

# Has the Pendulum Swung Too Far?

## *Trends in the Teaching of Endonasal Rhinoplasty*

**M**EDICINE, AND surgery in particular, is trending toward less invasive procedures, reduced morbidities, and quicker recovery times. Cholecystectomies that used to be performed through a large abdominal incision and required a 7-day hospital stay are now done laparoscopically, which allows patients to be home by that evening. As simpler, less invasive, more effective treatments have been developed, many procedures that were once common no longer exist.

For better or worse, the patients of today expect minimally invasive procedures. This trend is not limited to general surgery but also exists in aesthetic medicine. The 15% decrease in cosmetic surgical procedures over the last 2 years may not be the sole result of the poor economy.<sup>1</sup> The tremendous popularity of fillers and neurotoxins has resulted in many patients who expect all cosmetic procedures to be performed with effective and immediate results. Additionally, the popularity, although arguably a fad, of short scar facelifts, minilifts, and the like cannot be denied.

So, with the trend in medicine toward a less invasive procedure that offers equivalent, if not superior, efficacy and quicker results, how does rhinoplasty fit in? Traditionally, patients are instructed that the healing period following rhinoplasty can last up to 1 year. However, over the past couple of decades, an emphasis on building structurally sound noses that stand the test of time has seen rhinoplasty evolve into a bigger procedure, with more surgery, operative time, and potential for prolonged edema. In the appropriate candidate, if the predictability and reliability of the endonasal approach can equal that of an external approach, is it time to revisit the endonasal approach?

At one time, the endonasal approach to rhinoplasty was the one predominantly taught and performed. Generations of physicians were trained in transcartilaginous, intercartilaginous, and delivery approaches to rhinoplasty with only minor modifications from the teachings of our predecessors. In the late 1970s and early 1980s, the transcolumellar external rhinoplasty approach gained popularity. The openness of the procedure allowed a versatile approach to the nose with greater exposure of the nasal cartilages, which proved to be a superior method for complex revision work and a better teaching tool.<sup>2</sup> The last decade has seen external rhinoplasty become the predominant method used in rhinoplasty.<sup>3</sup> Additionally, as leaders in our field turned to the external approach, the training of facial plastic surgeons in this approach followed, and it appears that the endonasal approach is rarely taught today.<sup>4</sup> It is likely that a generation of facial plastic surgeons may not be proportionally educated in the endonasal approach to rhinoplasty.

Modern cosmetic rhinoplasty and internal incision rhinoplasty are traditionally attributed to German physician Jacques Joseph.<sup>5</sup> Joseph was aware that cosmetic surgery was centered on treating the psyche of the patient.<sup>6,7</sup> Many of Joseph's patients were not accepted into German society owing largely to their ethnicity, so by having physical features that were identifiers of one particular ethnic group altered, individuals could come to more closely resemble an average person in that country at the time.<sup>7</sup> Positive patient satisfaction as the outcome is a concept that our predecessors recognized as the primary objective of cosmetic medicine.

Surgeons flocked to Berlin to learn from Joseph. While they absorbed his knowledge and sharpened their new skills, these early pio-

neering surgeons gained experience, became experts, and developed a modern procedure that would shape attitudes, careers, and, arguably, a generation.<sup>7</sup>

Perhaps the most recognized teacher of rhinoplasty in the United States, at least for the otolaryngologist, was Samuel Fomon, an anatomist who traveled to Joseph's clinic in the 1920s. Fomon, a dedicated and determined explorer, reportedly persuaded Joseph's nurse, by offering to pay her \$50, to come in after hours and draw sketches of Joseph's coveted tools.<sup>6</sup> Fomon was an incredibly talented teacher who was known to explain difficult concepts in an easy-to-understand manner.<sup>8</sup> To share his acquired knowledge, he set up courses around the country; he is responsible for bestowing the gift of rhinoplasty skills upon well-known physicians such as Morey Parkes, Irving Goldman, Jack Anderson, Maurice Cottle, and others. Rhinoplasty became part of the curriculum taught to young doctors in multiple specialties and to residents-in-training across the country.

However, rhinoplasty was mostly based on theories of reduction and prediction. Precise cartilage excisional maneuvers were expected to result with predictability to a certain degree of rotation, narrowing, or projection. While surgeons were enthusiastic and full of theoretical knowledge, the intricate nuances of the operation perhaps were not being properly translated. Additionally, as endonasal rhinoplasty was generally the only method taught, eager-to-please physicians may have extended the criteria and attempted to achieve heroic results. Unfortunately, patients whose noses had a difficult degree of deformity, who would not be good candidates for a limited-access rhinoplasty by the standards of today, were often left with untoward outcomes. A new language began to take shape that was

defined with names such as alar notching, inverted "V," and bossa formations to describe such peculiar postsurgical deformities. As a result, too many of the early procedures produced unsatisfactory outcomes.<sup>9</sup>

The time was ripe for the development of the external nasal approach. Wilfred Goodman, an otolaryngologist from Canada, reported on an open approach to rhinoplasty.<sup>10</sup> The external approach allowed for greater visibility<sup>11-13</sup> through presentation of the underlying cartilages by performance of an external columellar incision and degloving of the soft tissue envelope. Irregularities that surgeons were previously unable to properly address in endonasal rhinoplasty were now easily performed and taught to others.<sup>14</sup>

However, while being invaluable and allowing for proper correction of difficult nasal abnormalities, precise cartilage positioning and fixation resulted in increased procedural time,<sup>15</sup> intraoperative edema, and secondary defects that are difficult to correct.<sup>16</sup> This was especially true for the novice surgeon who had recently entered practice and had repeatedly watched his or her mentors make such surgical procedures seem easy. In external rhinoplasty, it most often became necessary to destabilize the nose before correction. More surgical grafts became essential to fixate the tip, middle vault, and alar margins. In addition, while the grafting techniques increased nasal strength, they also increased stiffness and often caused the nose to morph even further from its preoperative condition. Hence, while patients were thought to look better in a static context, such as photographs, noses in real-life contexts occasionally did not appear natural-looking. As a result, it has not been uncommon in the early stages of recovery for a patient to experience discontent.

Perhaps some patients would be better treated with less-invasive surgery through an endonasal approach. While the endonasal approach is not indicated in all patients, neither is the external approach. As Joseph knew so well, the rhinoplasty procedure is about making the patient happy, and many

patients who request rhinoplasty are not interested in a completely different nose. Rather, minor adjustments may be all they desire. Patient involvement in the decision-making process is imperative.<sup>17</sup> It is not uncommon, following intense listening to the desires of a prospective patient, to discover that a mild dorsal shave, slight volume reduction of the tip, and subtle hint of upward rotation is all that is desired for optimal patient satisfaction. If so, it may be easier and more appropriate to provide these results via an endonasal approach.

Also, at times, what the surgeon or casual observer recognizes as a good outcome is not consistent with the discernment of the patient. It is not uncommon for a patient with a 20° leftward curve in his or her nose to request nasal straightening. If, following a minimally morbid endonasal approach, the nose is straightened but still deviates 5° to the left, the patient is frequently happy with the results nonetheless. However, if an attempt is made to completely straighten the nose through a more invasive external approach that uses a total septal replacement and, following the procedure, the nose (which takes longer to heal) is much straighter but slightly overcorrected to the right by 2°, the patient is frequently unhappy with the results. However, when a patient is used to seeing his or her nose deviated to the left, a correction of 75%, even if the nose continues to curve leftward, can make a patient pleased with his or her appearance. However, if the nose starts to curve the other way, even if only slightly, the patient is typically unhappy, because the nose would then be deviating in a direction to which the patient is not accustomed.

Nevertheless, to this day, the external approach remains the primary form of rhinoplasty being taught in fellowships. We surveyed all graduates of American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS)-approved fellowship programs over the last 10 years. A 4-item survey was approved and sent out by the AAFPRS to 356 recent graduates of their approved fellowship programs. The surveyed physicians were selected if

they had graduated between 1997 and 2007; they were asked to return their response by e-mail or fax. Members were asked what year they finished their fellowship, what percentage of their rhinoplasties were done through an external approach vs through an endonasal approach, how this trend has changed since they finished their fellowship, and what percentage of rhinoplasties they observed during fellowship performed via an external approach and how many via an endonasal approach.

Our findings revealed that a majority of institutions are teaching primarily 1 approach, and this is what a generation of AAFPRS fellowship trainees are learning and practicing. One hundred thirty-three surveys were completed, which revealed that during fellowship training the majority of respondents (57.6%) observed external rhinoplasty more than 75% of the time, with 83.3% observing it more than 50% of the time.

Once in practice, 72% of the graduates performed external rhinoplasty 75% to 100% of the time and 15.9% performed it 50% to 75% of the time. Hence, the vast majority, 87.9%, performed external rhinoplasty as their primary approach.

So why, collectively, are fellowship programs training mostly in only 1 approach? It may be that fellowship training centers are frequently tertiary centers to which patients with more difficult nasal anatomy are referred and, hence, the endonasal approach is rarely indicated, or perhaps the exposed anatomy of such patients is more appropriate for teaching purposes. Undoubtedly, there are certain indications, such as a severely deviated middle vault and a distorted nasal tip, that require an external approach. However, for the graduates trained primarily in 1 approach, who perform mostly primary rhinoplasty, it is conceivable that too many noses are undergoing too much surgery. Perhaps there are many patients that could benefit from the decreased morbidity commonly associated with less-invasive surgery.

Endonasal rhinoplasty, although not indicated for all noses, is probably underused for many qualified

candidates. It has been the experience of the authors, as well as others,<sup>18</sup> that the endonasal rhinoplasty approach can deliver fantastic results while minimizing procedural time, intraoperative bruising, and swelling, and leaving significant cartilaginous native attachments in place. In addition, subtle shaving and modifications made to the dorsum can be viewed in real time. Minor millimeters of change in the tip can be visualized accurately with the nasal skin intact. Additionally, thanks to what we have learned from the external approach, endonasal rhinoplasty is no longer a primarily reductive procedure. Grafting techniques that have been perfected in the external can be adapted to the closed, fixating tip as well as the middle vault, and can aid in alar positioning.<sup>19-21</sup> The result is a stable, well-constructed nose that will stand the test of time. When done appropriately, the modified nose is still natural-looking and remains within the aesthetic context of the face, rather than being drastically different from the original nose.<sup>22</sup> Thus, patient satisfaction tends to be realized sooner, and referral of the surgeon to friends and family is common.

Conceivably, endonasal rhinoplasty should not be relegated to the graveyard of teaching, but in fact could be taught after certain prerequisites are understood. Understanding the desires of the patient is paramount. As facial plastic surgeons, we can be overly focused on ideals when minor alterations are all that is necessary to achieve patient sat-

isfaction. At times, it may be easier and more appropriate to provide these results with an endonasal approach.

While the external approach to rhinoplasty is by far the most commonly taught method, many primary rhinoplasty patients may be treated as well or better through endonasal access. Perhaps the benefits of this approach deserve equal attention during residency and fellowship training.

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# Measuring Outcomes in Nasal Surgery

## Realities and Possibilities

**M**ANY DESIRE outcome measurements in surgery, but few can agree on the measuring tools, and fewer yet desire to be measured. This conflict underlies the quandary of measuring outcomes in any surgi-

cal disease process, perhaps more so in the case of surgical procedures that address the form and function of the nose. Nasal procedures that address functional and/or aesthetic concerns—septoplasty, rhinoplasty, nasal valve surgery, turbinioplasty, and septorhinoplasty—are oftentimes

so intermingled in their purposes and proposed clinical outcomes that the success of the intervention can be difficult to quantify. Yet the health care and academic environments often demand clear and distinct measurements for comparisons, reimbursements, research purposes, and certifications.