

Primary Rhinoplasty



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KEYWORDS

- Spreader grafts • Autospreader flaps • Open approach • Endonasal approach • Costal cartilage
- Pediatric nasal surgery • Fillers in rhinoplasty • Nonsurgical rhinoplasty

KEY POINTS

- Spreader grafts and other proven methods to manage middle vault deficiencies should be prudently applied in patients at risk of middle vault insufficiency.
- The open and endonasal approaches should both be part of the rhinoplasty surgeon's armamentarium.
- Corrective nasal surgery should be performed even in the very young patient to restore form and function.
- The costal cartilage donor site should be considered when it presents as the optimal donor site in rhinoplasty.
- Fillers can be judiciously used to temporarily correct limited deficiencies in rhinoplasty. Sound principles of application should be followed to limit the risk of complications.

INTRODUCTION

Rhinoplasty is among the most frequently performed cosmetic and elective procedures. This phenomenon is documented in the results of various professional societies' surveys.¹ Along with this frequency, significant advancements have been made in rhinoplasty over the last few decades in the realms of diagnosis, analysis, the development of new surgical technique, and refinements in execution.

Although there are some widely shared and universally recognized aspects of this craft, there are many differences in technique and philosophy regarding rhinoplasty surgery that are reflected in presentations and in print. In this report, several of these current controversies and differences of opinion are examined in an effort to understand and to lend clarity. In many instances, there remains no right or wrong position, and the written opinion expressed on a particular topic is the working opinion of the author based on personal

experience and consideration of the viewpoint of other surgeons.

The topics that will be addressed here are the performance of the open approach versus the endonasal rhinoplasty approach, the use of spreader grafts and autospreader flaps in the management of the middle vault in rhinoplasty, corrective rhinoplasty in the younger patient, the use of the rib and other cartilage donor sites for grafting in rhinoplasty, and the use of filler materials in rhinoplasty.

THE OPEN APPROACH AND THE ENDONASAL APPROACH IN RHINOPLASTY

In considering this topic, several questions might be entertained, for instance:

1. Is the endonasal approach "outdated?"
2. Is the open approach "better?"
3. When should one consider doing an endonasal approach? When should one consider doing an open approach?

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4. Is the endonasal approach still being taught at an adequate level?

The open rhinoplasty technique has become exceedingly popular. Advantages to this technique include the direct visualization and direct access to structures when executing rhinoplasty maneuvers.² Alternatively, others note the disadvantages of the open approach to include the resultant increased swelling of the nose, the transcolumellar scar, possible vascular compromise of the skin, and the unnecessary dissection of much of the nasal anatomy.³⁻⁵

Passionate discussions between individuals who use the open approach versus those who prefer the endonasal approach are long past in most professional circles; the validity of each approach has been shown.⁶ Surgeons commonly practice in a manner consistent with their early training as modified by their additive experience. As in many similar surgical matters, the surgical approach used by an experienced surgeon is the result of these factors in addition to the influence of the tasks at hand and the complexity of a particular operation.

For instance, when the rhinoplasty situation is simple, as when minimal changes are desired, an endonasal approach may be most efficient and appropriate (Fig. 1). In another example in which several challenges exist, but the nose is generally symmetric and straight, an endonasal approach again would be appropriate (Fig. 2). When the task at hand is more complex because the patient's nose was previously traumatized, is markedly asymmetric, is crooked, or has a congenital deformity, an open approach may be the most appropriate choice (Fig. 3). Through the open approach, the surgeon can usually exert more control over the anatomy as it is altered in rhinoplasty. These observations above are reflected in numerous presentations and articles.⁷⁻⁹

The most pertinent factor in the endonasal versus the open approach dynamic may be the potential negative impact any bias might have on teaching. Optimal teaching may be adversely influenced if the mentor is an ardent advocate for only one of the approaches. Ideally, facial plastic surgeons should be taught both approaches. The student will then have the requisite surgical acumen to decide on whether an open or endonasal approach is to be used by the consideration of the goals and challenges of each particular case, rather than a limiting prejudice of a teacher.¹⁰

THE USE OF SPREADER GRAFTS AND THE MANAGEMENT OF THE MIDDLE VAULT

The nasal sidewall must maintain adequate dimensions to support the airway and the anatomic

contour of the nose. This integrity of the middle vault depends on several factors, including the actual dimensions and relationships of the lateral nasal wall anatomic structures, the intrinsic resilience and strength of the structures, and the stabilization of the structures afforded by the overlying nasal musculature. The anatomy and physiology of the nasal valve portion of the middle vault have been recognized for several decades. The negative consequences resulting from the disruption of the relationships between the septum and the upper lateral cartilages are recognized and caution is expressed.^{11,12}

Middle vault collapse manifests itself as airway obstruction, an aesthetic deficiency in which there is a noticeable disruption in a pleasant contour of the patient's nasal sidewall or both. Patients may present with an inverted V-like deformity that is similar to that seen in saddle nose deformity.

It has been noted in rhinoplasty that there are benefits to recognizing middle vault insufficiency preoperatively and to preventing the iatrogenic creation of a middle vault problem during surgery. Several clinical situations exist in which middle vault insufficiency is commonly seen. The first case is a developmental insufficiency in which a patient has a nasal middle vault that is overly too narrow or has cartilages that are intrinsically too thin or weak to maintain an adequate shape of the middle vault at rest and during inspiration. Another instance is insufficient support of the middle vault after trauma when there has been an avulsion or scarring of the upper lateral cartilage and an iatrogenic collapse of the cartilaginous nasal sidewall. Finally, nasal vault insufficiency may result after nasal surgery in which there has been a disruption of the cartilaginous support of the nasal sidewall or a failure to adequately preserve support in a nose that has anatomic features that might contribute to a tendency to develop middle vault insufficiency.¹³

There is a recognized benefit to stabilizing the middle vault by one of several methods. The management of the middle vault is recommended when there will be a significant surgical manipulation of the nasal dorsum or lateral nasal walls such as with osteotomies or hump reduction. Spreader grafts are found to be a reliable method of addressing both the aesthetic and the functional sequelae of middle vault collapse.¹⁴ Since their introduction, the use of spreader grafts has become exceedingly popular in both aesthetic and functional surgery of the nose. Opinions differ, however, about whether the placement of spreader grafts serve primarily an aesthetic or functional role.¹³⁻¹⁵

Several points of significant controversy surround the use of spreader grafts. These are

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