ORIGINAL RESEARCH

Utility of functional endoscopic sinus surgery in treatment of ethmoid polyps

Dr. Manish Kumar Tailor

Assistant Professor, Department of ENT, N C Medical College & Hospital, Panipat, Haryana, India

Corresponding Author
Dr. Manish Kumar Tailor
Assistant Professor, Department of ENT, N C Medical College & Hospital, Panipat, Haryana, India

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ABSTRACT

Background: Common teardrop-shaped growths in the nose or paranasal sinuses are called nasal polyps. Although they can grow in any paranasal sinus, the middle meatus and osteo-meatal complex region is the most preferred location. The present study was conducted to assess utility of endoscopic sinus surgery in management of ethmoid polyps. **Materials &Methods:** 85 adult patients of ethmoid polyps of both genders were enrolled. Under general anesthesia, FESSwhich includes middle meatus antrostomy, posterior and anterior ethmoidectomy, and frontal recess clearancewas scheduled. The severity of each symptom was assessed based on 4-point semiquantitative scale**. Results:** Out of 85 patients, 50 were males and 35 were females. Anosmia score was 2.64 pre- operatively and 1.36 post- operatively. Pre- operative rhinorrhoea score was 2.52 and post- operative score was 2.02, nasal congestion score was 3.84 pre- operatively and 2.40 post- operatively. Nasal hyperreactivity score was 1.94 pre- operatively and 1.12 post- operatively. A significant difference was observed ($P< 0.05$). Common complications recorded in patients undergoing FESS were synechia in 1 case, CSF leak in 2 and ocular problem in 1. A significant difference was observed ($P< 0.05$). **Conclusion:** The cases of ethmoid polyps were successfully treated with functional endoscopic sinus surgery. There were very few issues noted, including synechia, eye issues, and CSF leaks.

Keywords: Anosmia, Ethmoid polyps, Functional endoscopic sinus surgery

INTRODUCTION

Common teardrop-shaped growths in the nose or paranasal sinuses are called nasal polyps. Although they can grow in any paranasal sinus, the middle meatus and osteo-meatal complex region is the most preferred location.[1] These are frequently connected to chronic infections, particularly fungal sinusitis, and allergies. The majority of persons with nasal polyps also have post-nasal drip, rhinorrhea, sneezing, and anosmia/hyposmia.[2] Atopies, enlarged turbinates, and/or a deviated nasal septum (DNS) may be present in conjunction. In general, oral antihistamines combined with topical nasal steroid drops work quite well to relieve symptoms. Additionally, short-term systemic steroid regimens are occasionally recommended. Surgery is the last option, though, to enhance quality of life in refractory and uncontrollable situations.[3]

In addition to removing polyps, functional endoscopic sinus surgery (FESS) is a minimally invasive procedure that employs an endoscope to enhance airflow and drainage. The degree of surgery varies depending on the severity of the ailment and the particular practice of the surgeon.[4] For almost ten years, sino-nasal disorders have been treated with this approach. Benefits over traditional surgery are stated to include improved visibility into the operative field, more accurate and complete removal of the inflammatory alteration, less risk of complications, and a decreased recurrence rate.[5]The present study was conducted to assessutility of endoscopic sinus surgery in management of ethmoid polyps.

MATERIALS &METHODS

The present study consisted of 85 adult patients of ethmoid polyps of both genders. All enrolled patients were informed regarding the study and their written consent was obtained.

Parameters such as name, age, gender etc. was recorded in case history form. An experienced ENT surgeon performed a comprehensive ENT examination. The naso-ethmoid area was CT-scanned. Under general anesthesia, FESS—which includes middle meatus antrostomy, posterior and anterior ethmoidectomy, and frontal recess clearance—was scheduled. Following surgery, all patients were prescribed oral antihistamines, nasal steroid drops, and antibiotics. After surgery, a naso-endoscopy was performed during follow-up visits in the first, second, third, sixth, and year weeks.

The severity of each symptom was assessed based on 4-point semiquantitative scale: 0, no symptoms; 1,

moderate symptoms; 2, mild symptoms that slightly interfere with daily activities or sleep; and 3, severe symptoms that severely interfere with daily activities or sleep. The results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 85		
Gender	**Males**	**Females**
Number	50	35

Table I shows that out of 85 patients, 50 were malesand 35 were females.

Table II Evaluation of symptoms

Symptoms	Pre- operative	Post- operative	P value
Anosmia	2.64	1.36	0.01
Rhinorrhea	2.52	2.02	0.02
Nasal congestion	3.84	2.40	0.04
Nasal hyperreactivity	1.94	1.12	0.02

Table II, graph I shows that anosmia score was 2.64 pre- operatively and 1.36 post- operatively. Pre- operative rhinorrhea score was 2.52 and post- operative score was 2.02, nasal congestion score was 3.84 pre- operatively and 2.40 post- operatively. Nasal hyperreactivity score was 1.94 pre- operatively and 1.12 post- operatively. A significant difference was observed (P< 0.05).

Graph I Evaluation of symptoms

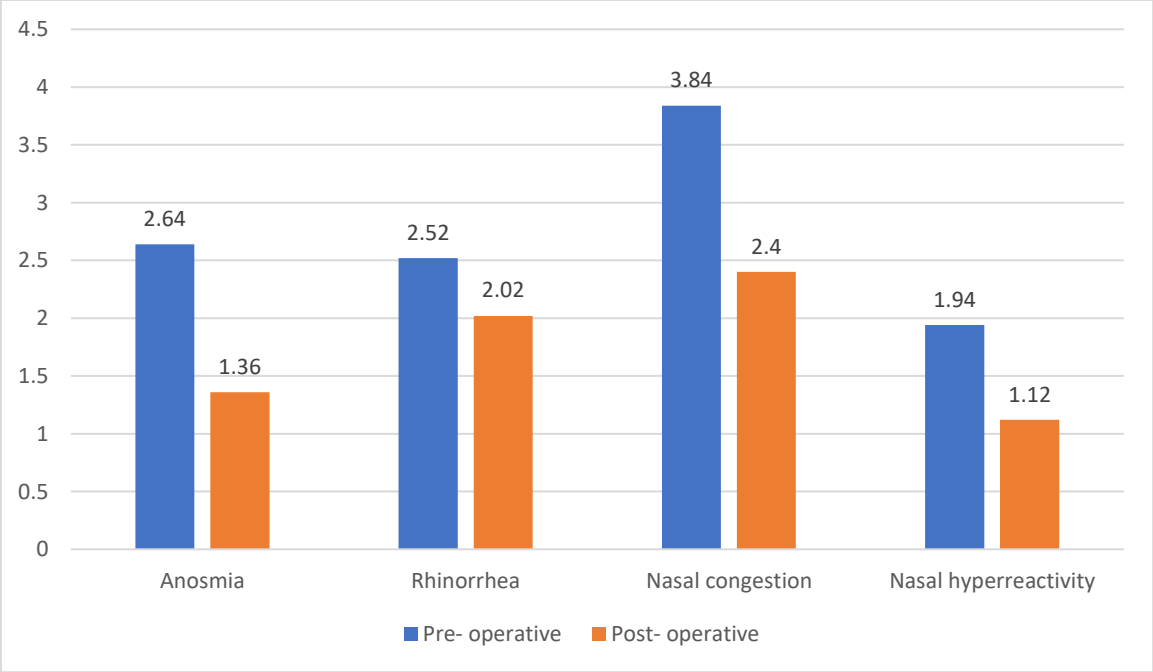

Table III Assessment of complications of FESS

Complications	Number	P value
Synechia	1	<0.05
CSF leak	2	
Ocular problems	1	

Table III shows that common complications recorded in patients undergoing FESS were synechia in 1 case, CSF leak in 2 and ocular problem in 1. A significant difference was observed (P< 0.05).

DISCUSSION

Nasal polyp growths can arise from any area of the nasal mucosa or paranasal sinuses and are spherical, soft, semi-translucent, glistening, pale, or yellow. The development of polyps has been associated with allergies, autonomic nervous system dysfunction, chronic inflammation, and hereditary predisposition.[6] A particular type of chronic rhinosinusitis known as polyposis is characterized by bilateral and multifocal polyps. The most common kind is the main form, in which the majority of inflammatory eosinophils infiltrate the polyps.[7] It can occur alone or in

conjunction with aspirin intolerance and asthma. Its prevalence is rising and now accounts for about 4% of the total population. Because of its high recurrence rate, conventional polypectomy has lost some of its allure.[8] The surgical options include external ethmoidectomy, a blind technique, intranasal ethmoidectomy, and polypectomy, which has a high recurrence rate.[9,10]FESS is now the preferred course of treatment for chronic rhino sinusitis and nasal polyposis, conditions that do not improve with strong medicinal intervention. FESS, which is quickly taking the lead as the preferred surgical treatment for nasal polyp illness, overcomes all of these drawbacks.[11,12]The present study was conducted to assess utility of endoscopic sinus surgery in management of ethmoid polyps.

We found thatout of 85 patients, 50 were males and 35 were females. Damm et al[13]evaluated how functional endoscopic sinus surgery modifies patients' symptom profiles and quality of life.Questionnaires were given to 279 patients included in the series, who underwent sinus surgery. Quality of life was restricted by chronic rhinosinusitis in 94% of all patients preoperatively and ranked as severe or intolerable in 74%. Leading symptoms of chronic rhinosinusitis were nasal obstruction in 92% and postnasal drip in 87%. Furthermore, patients reported dry upper respiratory tract syndrome in 68%, hyposmia in 66%, headache in 64%, and asthmatic complaints in 34%. After a mean postoperative follow-up of 31.7 months, an amelioration of quality of life was achieved in 85%, no change in 12%, and a deterioration in 3%. The ranking of restricted quality of life improved from "severe" to "mild" in the mean. Mainly responsible for this improvement was the postoperative decrease of nasal obstruction (84%), headache (82%), and postnasal drip (78%), which correlated significantly with nasal obstruction ($r = 0.59$), headache ($r = 0.39$), and postnasal drip ($r = 0.55$), respectively with better quality of life.

We found that anosmia score was 2.64 pre-operatively and 1.36 post- operatively. Pre- operative rhinorrhea score was 2.52 and post- operative score was 2.02, nasal congestion score was 3.84 pre-operatively and 2.40 post- operatively. Nasal hyperreactivity score was 1.94 pre- operatively and 1.12 post- operatively. Suzuki et al[14] enrolled 50,734 patients (aged $\geq$ 16 years) who underwent FESS for chronic rhinosinusitis. They focused on specific types of surgery and stratified the patients into three groups: group 1 (single sinus surgery), group 2 (multiple sinus surgery), and group 3 (whole sinus surgery). Patient characteristics and early postoperative complications including cerebrospinal fluid (CSF) leakage, orbital injury, severe hemorrhage, and toxic shock syndrome (TSS) that occurred during 1 to 2 weeks of each hospitalization were compared. The overall complication rate was 0.50%; the rates of CSF leakage, orbital injury, hemorrhage requiring surgery, blood transfusion, and TSS were 0.09%, 0.09%, 0.10%, 0.18%, and 0.02%, respectively. Ethmoidectomy combined with sphenoidotomy was associated with higher overall complication rates (1.40%). The rate of orbital injury was highest in group 2, whereas that of other complications did not differ significantly among the groups. Extent of FESS showed no significant association with overall complication rate.

We found that common complications recorded in patients undergoing FESS were synechia in 1 case, CSF leak in 2 and ocular problem in 1. Gohar and colleagues[15] documented the effectiveness of Functional Endoscopic Sinus Surgery (FESS) on 116 patients ranging in age from 18 to 60 years, encompassing both genders. While 101 (87.1%) had primary nasal polyposis, 15 (12.9%) had recurrent nasal polyposis. Clinical evaluations of the patients were conducted. Every patient had a preoperative nasal endoscopy and a CT scan of their nose and paranasal sinuses to determine the severity of their condition and to examine the surgical anatomy. During each follow-up visit, nasal endoscopy was used to assess the clinical signs of nasal polyposis. A total of 116 patients had a nasal polyposis diagnosis recorded. Of them, 41 (35.3%) were female patients and 75 (64.7%) were male. The average age of presentation was 36.7 years for females and 39.1 years for males. Within a year, only 15 patients (12.9%) experienced recurrent illness.

The limitation of the study is small sample size.

CONCLUSION

Authors found that the cases of ethmoid polyps were successfully treated with functional endoscopic sinus surgery. There were very few issues noted, including synechia, eye issues, and CSF leaks.

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