**ORIGINAL RESEARCH**

# Determination of complications of functional endoscopic sinus surgery

Dr. Deepanshu Singhal

Associate Professor, Department of ENT, Teerthankar Mahavir Medical College & Research Centre, Moradabad, Uttar Pradesh, India

**Corresponding Author**
Dr. Deepanshu Singhal
Associate Professor, Department of ENT, Teerthankar Mahavir Medical College & Research Centre, Moradabad, Uttar Pradesh, India

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**ABSTRACT**

**Background:** By removing tissue that is obstructing the Osteo Metal Complex (OMC) and facilitating drainage, functional endoscopic sinus surgery (FESS) preserves the mucous membrane and normal non-obstructing anatomy. The present study was conducted to determine complications of functional endoscopic sinus surgery (FESS). **Materials & Methods:** 95 adult patients of chronic rhino sinusitis selected for functional endoscopic sinus surgery (FESS) of both gendersunderwent anterior and posterior rhinoscopy examinations. Nasal endoscopy findings are graded using the Lanza Kennedy criteria, which consider the presence of polyps, oedema, and secretion. The traditional Messerklinger procedure was used to operate on all of the patients while they were under general anesthesia. Following surgery, all patients were monitored on a regular basis for three to six months. **Results:** Age group 20-30 years had 22 males and 19 females, 30-40 years had 18 and 15 females and >40 years had 10 males and 11 females. The difference was non- significant (P>0.05). Common clinical findings were post nasal drip in 24, headache in 51, nasal obstruction in 75, nasal discharge in 14, halitosis in 12, anosmia & hyposmia in 7 and earache/ ear fullness in 5 patients. The difference was significant (P< 0.05). Common complications were synechia seen in 24, bleeding nose in 11, orbital subcutaneous emphysema in 6 and lower lid ecchymosis in 5 patients. The difference was significant (P< 0.05). **Conclusion:** Synechia, orbital subcutaneous emphysema, lower lid ecchymosis, and bleeding nose were typical side effects of functional endoscopic sinus surgery.

**Keywords:** paranasal sinuses, functional endoscopic sinus surgery,synechia



## INTRODUCTION

By removing tissue that is obstructing the Osteo Metal Complex (OMC) and facilitating drainage, functional endoscopic sinus surgery (FESS) preserves the mucous membrane and normal non-obstructing anatomy.[1] Excellent intra-operative imaging of the OMC is made possible by the rigid fiberoptic nasal telescope, which enables the surgery to be accurately targeted at the important regions.[2] A tiny camera that is connected to the endoscope's ocular allows the image to be shown onto a television monitor. The normal mucosa is preserved while the diseased tissue is removed using microdebriders.[3]

Endoscopic sinus surgery has gained popularity as a secure and efficient treatment for abnormalities of the paranasal sinuses (PNS) throughout the last 20 years. This operation is now safer and more efficient because to powered instruments and stereotactic image-guided surgery.[4] These days, endoscopic methods for benign tumors of the orbit, sinuses, nose, and anterior cranial fossa are becoming more and more common. Endoscopic sinus surgery has been transformed by the use of powered dissection in conjunction with suction. However, the operation has been shadowed by the possibility of problems.In the late 1980s and early 1990s, endoscopic sinus surgery came with a number of problems.[5] Unquestionably, improved instrumentation technology has led to advancements. Because the powered cutting tool cannot hold the entire bone, it is believed to be safe at the skull base and lamina papyracea. However, this perception is called into question when the tool is able to grasp and cut the free edges of the bone.[6]The present study was conducted to determine complications of functional endoscopic sinus surgery (FESS).

## MATERIALS & METHODS

The present study comprised of 95 adult patients of chronic rhino sinusitis selected for functional endoscopic sinus surgery (FESS) of both genders. All were enrolled and their written consent was obtained.

Data such as name, age, gender etc. was recorded. All patients underwent anterior and posterior rhinoscopy

examinations. Nasal endoscopy findings are graded using the Lanza Kennedy criteria, which consider the presence of polyps, oedema, and secretion. The traditional Messerklinger procedure was used to operate on all of the patients while they were under general anesthesia. Following surgery, all patients were monitored on a regular basis for three to six months. Every visit included a record of the patient's symptoms as well as any intraoperative or postoperative problems. Results of the study were assessed statistically. P value less than 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

| Age group (Years) | Male | Female | P value |
|---|---|---|---|
| 20-30 | 22 | 19 | 0.63 |
| 30-40 | 18 | 15 | |
| >40 | 10 | 11 | |
| Total | 50 | 45 | |

Table I shows that age group 20-30 years had 22 males and 19 females, 30-40 years had 18 and 15 females and >40 years had 10 males and 11 females. The difference was non- significant (P>0.05).

**Table II Assessment of clinical findings**

| Clinical findings | Number | P value |
|---|---|---|
| Post nasal drip | 24 | 0.05 |
| Headache | 51 | |
| Nasal obstruction | 75 | |
| Nasal discharge | 14 | |
| Halitosis | 12 | |
| Anosmia & Hyposmia | 7 | |
| Earache/ ear fullness | 5 | |

Table II, graph I shows that common clinical findings were post nasal drip in 24, headachein 51, nasal obstruction in 75, nasal discharge in 14, halitosisin 12, anosmia &hyposmia in 7 and earache/ ear fullness in 5 patients. The difference was significant (P< 0.05).

**Graph I Assessment of clinical findings**

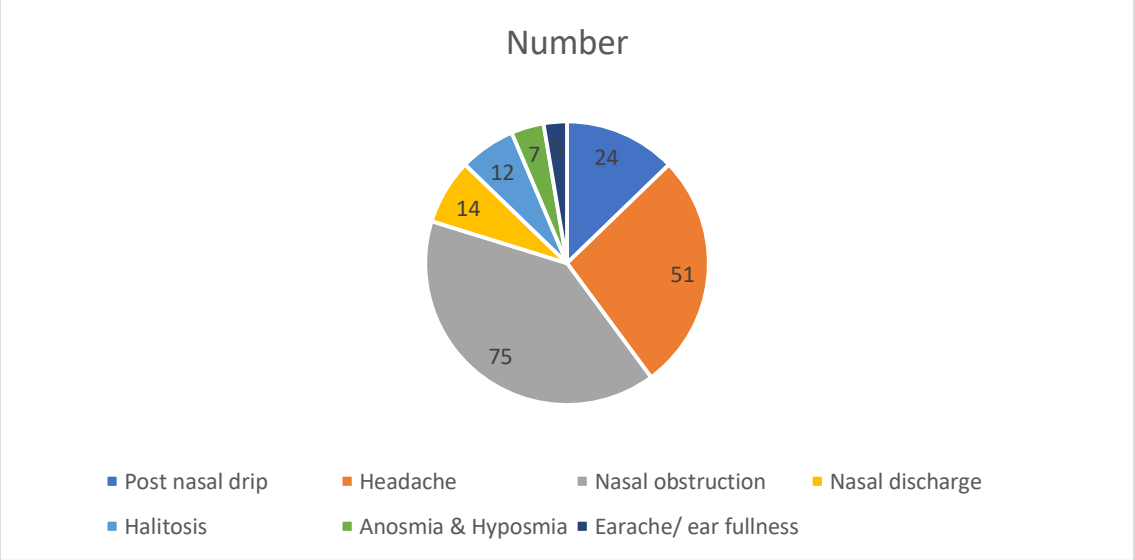
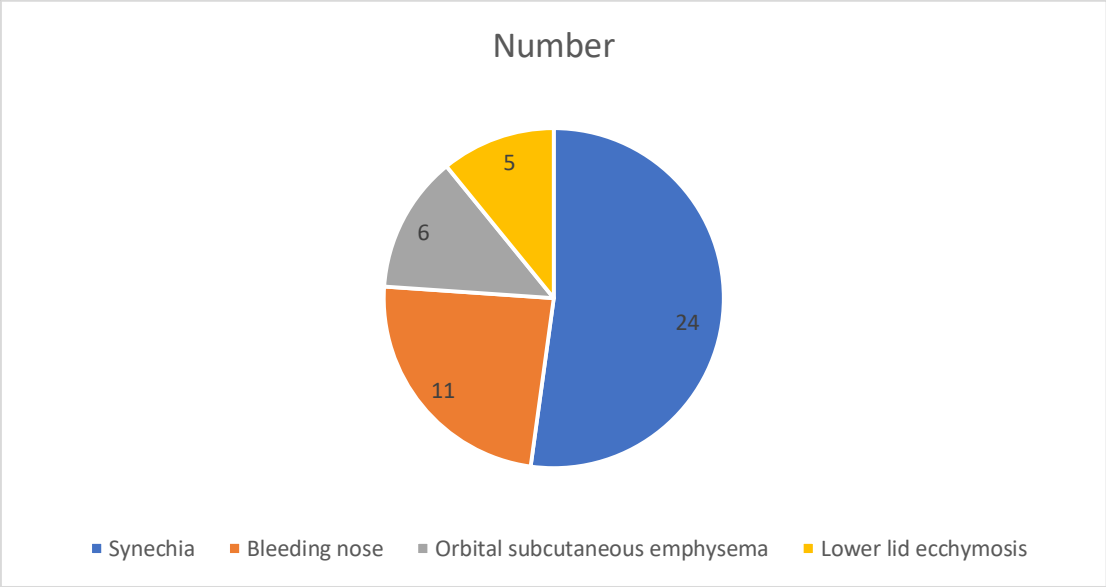



**Table III Assessment of complications**

| Complications | Number | P value |
|---|---|---|
| Synechia | 24 | 0.03 |
| Bleeding nose | 11 | |
| Orbital subcutaneous emphysema | 6 | |
| Lower lid ecchymosis | 5 | |

Table III, graph II shows that common complications were synechia seen in 24, bleeding nose in 11,orbital subcutaneous emphysema in 6 and lower lid ecchymosis in 5 patients. The difference was significant (P< 0.05).

**Graph II Assessment of complications**




## DISCUSSION

The surgical treatment of chronic sinus disorders has been completely transformed by the highly advanced procedure known as Functional Endoscopic Sinus Surgery (FESS). Although there are hazards involved, FESS is essential in the treatment of a few disorders in the ophthalmic sector. FESS was not confined to the realm of otolaryngology alone. Its uses in ophthalmology—orbit endoscopy in particular—became more apparent, although frequently at considerable risk.[7] Orbital decompression of thyroid orbitopathy, lacrimal blockage, decompression of the optic nerve (ON), traumatic loss of vision, and pituitary tumor surgery are among the ocular reasons for FESS. Conditions include orbital decompression, lacrimal duct issues, optic nerve decompression, silent sinus syndrome, drainage of subperiosteal abscess, and others have taken advantage of the connection between ophthalmology and otolaryngology.[8]The relationship between ophthalmology and otolaryngology has been exploited in conditions such as silent sinus syndrome, lacrimal duct problems, optic nerve decompression, and orbital decompression, drainage of subperiosteal abscess, orbital trauma, tumor surgery, and complications of endoscopic sinus surgery.[9]The present study was conducted to determine complications of functional endoscopic sinus surgery (FESS).

We found that age group 20-30 years had 22 males and 19 females, 30-40 years had 18 and 15 females and >40 years had 10 males and 11 females. Satish et al[10]conducted a study in which 90 patients of chronic rhinosinusitis were classified into two groups depending on presence and absence of nasal polyps. The two groups were evaluated using subjective (patient complaints) and objective (computed tomography scan and endoscopy scores) criteria. Preoperative data were compared with data obtained 12 months post endoscopic sinus surgery. The study included 38 patients of chronic rhinosinusitis and 52 patients of nasal polyps. The patients of nasal polyp group presented with increased severity of symptoms of nasal blockage, nasal discharge and reduced sense of smell as compared to the chronic rhinosinusitis group who had significantly higher presentation of headache and facial pain. The preoperative CT scan revealed significantly higher bilateral disease with increased involvement of multiple sinuses in nasal polyp group. Post endoscopic sinus surgery both the groups showed significant improvement in their symptoms with the nasal polyp group demonstrating reduction in improvement on 1 year follow up. The patients with chronic rhinosinusitis and nasal polyp had varied severity of symptoms with the nasal polyp group having higher nasal symptoms and increased severity as compared to chronic rhinosinusitis group.

We found that common clinical findings were post nasal drip in 24, headache in 51, nasal obstruction in 75, nasal discharge in 14, halitosis in 12, anosmia &hyposmia in 7 and earache/ ear fullness in 5 patients. Siedek et al[11] assessed the symptoms, extent of surgery, complications, and results of children who had surgery. All patients received questionnaires on their symptoms and quality of life in order to evaluate the results. 115 children—77 boys and 38 girls—had a FESS operation because of CRS. Sixty-four percent (73 out of 115) of the questionnaires were completed, and the average follow-up period was 5.4 (+/-1.8) years. 71% of the patients said their overall quality of life had improved, and 76% said their primary symptoms had improved. The VAS showed a significant improvement in overall quality of life ($p<0.01$). In CRS patients, nasal obstruction was completely relieved in 62.3%, facial pain in 65.5% and postnasal drip in 72.5%. Improvement of primary nasal symptoms (PNS) of CRS in patients with CF, asthma or allergies as well as in youngsters who had

started or continued to smoke 35 out of 73 (48%) was significantly less.

We found that common complications were synechia seen in 24, bleeding nose in 11,orbital subcutaneous emphysema in 6 and lower lid ecchymosis in 5 patients. Kennedy et al[12] reflects a follow-up of 72 patients (60%) over an average of 7.8 years. When asked about their overall symptoms, 98.4% of patients (n = 66) said they felt better than they had before surgery. Longer follow-up showed a tendency toward ongoing subjective improvement in symptom scores, however the changes fell short of statistical significance. A total of thirteen patients (18%) needed further surgery. Preoperative stage, previous surgery, and other variables that could influence the result were assessed. The study shows that with proper postoperative treatment, excellent subjective outcomes after FESS can be sustained over time. Additionally, the data supports the idea that patients who have surgery to correct their cavities are unlikely to need additional surgery.

The limitation of the study is small sample size.

## CONCLUSION

Authors found that Synechia, orbital subcutaneous emphysema, lower lid ecchymosis, and bleeding nose were typical side effects of FESS.

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