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CASE REPORT

THE EFFECTIVENESS OF COMBINING ENDOSCOPIC SINUS SURGERY AND RHINOPLASTY

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ABSTRACT

Chronic rhinosinusitis (CRS), functional respiratory disorders, and nasal aesthetic disorders are very common disorders. The development of endoscopic sinus surgery (FESS) raises the question of the safety and effectiveness of combined surgery.

This clinical case series included 50 patients: 30 females, 20 males over 18 years of age, whose main complaints were nasal septum deviation, chronic hypertrophic rhinitis combined with atrophy of the maxillary sinus mucosa, cysts, and very few ethmoidal polyps that did not respond to drug treatment for at least 3 consecutive months.Surgical treatment was combined with functional endoscopic sinus surgery (FESS) and rhinoplasty.The incidence of postoperative complications, patient satisfaction with cosmetic and functional outcomes were analyzed. Simultaneous rhinoseptoplasty and endoscopic sinus surgery are possible without reducing the effectiveness of each of these operations. However, there are no generally accepted guidelines for the procedure, the extent of surgical intervention, and there is no generally accepted standard for assessing surgical risk.

The combination of endoscopic sinus surgery and rhinoplasty is an effective and safe method that allows solving both functional and aesthetic problems of the nose during a single procedure. Further large-scale, controlled studies will help to definitively define its advantages and limitations.

Keywords**:** chronic rhinosinusitis; concurrent surgery; endoscopic sinus surgery; postoperative outcomes; rhinoplasty

INTRODUCTION

Upper airway and nasal aesthetic surgical procedures are often performed separately: on the one hand, endoscopic sinus surgery (ESS) as a functional approach for the treatment of chronic sinusitis, polyposis, and airway disorders, and on the other hand, rhinoplasty for aesthetic and functional correction. However, in recent decades, there has been increasing interest in combining the two, given the increasing demands of patients and the development of surgical techniques.

A number of retrospective studies have examined the effect of combining functional endoscopic sinus surgery (FESS) and rhinoplasty, comparing the complication rates of the combined procedures [1-6].

The complication rate of combined FESS and rhinoplasty was as low as that of the two procedures performed separately, and the procedures could be safely performed simultaneously under optimal conditions. A major reason for delaying the combination of these procedures is the presence of severe purulent or fungal debris during FESS [7-10].

The combination of rhinoplasty and endoscopic sinus surgery (ESS) was first described in 1991 by Sheman and Matarazzo[11]. Since then, many authors have demonstrated the overall effectiveness of the combination of these two procedures.

Sinus surgery is a specialized minimally invasive medical procedure that aims to improve the removal of sinus

exudate, relieve nasal congestion, and restore normal sinus function.

Currently, sinus surgery techniques have evolved significantly and have become standard, involving the use of an endoscope, a thin tube with a light and camera that allows surgeons to view the sinus cavities and perform precise surgical procedures without external incisions, which provides numerous advantages, including reduced postoperative discomfort, a shorter recovery period, and minimal scarring.

Using the ESS method allows not only to restore normal nasal breathing, but also to preserve the anatomy of the nasal cavity and paranasal sinuses as much as possible. Such operations are easily tolerated by patients and do not require a long stay in the hospital. After the intervention, the recovery period takes about a week[12-16].

Endoscopic sinus surgery (ESS) is indicated for persistent symptoms of sinusitis, characterized by facial pain, nasal congestion, and recurrent sinusitis despite comprehensive medical treatment. Patients with chronic sinusitis, nasal polyps, or a deviated septum often have nasal airflow obstruction and recurrent infections.

Rhinoplasty is designed to address a variety of problems, including nasal deformities, structural abnormalities, and breathing difficulties, which can improve facial harmony and restore normal nasal function.

The general indications for rhinoplasty are correction of a deviated septum and improvement of the appearance of the nose.

Rhinoplasty is performed in two main ways: open and closed. In open rhinoplasty, an external incision is made in the tissue between the nostrils, which provides greater visibility of the surgical field and access to the nasal structures. In closed rhinoplasty, the incision is made inside the nostrils, which obscures the visibility of the surgical field but ensures the absence of visible scars and a shorter recovery period. The choice between open and closed rhinoplasty techniques depends on the complexity of the procedure and the patient's needs.

Rhinoplasty requires high skill and precision from the doctor, since the nose plays an important role in the overall appearance of the face1. This procedure can significantly improve the appearance and function of the nose, leading to improved patient self-confidence and quality of life. The combination of endoscopic sinus surgery and rhinoplasty has several compelling advantages, both medically and aesthetically. This integrated approach allows for the simultaneous treatment of two important problems: treating sinusitis and restoring nasal aesthetics, allowing patients to experience improved breathing, relief of sinus symptoms, and improved facial harmony, all in a single surgical session that addresses both functional and cosmetic concerns. Combining these procedures reduces overall recovery time and minimizes the risks associated with multiple surgeries, all performed under a single anesthesia.

The combined recovery also reduces overall healthcare costs.

The combination of these two surgeries should be based on a thorough evaluation by a skilled surgeon, which enhances both health and aesthetic outcomes.

Objective

To analyze the effectiveness of combining endoscopic sinus surgery and rhinoplasty by evaluating clinical outcomes, complication rates, and patient satisfaction.

MATERIALS AND METHODS

This clinical case series included 50 patients: 30 females, 20 males over 18 years of age, whose main complaints were nasal septum deviation, chronic hypertrophic rhinitis combined with thickening of the maxillary sinus mucosa, cysts, and rarely ethmoidal polyps that did not respond to drug treatment for at least 3 consecutive months.

Preoperative diagnosis includes computed tomography (CT) to assess the anatomy and extent of sinus disease(fig1,2).

Figure 1. CT shoued nasal septum deviation

Surgical treatment was combined with functional endoscopic sinus surgery (FESS) and rhinoplasty.

The following indicators were evaluated:

o duration of surgery,

o postoperative complications (bleeding, infection, nodule formation),

o improvement of respiratory function

o satisfaction with aesthetic results.

Surgical Technique

The surgeries were performed in an inpatient setting by a single surgeon under general anesthesia. All patients received intravenous antibiotics (ceftriaxone 1 g) and steroids (dexamethasone 8 mg) before surgery. Local infiltration anesthesia was also performed transorally in the dorsum of the nose, alar margin, septum, and greater palatine fossa. In the first stage, nasal rhinoplasty was

performed, followed by rhinoplasty. For the open rhinoplasty approach, an inverted transcolumbar V-shaped incision was made, and the SMAS was elevated to the posterior part of the nose.

The domes were divided in the midline, and the superior lateral cartilages were brought out laterally, creating a good septal opening.

Bilateral submucoperichondrial flaps were elevated, exposing the entire cartilaginous and anterior bony septum. The cartilaginous and bony septa were then removed by a paramedian osteotomy, separating the cartilaginous septum from the maxillary crest and breaking the bony septum as posteriorly as possible, leaving the cribriform plate and the cuneiform papilla. Curve Monosyn 4/0 and 5/0 sutures were used for peripheral plasty and alar margin sutures. Ethicon 6/0 sutures were used for the skin.

Endoscopic sinus surgery was performed through the middle nasal passage with a middle nasal antrostomy, and uncinectomy was performed using transnasal instruments and a microdebrider. Nasal suction was performed on the third postoperative day, along with removal of the nasal septum splints, and the patient was discharged home the same day. EMS was performed using a 4 mm endoscope (0, 30, and 70°). All patients received antibiotics and nasal lavage postoperatively. Postoperative endoscopic cleaning and nasal function cleaning were performed, as well as recording aesthetic changes using standardized postoperative photography. Endoscopic sinus surgery through the middle nasal passage allowed the removal of polyps or infected tissues, improving sinus ventilation while minimizing damage to surrounding structures(fig3,4). Open or closed rhinoplasty was performed respiratory function, patient satisfaction, and complications were assessed.

Figure 2. CT illustrated cyst in maxillary sinus

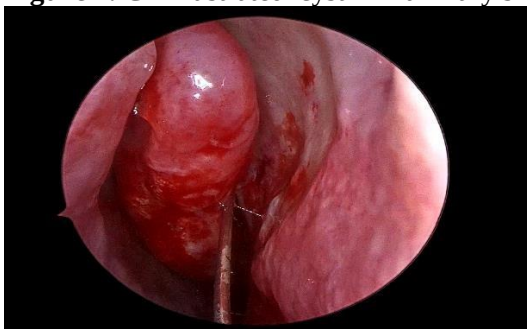

Figure 3. Endoscop illustrated cyst in maxillary sinus

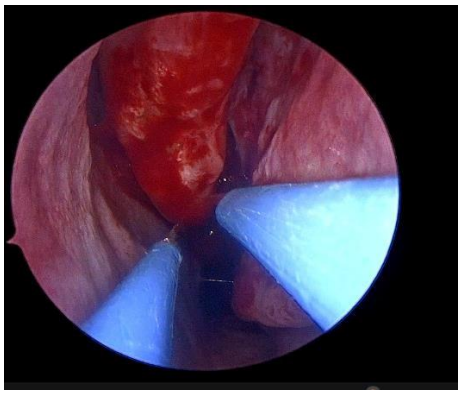

Figure 4. Endoscopic sinus surgery

RESULTS

The majority of patients experienced significant improvement in respiratory function (up to 80-90%) and a reduction in chronic sinus complaints.The aesthetic satisfaction rate was 85-95%.The overall complication rate did not exceed the average rates recorded for individual surgeries.The combined approach reduced the average time required for general anesthesia and hospitalization, as well as costs.

DISCUSSION

Combined surgery combines functional and aesthetic advantages, providing a holistic approach to both the health and psychological needs of the patient. Rhinoplasty solves cosmetic problems such as nasal asymmetry, dorsal bulges, or protruding tips by improving the overall aesthetic of the face. The integration of these functional and aesthetic surgeries in a single procedure provides a harmonious and balanced appearance of the nose, which complements facial features while ensuring nasal breathing. Combining these surgeries is more effective than performing them separately, as it reduces the total surgical and anesthetic costs and minimizes the additional costs associated with multiple hospital visits and consultations[17-19].

Patient satisfaction is also very important, as it provides both functional and improved aesthetic results. Patients experience improved nasal function, increased self-confidence, and overall satisfaction with their appearance and quality of life. Common risks and complications include bleeding, infection, anesthesia risks, postoperative scarring, nasal congestion, and altered sensation. Bleeding is a complication that occurs during or after surgery, which may require additional intervention to control.

Postoperative infection at the surgical site or in the sinuses leads to delayed healing and may require antibiotic treatment. General anesthesia carries inherent risks including adverse reactions and complications such as

nausea, vomiting, or respiratory problems. Open rhinoplasty incisions can leave visible scars, which can be cosmetically unsightly. Occasionally, some patients may experience nasal congestion or difficulty breathing due to anatomical factors or swelling after surgery. Postoperative sensory disturbances may be temporary or permanent, including numbness or changes in sensation in the nasal area. Complex surgical procedures may not produce the desired functional or aesthetic results, requiring revision or additional treatments.

While endoscopic sinus surgery is highly effective in aesthetic rhinoplasty, it is important to note that these surgeries require a highly qualified medical team, an experienced endoscopic surgeon and a plastic surgeon, and careful preoperative planning.

CONCLUSION

The combination of endoscopic sinus surgery and rhinoplasty is an effective and safe method that allows solving both functional and aesthetic problems of the nose during a single procedure. Further large-scale, controlled studies will help to definitively define its advantages and limitations.

DECLARATIONS

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Competing Interests

The authors have no competing interests to declare.

Ethical Approval

The study was approved by the appropriate ethics committee and conducted according to relevant guidelines and regulations.

Informed Consent

Not applicable

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