An Analysis of Functional Endoscopic Sinus Surgery (FESS) for Sinonasal Disease

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ABSTRACT

Objectives: To establish the FESS causes fewer complications and significantly improves the symptoms of patients.

Place of study: Department of ENT, Mayo Hospital, Lahore

Material & methods: Patients who presented with nasal polyposis were selected from all age groups. A standard questionnaire was prepared. The categorical factors included in the analysis were age, sex, presenting features and mode of admission. Post operative complications were noted and grouped under five major categories i.e., pain, adhesions, recurrence, CSF leakage and intracranial infection

Results: Fifty patients from all age groups i.e., 6-65 years of age presenting with nasal polyps were studied and treated endoscopically. Out of 50 cases 13 were female and 37 were male. Nasal obstruction was the commonest. All patients were treated by FESS with one year follow up. Symptoms improved as nasal obstruction 92%, rhinorhea 88%, post nasal drip 88% and snoring 90%.

Conclusion: The study showed good results using functional endoscopic sinus surgery.

Key words: Functional endoscopic sinus surgery, nasal polyp.

INTRODUCTION

Polyp is a Greek word which means many footed (poly-pous). A nasal polyp is an edematous hypertrophied mucosa and sub-mucosa of nose and paranasal sinuses. The cause of proptosis is usually the disease in the ethmoids. Nasal polyp is a common problem that is difficult to treat because the cause of nasal polyp is unknown. It is a multifactorial disease characterized by a chronic eosinophilic infiltration of the sinus mucosa, often associated with Asthma and Aspirin sensitivity. Nasal polyposis is an invading disease whose evaluation is dominated by functional symptoms such as anosmia, nasal obstruction, rhinorhea and less frequently pain and sneezing. The diagnosis of chronic sinusitis is based on clinical presentation, nasal endoscopy and computed tomography scans.

Treatment of sinonasal polyp is both conservative and surgical. The recent advances in surgical management is the use of endoscopic sinus surgery as it causes less morbidity, complication, pain and above all less recurrence rates. Endoscopic sinus surgery has now been widely accepted surgical procedure for the treatment of chronic inflammatory sinus diseases. The term “functional” was introduced to distinguish this type of endoscopic surgery from non-endoscopic conventional procedures.

Functional endoscopic sinus surgery (FESS) is a minimally invasive technique in which sinus air cells and sinus ostia are opened under direct visualization. The goal of this procedure is to restore sinus ventilation and normal functions. In a study the overall reported symptomatic improvement ranged from 78 to 88% for FESS compared with 43-84% for similar techniques (polypectomy, Caldwell Luc and intranasal ethmoidectomy). The recurrent rate is high after simple polypectomy and is reported 32%. FESS is a safe procedure in experienced hands.

The ability to treat paranasal sinus disease has been revolutionized by fiber optic endoscopes; these endoscopes have made it possible to examine the nose thoroughly from anterior nares to post nasal space. The endoscopic procedure requires local anesthetic and may be performed in office (Fig 1-2-3). The specific features that must be identified and assessed during the examination are the middle turbinate and the middle meatus (osteo meatal complex), anatomic obstruction, muco pus and nasal polyp (Fig 4-5-6).

The most important landmark for FESS is middle turbinate. On the lateral wall of the nose at the level of anterior end of the middle turbinate lies the Uncinate process. This is removed exposing the ethmoid bulla and the opening called the Hiatus semilunaris, into which the frontal and maxillary sinus drain (Fig 7).

There are sufficient reports on the incidence of complications after endonasal surgery of paranasal sinuses. The most catastrophic complication of FESS is blindness resulting from damage to the optic nerve. However the evidence indicates that the
frequency of this complication is extremely low\textsuperscript{16,17}. Cerebro spinal fluid leak is the single most common major complication of FESS, occurring in about 0.2% of cases\textsuperscript{18}. Other rare complications include orbital haematoma and nasolacrimal duct stenosis.

**MATERIAL AND METHODS**

This study is performed in the Department of ENT and Head & Neck Surgery, Mayo Hospital, Lahore. Fifty patients presenting with nasal polyps were studied and treated endoscopically. A standard questionnaire was prepared and history, examination, laboratory data and treatment were recorded of each patient. The categorical factors included in the analysis were age, sex, presenting features (nasal obstruction, rhinorhea, postnasal discharge and snoring) and mode of admission.

As a part of quality assurance process for surgery, presenting features and complications were recorded in a computerized data base. All the hospital complications were noted during surgery and after surgery during the in patient stay in addition to our policy to call every patient in out patient department, follow up post operative complications were also noted at intervals of 1 week, 2 week, 1 month, 2 months, 3 months and one year. The post operative complications that were studied were grouped under five major categories i.e., pain, adhesions, recurrence, CSF leakage and intracranial infection.

**RESULTS**

Fifty patients were included in this study. Patients who presented with nasal polyposis were selected from all age groups. The youngest patient was 06 years old while the oldest was 65 years of age. In group up to 25 years there were 32 patients, in age group 26-40 years there were 12 patients. In age group 41-65 years, there were 6 patients. Out of 50 cases 13 were female and 37 were male. For these 50 patients were, 47 presented in OPD and 3 in emergency with eye complications. Nasal obstruction was the most common symptom (96%), followed by rhinorhea (50%), post nasal drip (36%), snoring (22%) and ophthalmic complications (6%). All patients were treated by FESS with one year follow up. 50 patients seen during follow up regularly. Recurrence of polyposis were found in 6 patients (12%), adhesions in 3 patients (6%) and moderate post operative pain in 2 patients (4%). Good results were achieved at the end of the follow up as was targeted. 46 patients showed improvement in nasal obstruction (92%), rhinorhea improved in 44 patients (88%), postnasal discharge improved in 46 patients (92%) and snoring in 45 patients (90%). With an over all satisfaction of 86% in these 50 patients.
DISCUSSION

Functional endoscopic sinus surgery is a minimally invasive technique used to restore sinus ventilation and normal functions. The anatomy should be demonstrated with computed tomography before endoscopic surgery. All patients with nasal polyps were included in the study. CT and MRI scan can help diagnose the poly or polyps, define the extent of the lesion, nasal cavities, sinuses and beyond and narrow the differential diagnosis of an unusual clinical presentations. The most common presentation was nasal obstruction (96%) followed by rhinorhea (50%) and post nasal drip (36%). In one study nasal obstruction (88.3%) and olfactory disturbance (96.4%) were the main pre-operative complaints. For the treatment of nasal polyps in most cases surgical treatment is necessary. For this purpose endoscopic sinus surgery is an approach that is capable of providing good long term result.

Anterior nasal packing which is an awesome outcome in other conventional nasal surgeries done for nasal polyps, was avoided in our study. Most endoscopic surgeries can be managed without packing or any other haemostatic measure, thus reducing patient’s discomfort, post operative complications, duration of stay in hospital and cost of surgery. In our study no major complication like blindness, CSF leakage, intracranial complication or death were occurred. Results match able with international standards were achieved. (p < 0.001).
CONCLUSION

The rationale behind FESS is that localized pathology in the osteo meatal complex blocks the ostia and leads to inflammation in the dependent sinuses. The surgical interventions of the procedure are designed to remove the osteo meatal blockage and restore the normal ventilation and mucociliary function and thereby reducing the recurrence rate. The study showed good results using functional endoscopic sinus surgery.

REFERENCES