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Endonasal Rhinoplasty Alters Nasal Anatomy Without Resulting in Visible Scarring

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ABSTRACT

Endonasal rhinoplasty, or closed rhinoplasty, is a surgical technique employed to alter the nasal architecture for cosmetic or functional reasons while avoiding visible scarring. The primary benefit is the attainment of natural results with a more rapid recovery relative to alternative approaches. This surgical technique necessitates exceptional precision and a comprehensive knowledge of nose anatomy, integrating technical expertise with an artistic viewpoint. It has demonstrated efficacy throughout time, offering numerous advantages, including decreased postoperative edema and a shorter recovery duration. This article elucidates the endonasal rhinoplasty procedure, emphasizing its significance and efficacy without juxtaposing it with open rhinoplasty, as both possess distinct indications. It underscores the necessity for surgeons to proficiently learn both techniques to offer solutions customized to the specific requirements of patients. A clinical case is described with a 21-year-old female patient who desired enhancement of her nasal profile due to a dorsal hump and a ptotic tip. A closed rhinoplasty was conducted under general anesthesia in a suitable surgical environment, resulting in a pleasing aesthetic outcome and a smooth postoperative recovery. Presently, endonasal rhinoplasty is a pivotal method in the worldwide movement of preservation rhinoplasty, emphasizing the maintenance of nasal structures to guarantee enduring and aesthetically pleasing outcomes.

Keywords: Endonasal Rhinoplasty, Preservation Rhinoplasty, Rhinoplasty.

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INTRODUCTION

Endonasal rhinoplasty, or closed rhinoplasty, is a surgical method that has evolved due to its aesthetic and practical advantages. In contrast to open rhinoplasty, which necessitates an external incision in the columella for comprehensive access to the nasal tissues, closed rhinoplasty is executed via internal incisions within the nasal cavities, thereby circumventing obvious scars and maintaining the skin's natural anatomy [1]. This method is preferred by surgeons because it minimally affects nose vascularization, resulting in a substantial decrease in postoperative edema and expedited healing for the patient. The endonasal rhinoplasty method entails creating precise incisions in the nasal mucosa to reach the osteocartilaginous tissues. Utilizing this internal approach, the surgeon can alter the nasal morphology, rectify structural anomalies, and enhance respiratory performance while preserving the integrity of adjacent tissues. An essential element of this procedure is the maintenance of nasal support ligaments and structures, which reduces the likelihood of structural collapse and guarantees more natural and enduring outcomes [2]. Due to these advantages, closed rhinoplasty has become the favored choice in many instances of both aesthetic and functional nasal surgery.

A key benefit of closed rhinoplasty is the considerable decrease in postoperative irritation and bruising relative to the open approach. The uninterrupted blood flow to the nasal skin in the columella minimizes surgical stress, resulting in expedited recovery and less patient discomfort. Moreover, the lack of an outward scar renders this approach distinctive [3]. appealing to people desiring nasal aesthetic enhancements without discernible signs of surgical procedures. These characteristics have led to the increasing popularity of closed rhinoplasty among patients and surgeons alike.

Nonetheless, closed rhinoplasty has specific constraints, the most notable being the limited access to the operative area. In contrast to open rhinoplasty, which provides complete exposure of the nasal anatomy, endonasal rhinoplasty necessitates the surgeon to perform the procedure through internal incisions, hence limiting visibility and maneuverability. This renders the technique more arduous and necessitates a substantial level of expertise and

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proficiency from the surgeon. To alleviate these challenges, advancements like endoscopes and magnification loupes have been developed, facilitating enhanced accuracy and control during the surgery, yielding outcomes akin to those achieved with the open approach. Endonasal rhinoplasty is deemed optimal for patients necessitating moderate aesthetic or functional alterations, like dorsal hump reduction, nasal tip refinement, or the rectification of minor septal abnormalities. The closed approach facilitates harmonious outcomes without requiring significant tissue manipulation. In instances necessitating extensive nasal reconstruction, such as valve collapse, pronounced abnormalities, or revision procedures, open rhinoplasty is the most appropriate choice due to the requirement for enhanced access and control over the nasal anatomy.

Recent studies indicate that closed rhinoplasty can yield functional and aesthetic outcomes comparable to those achieved with open rhinoplasty when executed by skilled surgeons. From the standpoint of patient satisfaction, both methods exhibit comparable success rates; however, closed rhinoplasty is generally favored by individuals desiring a more expedited recovery and reduced surgical intervention. Furthermore, individuals receiving endonasal rhinoplasty exhibit reduced postoperative pain, want fewer analgesics, and can resume their daily activities more swiftly. These findings underscore the significance of closed rhinoplasty in contemporary surgery, affirming it as an efficacious method for both aesthetic enhancement and nasal functionality.

RESEARCH ELABORATIONS

This case pertains to a 21-year-old female patient with no significant medical history who sought consultation owing to dissatisfaction with the aesthetic appearance of her nose. Her primary concern was enhancing the beauty of her nasal profile, namely the existence of a pronounced dorsal hump and mild nasal tip ptosis, which impacted her self-esteem and aesthetic impression. The initial evaluation revealed a comprehensive physical examination that identified an osteocartilaginous dorsal hump and a nasal tip with a downward inclination, leading to a less harmonious nasolabial angle. No notable functional changes, such nasal blockage or septal abnormalities impacting respiration, were detected. To facilitate optimal

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surgical planning, pictures were captured from multiple angles to evaluate the nose's proportion relative to the rest of the face and identify required alterations. Standard preoperative examinations were conducted to eliminate any medical contraindications. Following an extensive dialogue concerning surgical alternatives, risks, and anticipated outcomes, a closed rhinoplasty was selected, including dorsal hump correction, nasal tip elevation utilizing a cartilage graft from the nasal septum, and osteotomies to realign the nasal bones for enhanced projection.

The treatment was conducted in a properly equipped operating room under sterile conditions with continuous anesthesia monitoring. General anesthesia was employed to guarantee patient comfort and reduce intraoperative pain. Prior to the intervention, antisepsis was conducted using an iodine solution, and a sterile surgical field was created. Infiltration of 1% lidocaine with epinephrine at a 1:100,000 ratio was used at critical incision and dissection sites to minimize intraoperative hemorrhage and improve anatomical visibility.

A transfixion incision was performed in the nasal mucosa at the membranous septum, continuing laterally between the alar and triangular cartilages, facilitating access to the osteocartilaginous tissues of the nasal dorsum. Meticulous subperichondrial and subperiosteal dissection was conducted to guarantee adequate exposure while maintaining the integrity of adjacent tissues. A precise osteotome was employed for the controlled removal of superfluous bone and cartilage in dorsal hump repair. A surgical rasp was subsequently employed to eliminate abnormalities and enhance the nasal contour. At this point, an "open roof" deformity was noted, requiring lateral and medial osteotomies to enable adequate dorsal closure and realignment of the nasal bones. Controlled excision of the alar cartilage was executed for nasal tip modification to improve its definition. Transdomal sutures with absorbable material were employed to enhance and elevate the tip. A cartilage graft was extracted from the nasal septum, contoured, and firmly affixed to the tip to enhance support and stability. Cephalic rotation was executed to enhance face aesthetics and refine the nasolabial angle. Following the procedure, the incision was sealed using absorbable sutures. An external thermomoldable nasal splint was utilized to offer structural support and protection during the healing process.

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RESULTS AND DISCUSSIONS

During the initial postoperative phase, the patient exhibited a positive progression without indications of significant hemorrhage or pulmonary problems. No substantial hematoma or severe ecchymosis was noted in the nasal area, and postoperative edema was moderate, consistent with the anticipated outcomes for this treatment. Pain treatment was accomplished with prescription analgesics, and anti-inflammatory medication was given to diminish edema. Prophylactic antibiotics were administered to avert infections. Rigorous postoperative care was recommended, encompassing the use of cold compresses on the perinasal region, abstention from vigorous physical activity, and limited nasal manipulation to avert undesirable tissue displacement during the healing process. In the initial postoperative week, the patient experienced slight discomfort and a sensation of nasal congestion attributed to internal swelling, which gradually subsided. Mild infraorbital ecchymosis was noted, linked to osteotomies, and began to resolve spontaneously by the fifth day. No indications of infection or respiratory distress were identified.

During the seven-day follow-up appointment, the external nasal splint and absorbable sutures were extracted. Following the removal of the splint, satisfactory healing was noted, accompanied by a well-defined nasal contour that complemented the patient's facial profile. The projection of the nasal tip was enhanced, and the correction of the dorsal hump was adequate, with no discernible imperfections on the skin surface. Nasal symmetry was ideal, with no structural anomalies or lateral wall collapse. During the 15-day and 30-day follow-up appointments, the patient exhibited a gradual decrease in nasal edema. Residual inflammation near the nasal tip remained within normal limits because of the increased tissue density in this region, with a propensity to diminish during the ensuing months. The patient reported considerable satisfaction with the outcomes, indicating a major enhancement in self-esteem and personal confidence. During the three-month postoperative evaluation, the conclusive assessment verified the stability of the outcomes. The nose seamlessly merged with the other facial features, preserving appropriate tip projection and definition. No delayed problems, such as significant fibrosis, dorsal abnormalities, or functional respiratory limitations, were seen. The patient experienced no discomfort or nasal obstruction, validating the procedure's success both aesthetically and functionally.

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Figure 1. The patient is evaluated before to the rhinoplasty procedure, exhibiting a pronounced dorsal hump and a sagging nasal tip, resulting in an asymmetrical profile. These attributes indicate the necessity for a regulated excision of the osteocartilaginous dorsum and a structural alteration of the nasal tip to enhance its projection and rotation.

Figure 1

Figure 2. During the intraoperative phase, a comprehensive dissection of the nasal tissues reveals the alar cartilages. The nasal return is being trimmed to enhance the refinement and definition of the nasal structure, hence improving the projection and symmetry of the tip. The application of forceps and surgical retractors enhances tissue manipulation and improves the sight of the surgical field. The technique emphasizes the structural alteration of the cartilage to get an enhanced contour, eradicate abnormalities, and guarantee a seamless transition between the nasal tip and the dorsum.

Figure 2

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Figure 3. The patient is evaluated post-rhinoplasty, exhibiting a symmetrical nasal dorsum devoid of any visible hump, signifying that a meticulous resection of the osteocartilaginous prominence was executed. The nasal tip exhibits sufficient projection and rotation, resulting in a harmonious nasolabial angle aligned with the facial profile. The airway is safeguarded by an endotracheal tube, indicating that the treatment was conducted under general anesthesia.

Figure 3

Figure 4. The patient is monitored in the initial postoperative phase with an external splint on the nasal dorsum, which ensures stability and mitigates inflammation, facilitating optimal tissue repair. A moustache-shaped dressing is affixed to the nasal base to manage any potential postoperative bleeding that may arise in the initial hours following the treatment.

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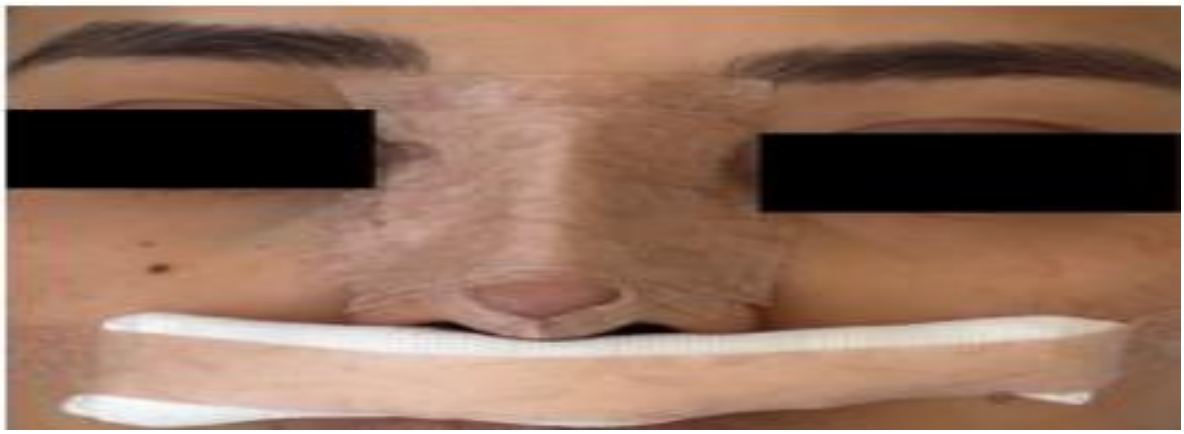

Figure 4

Endonasal rhinoplasty, or closed rhinoplasty, is a surgical method in which all incisions are performed within the nasal cavities, hence preventing noticeable exterior scars. This method has been extensively utilized and has demonstrated efficacy in rectifying numerous nasal abnormalities. A primary benefit of endonasal rhinoplasty is the lack of outward scarring, leading to enhanced cosmetic satisfaction for patients. Moreover, as it does not necessitate the elevation of the nasal skin, vascular supply is maintained, potentially facilitating a more rapid recovery with reduced problems. This approach may have limits regarding visibility and access to certain nasal components, complicating the correction of intricate abnormalities.

Rhinoplasty, irrespective of the technique employed, seeks to increase the aesthetic appearance of the nose while also preserving or improving respiratory function. Simultaneous procedures, such as repairing a deviated nasal septum or reconstructing internal nasal valves, can enhance nasal function. Endonasal rhinoplasty is an efficient and minimally invasive method for rectifying nasal abnormalities, providing benefits such as the elimination of external scars and expedited recuperation. Nonetheless, its implementation must be meticulously evaluated according to the unique attributes of each patient and the intricacy of the deformity requiring treatment. Collaboration between the surgeon and the patient, together with meticulous preoperative preparation, is crucial for attaining optimal cosmetic and functional outcomes.

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CONCLUSIONS

Endonasal rhinoplasty is an efficacious surgical method that facilitates nasal structural alteration using a minimally invasive procedure, hence diminishing postoperative edema and expediting recovery duration. In contrast to open rhinoplasty, this technique eliminates the need for exterior incisions, hence preventing apparent scarring and maintaining the vascular supply to the nasal dermis. The patient exhibited a positive postoperative trajectory, characterized by a simple recovery and good outcomes in both aesthetic and functional domains. A primary accomplishment of this technique was the effective rectification of the dorsal hump and the augmentation of nasal tip projection. The implementation of preservation procedures facilitated the maintenance of nasal structure and stability, hence reducing the risk of collapse or enduring abnormalities. The patient reported a notable enhancement in self-esteem and aesthetic perception, highlighting the beneficial psychological effects of these operations on patients' quality of life.

The surgery's outcome was impacted by meticulous preoperative planning, precise anatomical evaluation, and the judicious choice of surgical method. Elements such as regulated osteotomies, cartilage transplants, and deliberate sutures were essential in attaining facial symmetry while preserving respiratory function. These factors drive home the importance of surgical proficiency and the tailoring of treatment to meet individual patient requirements. Despite the constraints of endonasal rhinoplasty regarding sight and access to the operative field, innovations in instruments and surgical procedures have enhanced outcomes and minimized complications. The advancement of this procedure corresponds with the contemporary trend of preservation rhinoplasty, which seeks to retain the integrity of nasal tissues and guarantee more natural and stable long-term outcomes. In conclusion, endonasal rhinoplasty is a secure and efficacious option for patients with moderate nasal abnormalities desiring aesthetic enhancement without obvious scarring and with expedited recovery. The choice of this approach must rely on a thorough patient assessment and the surgeon's expertise to guarantee reliable and functional long-term outcomes. This example affirms that closed rhinoplasty is a valid and dependable choice in contemporary nasal aesthetic surgery, reinforcing its significance in attaining facial harmony and patient contentment.

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