

ORIGINAL ARTICLE

FESS in the Management of Chronic Maxillary Sinusitis

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Abstract:

Functional endoscopic sinus surgery (FESS) is the minimally invasive procedure to clear the disease process from nose and paranasal sinuses like chronic maxillary sinusitis and to restore aeration and normal mucocilliary function of sinuses. FESS has recently become a popular technique among the otolaryngologists of Bangladesh. The use of endoscope during FESS improves visualization, enables greater preservation of normal structures and reduces the necessity for wide exposure of operation fields. The result suggests that FESS is a safe and effective method in the treatment of chronic maxillary sinusitis. This study of 50 cases was done from January 2007 to December 2007 at Holy Family Red Crescent Medical College Hospital where FESS is routinely done for the management of chronic maxillary sinusitis. In this study, 76% (38) were completely free from symptom, 16% (08) improved, 4% (02) encountered recurrence of symptom and persistence of symptom observed in another 4% (02) cases. Most of the patients (62%) in this series of FESS were operated without facing any difficulties. Majority of the patients (94%) were released from the hospital within two days of FESS. No post-operative complication was found in 62% patients. FESS for inflammatory sinus diseases is now well established but one should be cautious about the complications associated with this technique.

Introduction:

Chronic sinusitis is usually defined when symptoms of sinusitis persist beyond three months without improvement¹. Sinusitis is a

common health problem that leads to frequent visit of the patients to the health care personnel². Maxillary sinusitis is the commonest of all sinus infections which often chronically and persistently restricts the quality of life of millions of involved patients³.

Hirschman is called the Father of Nasal Endoscopy, who used only a 4 mm diameter endoscope to examine the middle meatus and study the sinus ostia and also examined maxillary antrum via a molar tooth socket, for diagnostic purposes in 1903. During 1950s, Hopkins working at Imperial College developed solid rod lens system and proximal

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'cold light' source allowing better optical views which has greatly extended the use of endoscope. Works have been carried out enthusiastically during the last decades and has resulted in the excellent publications of Buitter and Draf⁴. Endoscopic Sinus Surgery has come a long way since its introduction more than two decades ago. The development of the Hopkins Telescopes and the introduction of the nasal endoscopes of various viewing angles have revolutionized the way nasal and sinus diseases are approached and treated. The introduction of nasal endoscopes is seen by many to be the most important development since the introduction of the operating microscope. Stammberger's pioneering work based on the Messerklinger's technique remains the basis for Functional Endoscopic Sinus Surgery (FESS). The term FESS was coined by Kennedy in 1985, but the concept was first introduced by Messerklinger. The theoretical principles of functional endoscopic sinus surgery, and the detailed diagnostic and anatomical information about the ostiomeatal complex may be beneficially applied to the general management of patients with sinusitis. Thus, these principles have application both in the medical management of patients and in nonendoscopic surgical techniques⁵.

Materials and method:

This study was done during the period of January 2007 to December 2007. Fifty cases of chronic maxillary sinusitis were admitted and managed at Holy Family Red Crescent Medical College Hospital (HFRCMCH). The patients were selected from the cases reported to out-patient department of HFRCMCH, Dhaka for treatment of chronic maxillary sinusitis. At first, thorough history was taken. Clinical examinations such as anterior and

posterior rhinoscopy were done to assess nasal fossae, turbinates and meatuses. CT scan was done only in cases who could afford. Diagnosis was confirmed clinically and radiologically. All the patients were admitted to the in-patient department for FESS. Perioperative and postoperative complications of FESS and hospital stay were recorded. In follow up, the patients visited the hospital weekly for four weeks then monthly for three months. During follow up the subjective improvement of the symptoms were noted. Nasal examination was done to find out nasal status and also a recurrence, if any. X-ray paranasal sinuses OM view was done after 6-12 weeks and findings were noted.

Results:

In the present study, majority (80%) of patients were in the age group of 20-40 years. The age range was from 10-65 years with mean age of 33 years (Table-I). The Number of male patients were more.

Table I : Distribution of age groups and sex of patients (n= 50)

Age group	Number of patients	Percentage
10-20 years	06	12%
21-30 years	20	40%
31-40 years	20	40%
41-50 years	03	06%
51-65 years	01	02%
Sex	Number of patients	Percentage
Male	35	70%
Female	15	30%

The male patients were 35 (70%) and female were 15 (30%) (Table-I). The male to female ratio in this study is 2.3:1.

In this series 36 (72%) patients were operated under general anesthesia and 14 (28%) patients were under local anesthesia.

Both unilateral and bilateral procedures were done. Bilateral procedures were done in 42 (84%) patients and rest eight (16%) patients under went for unilateral procedure.

Majority of patients (94%) were released from the hospital within two days of FESS.

No post-operative complications of FESS was found in 31 (62%) patients. Crusting in 12 (24%), synechiae in four (8%), echymosis of eye in two (4%), epiphora in one (2%) were the post-operative complications found during follow up (Table-II).

Table II: Post-operative complications (n=50)

Complications	Number of patients	Percentage
Echymosis of eye	02	04%
Epiphora	01	02%
Adhesion/Synechiae	04	08%
CSF Leak	00	00%
Crusting	12	24%

Thirty eight (76%) patients were completely free from symptom, improvement was found in eight (16%), recurrence of symptom in two (4%) and persistence of symptom in two (4%) cases (Table-III).

Table-III: Outcome of FESS (n=50)

Outcome	Number of patients	Percentage
Free from symptoms	38	76%
Improved	08	16%
Recurrence of symptoms	02	04%
Persistence of symptoms	02	04%

Discussion:

Functional endoscopic sinus surgery (FESS) is now a days a common and excellent method for the treatment of most of the diseases in the area of nose and paranasal sinuses, like chronic rhinosinusitis. In the present study, majority of patients were in the age group of 20-40 years being consistent with other studies of Rahman et al¹⁰ and Alam et al⁸. FESS has recently become a popular technique among the otolaryngologists of Bangladesh. Endoscopic sinus surgery (ESS) for inflammatory sinus disease is well established⁹. The use of endoscope during FESS improves visualization, enables greater preservation of normal structures and reduces the necessity for wide exposure of operation fields. The purpose of the study was to find out the rate of complication, recovery and recurrence following FESS in the management of chronic maxillary sinusitis. So, the efficacy of FESS in the management of chronic maxillary sinusitis could be determined. The result suggests that FESS is a safe and effective method in the treatment of chronic maxillary sinusitis. Majority of patients were released from the hospital within two days of FESS. This results was almost similar to the findings of the study of Hussain et al¹³.

Functional endoscopic sinus surgery has nowadays acquired world wide recognition as a technique which can achieve maximum success in the treatment with minimum traumatization of the patient. Hopkins rod lens telescope ensures an excellent overview, specially developed instruments also allow high-precision, and atraumatic procedures in the confined nasal and paranasal areas give better results.

Despite few limitations, outcome of FESS is more acceptable in comparison to conventional sinus surgery. Rate of complications and rate of recurrence following FESS is less. The main symptoms, like nasal obstruction, discharge, headache and facial pain get relieved off dramatically.

References:

1. Manning SC. Medical management of infection and inflammatory disease of paranasal sinus. In: Cummings CW, Fredrickson JM (editors). *Otolaryngology Head and Neck Surgery*. St Louis: Mosby, 1998. pp-1135-44.
2. Puruckharr M, Byrd R, Roy T, Krishnaswamy G. The diagnosis and management of chronic rhinosinusitis. Department of medicine, East Tennessee State University. e-mail: krishnas@etsu.edu (Medline).
3. Gray RF, Howthorne M. Inflammation of the paranasal sinuses. In: *Synopsis of Otolaryngology*, Fifth edition. New York: Elsevier Science & Technology Books, 1992. pp-234.
4. Abdullah M. Endoscopic sinus surgery-Recent advancement in oto-rhinolaryngological practice. *Sir Salimullah Medical College Journal* 2005; 13: 52-54.
5. Kennedy DW, Zinreich S J. Endoscopic sinus surgery. *Otolaryngology* 1991; III: 1861-1872.
6. Paulsson B, Linberg S, Ohlin P. Washout of 133-xenon as an objective assessment of paranasal sinus ventilation in endoscopic sinus surgery. *Ann Otol Rhinol Laryngol* 2002; 111: 710-17.
7. Busaba NY, Kieff D. Endoscopic sinus surgery for inflammatory maxillary sinus disease. *Laryngoscope* 2002; 112: 1378-83.
8. Alam M M, Siddiquee B H, Tarafder K H, Akhter N. Functional endoscopic sinus surgery (FESS)- Our experience at Bangabandhu Sheikh Mujib Medical University (BSMMU). *Bangladesh Journal of Otorhinolaryngology*, 2003; 9: 11-14.
9. Rahman M Z, Islam A, Shaheen M, et al. Functional endoscopic sinus surgery under local anaesthesia. *Bangladesh Journal of Otorhinolaryngology*, 2002; 8: 11-16.
10. Rahman M Z, Shaheen M, Saha K. FESS – A review of personal series of 207 cases. *J Dhaka Med Coll* 2003; 12: 56-59.
11. Smith L F, Calhoun K H, Melinda, et al. Endoscopic sinus surgery, Department of Otolaryngology, UTMB, Grand Rounds, 1992. pp 01-35.
12. Mustafa MG. Endoscopic sinus surgery-A study of 60 (sixty) cases [dissertation]. Dhaka: Bangladesh College of Physicians and Surgeons, 2005.
13. Hussain MJ. Comparative study between functional endoscopic sinus surgery and conventional surgery in the management of chronic sinusitis. [dissertation]. Dhaka: Bangladesh College of Physicians and Surgeons, 2006.