

Efficacy of Functional Endoscopic Sinus Surgery in the treatment of Ethmoidal polyps

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Citation

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Abstract

The efficacy of sinus surgery for treatment of ethmoidal polyps continues to be an issue of debate among otolaryngologists. A study was undertaken to assess the efficacy of Functional Endoscopic Sinus Surgery (FESS) in treatment of ethmoidal polyps. Thirty patients of either sex above 16 years of age, suffering from ethmoidal polyps were included in the study. The patients were discharged a day after surgery and were called for endoscopic examination during subsequent follow up. Final results were recorded 3 months after the operative procedure. The results suggest that FESS is highly effective for treatment of ethmoidal polyps with the recurrence rate being as low as 10% and with no major complication.

INTRODUCTION

Nasal polyps remain a significant challenge to the treating physician. The treatment modalities of nasal polyps encompass both medical and surgical modalities following the assessment of the patient. Surgical treatment comprises of polypectomy which has a high recurrence rate, intranasal ethmoidectomy – a blind procedure and external ethmoidectomy with its inherent complication of external scar. All these shortcomings are overcome by FESS, which is fast becoming the surgical treatment of choice for nasal polyp disease. The first attempt at nasal and sinus endoscopy was performed by Hirschmann in 1901 using modified cystoscope. Since then, many advances have been made in the field of endoscopic sinus surgery.¹

In the early 1970s, Messerklinger theory that the anatomical variations of the lateral nasal wall could cause obstruction of both drainage and ventilation of the sinuses, initiated the development of a functionally oriented surgical approach.^{2,3} The functional endoscopic sinus surgery technique provides a tool by which the clinician can accurately diagnose, meticulously and atraumatically perform surgery and precisely provide post-operative care and follow up for nasal polyp diseases. The present study was undertaken to evaluate the efficacy of functional endoscopic sinus surgery in the treatment of ethmoidal polyps.

MATERIALS AND METHODS

The present study was conducted in the Department of

Otorhinolaryngology, Pt. B. D. Sharma Post Graduate Institute of Medical Sciences, Rohtak. Thirty patients of either sex above 16 years of age, suffering from ethmoidal polyps were included in the study. Patients having antrochoanal polyp, marked deviated nasal septum, and nasal or antral growth were excluded from the study.

Initial patient work-up included detailed history taking about the symptoms and their duration. Thereafter, detailed examination including anterior rhinoscopy, posterior rhinoscopy, throat and ear examination was done. All patients were given medical treatment for two weeks in the form of broad-spectrum antibiotics, antihistaminics and local or systemic decongestants. The patients were then subjected to computed tomography scan of paranasal sinuses- both axial and coronal views. Patients were taken up for the surgery under local anaesthesia after the routine investigations like complete haemogram, urine albumin and sugar and other relevant investigations.

The extent of surgery was decided based on the findings in pre-operative CT scan of paranasal sinuses. Anterior ethmoidectomy, posterior ethmoidectomy, middle meatus antrostomy and clearance of frontal recess were performed in all the patients. Sphenoid sinus ostium was widened only if CT scan showed evidence of its involvement. Along with this any significant anatomical abnormality was also noted and taken care of during surgery. At the time of discharge from the hospital, the patients were given systemic antibiotic for 10 days along with decongestant drops. Steroid nasal

spray was advised in all cases. Alkaline nasal douching was also advised. Patients were advised follow-up after one week, six weeks and three months. Subjective assessment for symptomatic improvement was done and objective results were assessed by check endoscopy. The results were then compiled.

OBSERVATIONS

The findings in 30 cases of bilateral ethmoidal polyps undergoing FESS were recorded. It was observed that the age of patients in the study ranged from 17-65 years with the most common age affected being 30-39 years (36.7%) followed by 40-49 years (23.3%). The males were more commonly affected than females, the ratio being 2.7:1.

Nasal obstruction was the most common symptom present in 25 patients followed by nasal discharge in 23, recurrent attacks of common cold in 22, post nasal discharge and sneezing in 20 each, headache in 18 and anosmia and facial pain in 10 and 5 patients respectively. Preoperative CT scan findings of the patients are summarized in Table (1). The CT scan in 2 patients showed destruction of wall of sinuses along with areas of hyperdensities admixed with mucosal hypertrophy pointing towards fungal infection.

Intra operative findings were also recorded. Bilateral polypoidal mucosa in anterior ethmoidal cells was found in all 30 patients. Posterior ethmoidal air cells were involved in 23 subjects bilaterally and in 3 subjects unilaterally. Mucoid discharge in maxillary antrum was seen in 14 patients, pus in 4 patients, polyps and hypertrophic mucosa in 4 patients each. Sphenoid involvement in the form of polypoidal mucosa was seen in 4 patients bilaterally and in 2 patients unilaterally. Cheesy material along with polyps which on histopathological examination indicated aspergillosis was found in 2 patients. Anatomical variations in the form of accessory ostium (7 patients), bilateral concha bullosa (6 patients), bilateral paradoxical middle turbinate (5 patients) and polypoidal degeneration of both middle turbinates (5 cases) were noted. Relief in symptoms after surgery and endoscopic findings on follow up are summarized in Table II and III respectively. The recurrence of polyps was seen in 3 cases who had stopped using the steroid nasal spray. One patient presented with secondary hemorrhage ten days after surgery, which was controlled with nasal packing. No other major or minor complication was seen.

DISCUSSION

The results of 30 patients of bilateral ethmoidal polyps

undergoing FESS were analysed. The final follow up was done after three months of surgery. There was satisfactory relief of symptoms postoperatively in all the subjects of the study. Relief of nasal obstruction was found to be most responsive to management by functional endoscopic sinus surgery. This could be attributed to the removal of polyps and partly to the practice of removing anterior end of the middle turbinate, which bears the brunt of inspiratory airflow. Postnasal drip was the symptom least responsive to treatment with functional endoscopic sinus surgery. The reason for this could be due to the allergy mediated contribution to post nasal drip. Patients also experienced a great relief in symptoms of recurrent common cold, headache, anosmia, facial pain and sneezing. No patient reported any worsening of the symptoms.

Revision surgery was undertaken in three cases because of recurrence of the polyps. These patients had stopped using steroid nasal spray. Patients who were using steroid nasal spray regularly did not have recurrence of polyps. Patients having fungal infection were given cap Itraconazole 200 mg BD for 3 months along with steroid nasal spray and they were completely asymptomatic at subsequent follow up.

These findings are in concurrence with the findings of other studies. Levine in his study on 250 patients found success rate of functional endoscopic sinus surgery to be 89.7% for relief of sinonasal polyposis. Danielson⁵ reported a success rate of 90%, while both Smith⁶ and Rice⁷ quoted 88% for the same.

As in our study, success rate was 90% and only 10% patients needed revision surgery, it may be concluded that functional endoscopic sinus surgery is highly effective as a treatment for ethmoidal polyps.

Figure 1

Table 1: Pre-operative CT Scan findings

Sr. No.	CT Scan findings	No. of cases		Percentage
		Unilateral	Bilateral	
1.	Maxillary sinus	6	20	86.7
2.	Anterior Ethmoid sinus	0	30	100
3.	Posterior Ethmoid sinus	3	23	86.7
4.	Frontal recess	0	30	100
5.	Sphenoid sinus	2	04	20

Figure 2

Table 2: Relief of symptoms after FESS.

Sr. No.	Symptoms	No. of cases	Very good (>80%) relief	Good (50-80%) relief	Average (<50%) relief	Worse
1.	Nasal obstruction	25	17	08	-	-
2.	Nasal Discharge	23	12	06	05	-
3.	Postnasal Discharge	20	09	05	06	-
4.	Sneezing	20	20	-	-	-
5.	Headache	18	14	02	02	-
6.	Recurrent common cold	22	20	01	01	-
7.	Anosmia	10	06	02	02	-
8.	Facial pain	05	03	01	01	-

Figure 3

Table 3: Endoscopic findings on follow up

Sr. No.	Findings	No. of cases	Percentage
1.	Recurrent polyps	3	10
2.	MMA closure	2	6.7
3.	Synechia	-	-

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References

1. Kennedy DW. Functional endoscopic sinus surgery: Theory and diagnostic evaluation. Arch Otolaryngol 1985; 111: 576-82.
2. Stammberger H. Endoscopic endonasal surgery - concepts in treatment of recurring rhinosinusitis. Part 1. Anatomic and pathophysiologic considerations. Otolaryngol Head Neck Surg 1986; 94: 143-46.
3. Stammberger H. Endoscopic endonasal surgery - concepts in treatment of recurring rhinosinusitis. Part II - Surgical technique. Otolaryngol Head Neck Surg 1986; 94: 147-56.
4. Levine HL. Functional endoscopic sinus surgery: Evaluation, surgery, and follow - up of 250 patients. Laryngoscope 1990; 100: 79-84.
5. Danielson A, Olofsson J. Endoscopic endonasal sinus surgery. Acta Otolaryngol (Stockh) 1996; 116: 611-19.
6. Smith LF, Brindley PC. Indications, evaluation, complications and results of functional endoscopic sinus surgery in 200 patients. Otolaryngol Head Neck Surg 1993; 108: 688-96.
7. Rice DH. Endoscopic sinus surgery: Results at 2-year follow-up. Otolaryngol Head Neck Surg 1989; 101: 476-79.

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