

## External Versus Internal Approach for Rhinoplasty A Prospective Study

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### **Abstract:**

**Background:** A beautiful nose adds beauty to the face. cosmetic correction of nose is known as rhinoplasty. There are two techniques for cosmetic correction of nose, known as external rhinoplasty and internal rhinoplasty. Each of these provides advantages and imposes limitations. The purpose of the study was to compare the internal and external approach for rhinoplasty and to know indications, advantages and limitations of each.

**Materials and Methods:** In this prospective study of the technical approach for correction of deflected nasal septum and associated nasal deformities - internal versus external approach has been done in a group of 40 cases, belonging to age group of 18-40 years.

**Results:** In external rhinoplasty more operative time is required owing to incision and closure, but also more deformities can be seen helps in meticulous correction. The internal approach is much easier and takes lesser time but inaccessibility to various deformities and also difficulty in correcting them.

**Conclusion:** External rhinoplasty has definite advantages over internal approach and presence of a small visible scar on the nose is very negligible. When compared with the good cosmetic results achieved by external approach.

**Key Word:** External rhinoplasty; Internal Rhinoplasty; Conchal cartilage; Augmentation Rhinoplasty; Saddle nose deformity; Crooked nose deformity; Deviated Nasal Septum.

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### I. Introduction

Rhinoplasty has been described as the most difficult procedure in the plastic surgery. In recent decades, a standard technique for rhinoplasty has evolved. The surgical steps presents technical difficult, but their correct application is far from easy, and the rhinoplasty is a branch of surgery where errors related to lack of judgement are very obvious. It demands careful analysis, good technical execution of a surgical plan and continued follow up for many years. In most of the cases correction of the septum can be combined with rhinoplasty in one operative procedure. A surgical anachronism is a standard submucosal resection to be followed at a later date by a rhinoplasty. Rhinoplasty is one of the most commonly performed aesthetic procedure in facial plastic surgery and several surgical techniques in aesthetic rhinoplasty are supported by different prominent experienced rhinoplasty surgeons in the field. Regardless of technique, most surgeons, however will agree that success in aesthetic rhinoplasty, for both patient and surgeon, is dependent on a thorough and systematic preoperative evaluation of the patient. Patient history, it is fundamental that surgeon obtained and document, a thorough medical and nasal history for each patient in the preoperative consultation as many factors influence the complexity of surgery and its outcomes. The intranasal examination of the patient's nose and nasal airway is fundamental for the surgeon's comprehensive understanding of the patient's anatomy prior to surgery. The cosmetic appearance of the nose must not compromise its functions, this is essential. The adequacy of the nasal airway, position of the nasal septum, nasal valve competence, and conditions of the mucosa and inferior turbinates must be inspected. The external nasal valves should be assessed for dynamic collapse with inspiration and inter nasal valves can be assessed endoscopically. If nasal obstruction is present, specific anatomic factors may be addressed at the time of cosmetic rhinoplasty. Septal deformities are important to note that it's deviations, spurs, perforation and availability of septal cartilage must be assessed as it is a primary autogenous graft. Although facial beauty correlates with a subjective observer's perception, certain geometric rules of proportions, angles, symmetry, and balance appear to be universally consistent. A comprehensive understanding of their relationships, which have been considered the standard, is helpful in identifying deviations and analyzing the characteristic of individual patients. Successful rhinoplasty depends on a thorough systematic analysis of both nose and facial features with in-depth understanding the set analytical concepts. In addition to their use in facial analysis, photographs facilitate communication with patient, provide important intraoperative

information, are essential for objective outcome evaluation, and aid in teaching and medicological documentation. The goal of primary rhinoplasty is to alter the patients nose to achieve appropriate balance and harmony with other facial features.

## II. Material And Methods

This study was conducted on patients attending otorhinolaryngology outpatient department from August 2019 to June 2020.

Inclusion criteria:

1. The patients were selected from those who came to the out-patient department with complaints of having nasal obstruction with external deformities of the nose.
2. Patients selected for the study were above 18 years of age, belonging to either sex
3. Revision septorhinoplast
4. Severe trauma to nose

Exclusion criteria:

1. Patients below 18 yrs.
2. Patients not willing to participate in study
3. Patients who are HBsAg positive and Retroviral positive.
4. We have excluded from the study, those patients having other facial abnormalities other than nasal deformities.

All the patients were subjected for routine pre-operative laboratory and radiological investigations, and pre and post-operative photographs taken for the documentation.

### Procedure methodology

After written informed consent was obtained, all the patients were subjected to pre-op blood investigations ,3D CT face ,pre-op facial photographs frontal ,lateral ,basal and helicopter views.all the patients in this study are randomly into 2 groups..one group of 20 patients subjected to External Rhinoplasty remaining 20 patients Treated with Internal rhinoplasty..outcomes of two approaches are studied for Advantages and limitations of each .In this clinical study,The external approach was useful in division cases,for Augmentation rhinoplasty.Internal approach was followed in all other cases which required relief from nasal obstruction due to deflected nasal septum either traumatic or developmental and also to correct external deformity due to lateral deviation of the nasal bones.

## III. Results

Clinical study of rhinoplasty techniques during the period from August, 019 to June 2020 .Total duration in the study of 11 months and the age group range from 18 years to 40 year.

**Table no1**

TYPE OF APPROACH	NUMBER OF CASES	MALE	FEMALE
Internal approach	20	8	12
External approach	20	11	9
Total	40	19	21

PostOp.Complications:

- MidColumellarsuturescar.
- Openroofdeformity
- Nasalobstruction
- Nasalinfection

**Table no 2**  
**Statistical analysis**

Diagnosis	No.of patients taken into study	Male	Female	Age Range
Saddle deformity of nose	18	08	10	18 to 40 yrs
a)Associated with DNS	10	04	06	--
	04	02	02	--
b) Associated with CSOM	04	02	02	--

c) Associated with alar flare up				
Crooked Deformity	8	5	03	18 to 25 yrs
Dorsum hump	05	02	03	18 to 32 yrs
Bulbous Tip Deformity	02	01	01	19 to 26 yrs
Broad Nose / wide nose	02	-	02	25,28 yrs
Post operative deformity	02	01	01	18,21 yrs
Long nose with dorsum hump and droopy tip	01	01	--	35 yrs
Broken saddle nose with nostril stenosis	01	01	--	23 yrs
Droopy projection tip	01	--	01	28 yrs
Total	40	19	21	18 to 40 yrs

**IV. Discussion**

COMPARATIVE STUDY OF THE RHINOPLASTY BY EXTERNAL VERSUS INTERNAL APPROACHES. Perhaps one of the most confusing dilemmas confronting the prospective rhinoplasty patient is the choice of open versus closed rhinoplasty. The two possible surgical approaches — that is, the access method used to temporarily remove the nasal skin and facilitate exposure of the skeletal framework. Since virtually all changes to the outer nasal contour result from corresponding changes to the nasal skeleton, the surgical approach, and the corresponding skeletal exposure it provides, has a direct bearing on the ease of surgery and thus, the quality of the rhinoplasty outcome. In the closed rhinoplasty approach, also called endonasal rhinoplasty, all of the surgical incisions are positioned inside the nostrils. Although parallel incisions encircle nearly half of the nostril lining, no part of the incision can be seen externally and a visible scar is avoided. The right and left nostril incisions remain disconnected, repositioning of the nasal skin is difficult and the entire operation must be conducted through narrow surgical openings with limited visibility. Because access to the nasal framework requires vigorous stretching of the nasal skin, distortion of the nasal cartilage is inevitable. While a visible scar is prevented, considerable challenges and technical limitations are associated with the relative lack of surgical access. Hence, closed rhinoplasty merely refers to the relative lack of surgical exposure associated with the endonasal approach. Unlike the closed rhinoplasty, the open or external rhinoplasty approach employs a small bridging incision, called a trans-columellar incision, to connect the right and left nostril incisions. In exchange for this 4-5 mm visible segment, the nasal skin can be folded upward and unimpeded visibility of the lower nasal skeleton can be achieved. In addition to direct visibility of almost the entire nasal framework, distortion of the nasal cartilage is minimized and individual components can be evaluated in their natural, undisturbed alignment. Thus, the hallmark of the open rhinoplasty is the vastly improved surgical access permitted by the trans-columellar incision. Although many aspects of an unattractive nose can be corrected using a closed rhinoplasty approach thereby avoiding a trans-columellar incision, in my opinion, the modest risk of a visible columellar scar is more than offset by the improved accuracy, versatility, and effectiveness of the open rhinoplasty approach. In fact, most rhinoplasty experts regard open rhinoplasty as the procedure of choice for difficult nasal anatomy of any type, and many of the most effective techniques of contemporary rhinoplasty can only be performed through the open approach. For these same reasons, open rhinoplasty is also my preferred approach for primary non-revision rhinoplasty since it improves diagnostic accuracy and facilitates precision re-engineering of the misshapen nose. The technical demands of open rhinoplasty are rigorous, and substantial dedication and commitment to this approach are required to achieve consistently superior results. One of the most important technical aspects of using the open approach is precise suture realignment of the trans-columellar incision. When performed correctly, the healed trans-columellar incision is often invisible and seldom results in an objectionable scar. In expert hands, the open approach a considerable technical advantage over closed rhinoplasty which more than compensates for the minimal risk of visible scarring. Said another way, in my opinion closed rhinoplasty creates an unnecessary handicap that I find difficult to justify, particularly since the demands of reshaping a misshapen nose are already challenging enough. Male Rhinoplasty is always believed to be a separate entity, as male noses are usually more deformed, also expectations in male is always more than females, their thick skin makes result late to appear. In our practice we see every nose as a different and individual entity be it male or female rhinoplasty and contrary to the common belief in plastic surgery society our male patients are equally happy. In females skin is usually thin and shape of the nose appears well after rhinoplasty. The classical intranasal approach has been followed without controversy in many parts of the world. But open rhinoplasty has had a contraversial birth in North America with special criticism about the columellar scar and lack of advantage over closed approach. There is no doubt that a scar results and many surgeons reported no patient dissatisfaction or scars requiring revision. In this clinical study also, the visibility of the scar is very minimal and there is no patient dissatisfaction. In external rhinoplasty more operative time is required owing to the incision and closure, but also more deformities can be seen and the surgeon becomes more meticulous. But this is not the case in intranasal approach. The intranasal approach is much easier and takes lesser time when compared to the external approach. The disadvantage with the intranasal approach is

inaccessibility to various deformities and also difficulty in correcting them, especially in a case of saddle nose. The positioning of the graft in correcting the saddle nose is difficult in intranasal approach. But in the external approach the position of the graft can be satisfactorily achieved. In this clinical study the conchal cartilage and homograft septal cartilage were used in correcting the saddle nose. The results are satisfactory. The patients have been followed upto three months and there is no patient dissatisfaction. In one case though there was no nasal obstruction, a cosmetic rhinoplasty was done to correct the minor degree of saddle nose and alar flaring. In this case no graft was used, but with performing osteotomies, medial and lateral, the saddle was corrected to the satisfaction of the patient. The alar flaring was also corrected by removing wedge shaped tissue near the floor of the nose and narrowing the alar diameter. In this case, the intranasal approach was preferred to the external approach since no grafting was contemplated due to the minor degree of saddle nose. In one case, a submucous resection was performed elsewhere, for correction of the deflected nasal septum and the patient came to this hospital with saddle deformity of severe degree. In this case external rhinoplasty was done using conchal cartilage. The advantage in external rhinoplasty was correct positioning of the graft without displacement at a later stage. The patient was followed for about three months with satisfactory results and there is no patient dissatisfaction. The patient was asked to report periodically every three months to review the results of augmentation rhinoplasty, but the patient did not report after three months. It was assumed that the patient is very much satisfied with augmentation and there is no rejection of graft. The columellar scar is almost all invisible and there is no complaint from the patient about the scar. In one case of saddle deformity of nose Augmentation Rhinoplasty with conchal cartilage was done through subcutaneous approach, after 3 months the graft got displaced and resulted in dissatisfaction of the patient, later it was corrected by external approach. The chances of graft displacement are more with subcutaneous approach as the graft is nearer to the incision site, where as in case of external approach the graft site is far off from the incision site. In one case the patient sustained injury due to cricket ball and there was malunion of the fracture of nasal bones resulting in external deformity. Intranasal approach was performed with correction of the deflected septum by septoplasty and also medial and lateral osteotomies to correct the external deformity. In external rhinoplasty there are potential problems with columellar flap viability, but if care is taken in raising and handling flaps, this concern is minimal. The advantages of external rhinoplasty are primarily related to improve surgical exposure. Asymmetries can be corrected, grafts can be trimmed exactly, and sutures can be placed under direct vision to maintain the position of the cartilage. Thick skin or scar tissue can be more easily managed. The valve area is preserved from the intercartilaginous incision helping to prevent obstructive problems. In external approach bleeders can be cauterized. The surgeon has binocular vision and two hands free. In the closed technique Joseph said "It is as if the skin under which we operate were transparent". But the opinion of the majority of surgeons is appreciation of the open technique, because of the advantages, particularly in revision cases for severely asymmetric tips. The open operation tends to be more visual than tactile. In this clinical study, the external approach was useful in revision cases, for augmentation rhinoplasty. The internal approach was followed in all other cases which required relief from nasal obstruction due to deflected nasal septum either traumatic or developmental and also to correct external deformity due to lateral deviation of the nasal bones.

## V. Conclusion

This study clearly shows that external rhinoplasty has definite advantages over internal approach. In our study emphasis was on the importance of septal correction in rhinoplasty. The study concluded that the presence of a small visible scar on the nose is very negligible when compared with the good cosmetic results achieved by external approach.

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