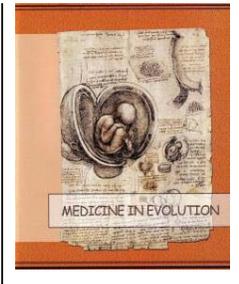


Rhinoplasty for beginners – article review



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Abstract

Rhinoplasty is a surgical procedure that mainly has a cosmetic role but also implies a functional one for the improvement of nasal obstruction. The wide variation in the patient's nasal anatomy and aesthetic desires make this surgery a difficult one. Throughout time, variable techniques have been described, like closed ones and opened ones. The last trends in rhinoplasty are the hybrid rhinoplasty and the preservation rhinoplasty techniques.

Taking into account all this, it is necessary to guide a beginner in rhinoplasty to some easier techniques and some cases with low difficulty.

Material and methods: We used the literature available in English by consulting the main medical databases (NCBI®, EMBASE®, Cochrane®), using as keywords for search: 'easy rhinoplasty techniques', 'first steps in rhinoplasty'. We analyzed the studies published in the last 15 years. Several reference books for rhinoplasty were also used.

Results: The first stage of rhinoplasty is represented by the preoperative analysis and discussion with the patient. Various questionnaires should be submitted prior to surgery to analyze the mental health status and patient expectations. The aesthetic principles of the face will be analyzed.

Open rhinoplasty techniques are perceived as easier due to the increased visibility and seem to be used more by beginners. A big hump, along with a skin of moderate thickness, without the need to correct the nose or the nasal pyramid is the most suitable case for the first steps in rhinoplasty. A combination of open and closed techniques that can be used for beginners is the open approach by transcolumellar incision.

Conclusions: Very important for a beginner in rhinoplasty is the correct selection of patients. This should include a careful psychological evaluation, and then the identification of low-difficulty surgical cases that can guarantee success at first. Open rhinoplasty with transcolumellar incision is a more accessible technique that can be used in selected cases until the surgeon has obtained sufficient experience.

Keywords: rhinoplasty, techniques, closed vs. open

INTRODUCTION

Rhinoplasty is a surgical procedure that mainly has a cosmetic role but also implies a functional one for the improvement of nasal obstruction. These surgical interventions have a big impact on facial expression and the correction of a single defect can provide a totally modified aspect of nasal pyramid. The correction can be done at the level of nasal bones (the correction of the base of the nasal pyramid), at the level of junctions between the bone and cartilage (for the nose hump) or at the level of allar cartilages (the correcting surgery of the nasal tip).

The wide variation in the patient's nasal anatomy and aesthetic desires makes this surgery a difficult one. For the surgeon, the challenge is mastering the endless number of operative techniques available (1), (2). Another major problem for a beginner surgeon is the ability to predict, before surgery, the difficulty of the procedure and the success rate of the result (2). Of course, the first step in understanding this operation is a very good knowledge of the nasal osteo-cartilaginous skeleton.

First rhinoplasties have been documented in Indian and Egyptian cultures in 18th century. Throughout time, there were described variable techniques like closed ones and opened ones. The last trends in rhinoplasty are the hybrid rhinoplasty and the preservation rhinoplasty techniques. These types of surgery allow the preservation of the structural integrity of the nose and also give the most natural aspect after the surgical intervention.

Taking into account all this, it is necessary to guide a beginner in rhinoplasty to some easier techniques and some cases with low difficulty.

MATERIAL AND METHODS

We used the literature available in English by consulting the main medical databases (NCBI®, EMBASE®, Cochrane®), using as keywords for search: 'easy rhinoplasty techniques', 'first steps in rhinoplasty'. We analyzed the studies published in the last 15 years. Several reference books for rhinoplasty were also used.

Using the data from the literature, we described the correlation between the types of nasal deformities and the difficulty of correcting them. We have summarized the simplest rhinoplasty techniques described so far.

RESULTS

Choosing the right patient

The first stage of rhinoplasty is represented by preoperative analysis and discussion with the patient who must have the following results: determine what the patient dislikes about his/her nose, perform an independent nasal analysis (physical exam), identify the anatomic etiologies of the cutaneous deformities, and overlap the two assessments so that patient and surgeon agree on a surgical plan (3).

Rhinoplasty is considered more than a surgical procedure alone, it is also referred to as 'psycho-surgery'. Successful rhinoplasty operations generally improve the health related quality of life, self-esteem, anxiety symptoms in people with good mental health. However, psychological results are not satisfactory in patients with significant depressive symptoms, severe personality disorders and psychosis. The assessment of decisiveness and psychology of the patients and exclusion of inappropriate patients with significant psychopathology before the surgical procedure are crucial for successful outcomes. Different questionnaires may be used before the operation to certify mental health status (4). The patient perspective in

outcome assessments can be measured using patient-reported outcome instruments, like FACE-Q scale (5).

Next, the aesthetic principles of the face will be analyzed. The nasolabial angle should be larger than 90° and 100° for male and female patients respectively. The nasofrontal angle is between 36 to 38 degrees. The aesthetic range of the nasomental angle is 120 to 130 degrees. In profile the columella should be 2-3 mm below the inferior border of the nostril and a double break of the columella as well as a slight depression in the supra-tip (supra-tip break) are also found to be pleasing, especially in women. These proportions can be used for guidance, but ethnic variability must also be taken into account (6).

Nabil Fanous et al. divided the nose into 3 levels of difficulty depending on the profile view, the frontal view and the thickness of the skin (2). These are described in Table 1.

Table 1. Nose difficulty depending on the profile view, the frontal view and the thickness of the skin

	Easy nose	Medium nose	Difficult nose
Dorsum	Big hump	Medium hump	Stright dorsum/saddle deformity
Skin	Average	Average	Very thick/thin
Tip	Mild/moderate problems	Mild/moderate problems	Severe recession, drooping, width
Pyramid	Mild/moderate problems	Mild/moderate problems	Very wide, thin, deviation

Aspects related to surgical techniques

One of the most confusing dilemmas in rhinoplasty is deciding on what technique to use to obtain the best results: open vs. closed. The practical difference between the two techniques is small, but the results are important. The open technique uses an incision made in the columella that allows the nasal skin to be lifted off the tip of the nose, allowing a greater operating field with a direct view of the nasal structure, resulting in improved precision in modeling the cartilages (more precision for difficult noses and when altering the nasal structures for more complex cases). Without the columellar incision, the closed technique allows for faster operation and less swelling during the recovery period.

As sequence of the surgical steps, it is recommended to first correct the nasal septum and then the external skeleton, and osteotomies in the dorsum should be performed before lateral osteotomies (7).

A study published in 2005 based on a rhinoplasty questionnaire about open and closed rhinoplasty approaches, completed by 178 surgeons, shows that younger surgeons perform open rhinoplasty more frequently than older surgeons for all procedures. Also for residents, 20% primarily learned the closed approach, and 60% primarily learned the open one.⁸ The indications for open rhinoplasty are: difficult tip surgery, crooked nose deformity, saddle nose deformity, cleft-lip nasal deformity, secondary rhinoplasty requiring complex structural grafting, septal perforation repair, selected nasal tumors. The endonasal approach may be used for: conservative profile reduction, conservative tip modification, selected revision rhinoplasty patients (8),(9).

The minimum number of procedures required to achieve proficiency in open rhinoplasty ranged from 20 to 100 with mean of 76.66 and in closed rhinoplasty from 40 to 200 with mean of 106 shows a study published by Yeoleker A. and Qadri H (10).

A closed rhinoplasty surgery that allows to visualize the entire cartilage frame of the tip and nasal septum is the marginal technique or open rhinoplasty without transcolumellar incision described in 1990 by Guerrerosantos, together with the extramucous technique. Using the marginal incision technique, the surgeon could correct the alar cartilages with "ad hoc" suture stitches, for the cases where a better tip projection is needed or a bulbous tip requires accentuation of the dome's angle. Applications such as hump resection, cephalic

excision from the inferior cartilage, caudal septum excision, lateral osteotomy, thinning of the skin, graft taken from the septum, cartilage grafting to the inferior lateral cartilage, interdomal suture, and supradomal cartilage graft can be performed easily using this method (11),(12).

How can I be better?

According to Rollin Daniel, a few principles that can improve your learning curve are Pre-op Photo Analysis, Write Out the Op Plan, Nasal Aesthetics Analysis and Anatomy, Intraop Instruments and Photos, Op Diagrams and Questions, Frequent post op Visits and Photos, Revisions, Reading and Meetings, Visit other surgeons/find a mentor, and give a presentation/write a paper (13).

Pietro Palma recommends that the first step a novice surgeon should take is to take part in anatomical dissections, preferably on fresh, frozen specimens. The second stage of development should include attendance at a recognised training fellowship programme, possibly with qualifying examinations at the end of the apprenticeship. The long learning curve mandates ongoing attendance at conferences, revision of anatomical knowledge and, importantly, seeking the assistance of senior surgeons through various mentorship programmes (14).

CONCLUSIONS

Rhinoplasty is considered to be one of the most challenging procedures in otolaryngology head and neck surgery. Meticulous planning and excellent surgical skills are pre-requisites for reproducible good outcomes. Patient selection must be done very carefully to obviate not only physical, but also psychological postoperative complications.

In the first stages of practice, surgeons must select the patients who have obvious deformities that can be easily corrected using surgical techniques that the surgeon knows. Declining surgery for complex cases should not be seen as a sign of weakness.

Open rhinoplasty with transcolumellar incision is a more accessible technique that can be used in selected cases until the surgeon has obtained sufficient experience.

The learning curve is long, protracted, and not to be taken lightly.

Compliance with Ethics Requirements:

"The authors declare no conflict of interest regarding this article"

"The authors declare that all the procedures and experiments of this study respect the ethical standards in the Helsinki Declaration of 1975, as revised in 2008(5), as well as the national law. Informed consent was obtained from the patients included in the study"

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