-30 years age group and deviated nasal septum with external deformity was the most common pathology addressed. Septal cartilage was used as the graft material in most cases. Excessive bleeding was the most common complication encountered and all the patients were satisfied with the result.

Conclusions: Septorhinoplasty can be done for functional as well as cosmetic causes. Graft material should be chosen based upon the defect to be corrected. The results depend upon the defect and the expertise of the surgeon.

Keywords: Septoplasty, Septorhinoplasty, Rhinoplasty, External nose deformity

INTRODUCTION

The nose, a link between ear and throat, is not only of great importance to both, but itself is a vital organ. Nasal deformities constitute around 1-2% of all the ENT diseases that get diagnosed in the department of otorhinolaryngology, Santhiram medical college and general hospital, Nandyal.

Various granulomatous diseases like tuberculosis, syphilis, and leprosy, trauma either surgical like in submucosal resection or road traffic accidents or Blunt injuries with or without septal hematoma/abscess can produce nasal deformities.

Septorhinoplasty is an attractive and fascinating surgery for most of the otorhinolaryngologists and plastic

surgeons. Moreover, it is a quite popular surgery universally and is more in demand, especially by the youngsters who want to improve their facial and nasal appearances to enhance their personalities.

The study was conducted from December 2017 to November 2019. In this study, we tend to study thirty cases of various nasal deformities, who attended the ENT OPD, Santhiram general hospital, Nandyal. By utilizing STORZ 0-degree endoscope, with a camera and monitor system and various rhinology instruments, surgeries were done.

Aims and objectives

Septorhinoplasty is considered a challenging surgery, but with good knowledge of surgical anatomy of the nose and

understanding, the dynamics and healing patterns of surgery, it may not be that difficult.

The aim is to study the indications, various surgical methods, complications and results of septorhinoplasty.

METHODS

Sampling

The present study, septorhinoplasty-our experience includes a total of 30 patients with nasal deformities who underwent septorhinoplasty in Santhiram medical college and general hospital, Nandyal, during the period between December 2017 and November 2019.

Ethical approval was taken from the institutional ethics committee.

Type of study

A prospective analytical study of septorhinoplasty is done, observing the age and gender variations of the patients who underwent septorhinoplasty for various deformities of the nose satisfying the inclusion criteria and ideal procedure for those patients is identified, and the different approaches of septorhinoplasty and their complications are evaluated.

A total of 30 patients presented to the department of otorhinolaryngology with deformities of the nose, and nasal obstruction fulfilled the inclusion criteria were taken in the present study.

Inclusion criteria

Patients with deviated nasal septum and external nasal deformities requiring septorhinoplasty and aged between 15-60 years of either sex. Patients who gave informed and written consent for the surgery and patients with a good psychological condition were included in the study.

Exclusion criteria

One patients with systemic disorders and not fit for surgery, patients who aren't willing to follow up post-operatively and patients with a psychiatric disorder were excluded from the study.

For all the cases, a detailed history regarding nasal obstruction and associated symptoms like nasal discharge, epistaxis, and history of injury to the face and nose or any history of previous surgery and history of bleeding diathesis, cardiac disorders, uncontrolled hypertension, diabetes were carefully noted. The preoperative evaluation of the nose is done carefully. In all, the patient's complete clinical examination was done.

The type of approach is determined by detailed preoperative evaluation of the patient. In patients with

simple/minor deformity, a closed approach was done and alternatively, an open approach was done for treating a twisted nose, heavy deformities, and S-shaped deviations.

Nasal cavities are packed with medicated paraffin lubricated ribbon gauze snugly and the pack is removed after 2 to 4 days accordingly. For splinting, a six-layered plaster of Paris bandage is used, and this is soaked in tepid water and applied on the nose till it becomes hard and adequately set.

IV antibiotics for two days, followed by oral antibiotics, analgesics, antihistamines and decongestants for 7 days.

RESULTS

Sex distribution

In our study of 30 patients, 16 patients were male, and 14 patients were female. Overall, the study group was male predominant.

Table 1: Sex distribution-in each group.

Sex	No. of patients	Percentage (%)
Male	16	53.3
Female	14	46.7
Total	30	100

Age distribution

Most of the patients in the study group belonged to 21-30 years of age that is 18 patients (60%).

Table 2: Age distribution.

Age (years)	No. of patients	Percentage (%)
15-20	2	6.7
21-30	18	60
31-45	8	26.6
46-60	2	6.7
Total	30	100

Pathologies addressed

The most common pathology addressed is deviated nasal septum (DNS) with external deformity.

Table 3: Pathologies addressed.

Pathologies addressed	No. of patients	Percentage (%)
DNS with external deformity	18	60
Crooked nose	6	20
Hump nose	4	13.4
Tip deformity	1	3.3
Saddle nose	1	3.3

Type of grafts used

Septal cartilage was found to be the most commonly used graft material.

Table 4: Type of grafts used.

Graft material	No. of patients	Percentage (%)
Septal cartilage	16	53.3
Conchal cartilage	8	26.7
Rib cartilage	6	20

Type of approach

In this study of 30 patients, in 16 patients open approach of rhinoplasty and in 14 patients the closed approach of rhinoplasty is done.

Table 5: Type of approach.

Type of approach	No. of patients	Percentage (%)
Open	16	53.3
Closed	14	46.7

Nasal obstruction

Out of 30 patients in the study, 18 patients were found to have associated nasal obstruction, of which ten patients underwent closed rhinoplasty and the remaining 08 underwent open rhinoplasty.

Complications

Excessive bleeding was found to be the most common complication encountered.

Table 6: Complications.

Complications	No. of patients
Excessive bleeding	4
Ecchymosis and edema	1
Persistence of minor deformities	2
Synechia	2
Button holing of skin	0
Nasal stenosis	0
Infection	0

DISCUSSION

Rhinoplasty is indicated in deformities of the nose for both functional and cosmetic purposes. Many persons with cosmetic nasal deformities are particularly conscious about their appearances and seek aesthetic improvement due to increasing social pressures and fast-changing society patterns. Rhinoplasty is one of the most commonly performed cosmetic surgeries and, in many cases, an elective procedure. Modern rhinoplasty can be

approached by two distinct techniques: the open/external technique and the closed or endonasal technique. Each rhinoplasty procedure, with its inherent strengths and weaknesses, has to be matched with a given nasal condition and the desired results to offer the maximum benefit to the patient.

Sex distribution

The present study of 30 patients consisting of 16 (53.3%) males and 14 (46.7%) females. The male to female ratio of the present total study group was 1.14:1. Overall the study group was male predominant. This can be attributed to more exposure to trauma in males or random assignment of the patient. Biqqs et al conducted a study of patient-reported outcome measures in rhinoplasty surgery on 100 patients in which 52 patients (52%) were males, and 48 (48%) were females with a ratio of 1.08:1.¹

Age distribution

In the present study, the population ranged from 15 to 60 years, with a mean age of 30.2 years. Most of the patients in the study group belong to the 21-30 years age group that is 18 patients. Spataro et al conducted a retrospective cohort study on revision rates and risk factors of patients undergoing rhinoplasty in which the mean age was with SD of 15.3 years.²

Pathologies addressed

In our study population of 30 patients, a total of 18 cases had deviated nasal septum with external deformity, out of which ten patients had undergone closed rhinoplasty, and eight had undergone open rhinoplasty.

We included 6 cases of crooked nose deformity, of which in 2 cases with minor deformity, closed rhinoplasty was done, and in 4 cases with gross deformity, we preferred open rhinoplasty.

Out of 4 hump nose cases, we did closed rhinoplasty in 2 subjects and open rhinoplasty in 2 subjects. We encountered 1 case of saddle nose deformity, having gross deformity underwent open rhinoplasty. In 1 patient with tip deformity, open rhinoplasty was done.

For achieving successful correction of the deviated nose, all anatomic components involved in the deformity have to be recognized and treated accordingly. Septal surgery plays a crucial role in the management of the deviated nose. Even in the absence of functional problems, correction of minor and major septal deviations can determine the realignment of the external nose.

Type of approach

The type of approach is determined by detailed preoperative evaluation of the patient, and in patients with simple/minor deformity, we preferred a closed

approach, and alternatively, an open approach is indicated for treating a twisted nose, heavy deformities, and S-shaped deviations. So, the selection of the type of surgery was made purely on the basis of patient requirement and type of deformity dealt with. Our observations were consistent with the Parrilla et al study of septorhinoplasty in DNS.³

In the study done by Li et al risk factors for corrective septorhinoplasty associated with initial treatment of isolated nasal fracture, suggested that a pre-existing diagnosis of nasal obstruction or defect and other aspects of a patient's history are factors to consider for the treatment of nasal deformities.⁴

In our study of 30 patients, 16 patients underwent open rhinoplasty and 14 patients underwent closed rhinoplasty.

In a study conducted by Lee et al open approach is the preferred choice for both primary and revision rhinoplasties.⁵ The endonasal approach is an appropriate choice for selective patients due to the lower chance of complications and a shorter procedure time. With open rhinoplasty with the transcolumellar incision technique, surgery can be more easily controlled, however, extended nasal tip edema and columellar scar are some of the disadvantages of this method.⁶ But the use of both hands for sculpting leads to ease of work and better results in the surgical process. Precise techniques do help in making the columellar scar less conspicuous.

In Foda study of external rhinoplasty; critical analysis of 500 cases, transco-lumellar scar was found to be unacceptable in only 0.8% of the cases.⁷

However, key to success for rhinoplasty is a thorough preoperative analysis with the establishment of a diagnosis and execution of an individualized procedure tailored to the specific anatomic abnormalities and concerns of the patient. The modern approach to rhinoplasty is characterized by cartilage preservation and incremental changes to the cartilage and bony framework.⁸ Although the most common complaints among all post-rhinoplasty patients remain the over resected dorsum, tip, or (internal valvular) airway obstruction. Although the most common complaints among all post-rhinoplasty patients remain the over resected dorsum, tip, or (internal valvular) airway obstruction, Constantian in his study of differing characteristics in 100 consecutive rhinoplasty patients suggested that patients previously treated by the open approach are more likely to have postsurgical deformities and complaints.⁹

Graft materials

In our study of 30 patients, septal cartilage was used in 16 cases, conchal cartilage in 8 patients, and rib cartilage in 6 patients.

As the goal of septorhinoplasty is the reconstruction of the nasal skeleton to provide adequate structural support allowing for optimum functioning of the nasal airway and achieving an aesthetically pleasing result, we have used, autogenous grafts particularly cartilaginous types, largely because of their good acceptance rate, durability, virtual lack of an immunogenic response, low infection, and extrusion rates when compared with others.^{10,11}

The septal cartilage was most commonly used as it was easily accessible from the same site of surgery, and conchal cartilage was used in patients with minor deformities where there is a compromise of septal cartilage. We had used rib grafts in gross deformities and in patients where there is no adequate septal or conchal cartilage. Autogenous cartilage grafting offers strength for nasal support to replace or augment missing tissue with similar tissue and recreate the nasal anatomy as close to normal as possible.

Autografts do not induce an immune response, and also have the lowest infection and extrusion rates of any currently available materials. Rib cartilage grafts are the gold standard for nasal reconstruction in patients with cartilage depletion and when large amounts of tissue are needed.¹²

Nasal obstruction

Out of 18 patients with nasal obstruction, 10 underwent closed rhinoplasty, and 8 patients underwent open rhinoplasty, and during follow-up, it was found that all patients were comfortable and relieved of nasal obstruction.

Complications

In our study, out of 30 patients-4 patients had excessive bleeding, 1 patient had ecchymosis and edema, 2 had persistent minor deformities, 2 patients had synechiae.

Usually, rhinoplasty techniques focus on the alteration of the osseo-cartilagenous framework of the nasal skeleton. However, the aesthetic outcome is the product of the nasal skeleton contour and the overlying skin-soft tissue envelope. The quality of the skin is an essential indicator of the surgical outcome and plays a significant role in preoperative planning. Cutaneous problems after rhinoplasty have always been considered minor, and transient. The most common being contact dermatitis, appearing as rashes or pustules with or without allergic reactions from the adhesive tape or nasal splint.¹³ Septal deviation presents a considerable challenge in septorhinoplasty because it leads to functional and aesthetic problems. This deformity may displace the nasal tip, disturb nasal valve patency, and affect the final outcomes of septorhinoplasty.

Nazari et al in his study described an innovative technique that can be used in patients with C-shaped

deviation of the septum in a cephalocaudal direction.¹⁴ Because the procedure is similar to carpentering, it was named a “carpenter spreader graft.” In this technique, the deviated dorsal cartilage is separated and displaced to a new straightened position.

A nasal bone fracture can cause aesthetic and functional challenges, and if these challenges are neglected, the patient might require longer hospitalization and treatment period, besides incurring a higher cost of treatment.¹⁵ If the patient desires aesthetic improvement and the outcome of closed reduction is not satisfactory, concomitant open reduction and rhinoplasty can be performed during primary treatment to avoid a secondary surgery, thus optimizing the costs.¹⁶

Limitations

The sample size is small. Only patients attending the hospital between December 2017 to November 2019 were taken into the study.

CONCLUSION

In the present study, the functional outcome and complications of closed rhinoplasty with open rhinoplasty were taken up. From the results and observations of the present study, the conclusions were: septorhinoplasty is done for both functional and cosmetic purposes. The choice of graft material depends upon the defect to be corrected and also on the surgeon. Both external and closed are giving almost equal results in both functional and aesthetic aspects. Both procedures had minimal complications with negligible variations.

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