Bangladesh J Otorhinolaryngol 2011; 17(2): 104-109

Original Article

Endoscopic sinus surgery: experience of 60 cases

Md. Golam Mustafa[1], Khabiruddin Ahmed[2], Mahmudul Hasan[3]

Abstract:

Objective: To study the quality of life in patient who underwent ESS operation.

Design and setting: A prospective study conducted over a period of one(01) year; from July 2004 to June 2005 in Otolaryngology – Head & Neck Surgery Department of Shaheed Suhrawardy Medical College Hospital and Dhaka Medical College Hospital, Dhaka, Bangladesh.

Results: Hospital admitted 60(Sixty) cases of ESS patients were included and analyzed. 42 cases were male; whereas 18 cases were female in this study. 21-40 years (44 cases) were the commonest age group of study people. No significant/ alarming complications were recorded during post operative period.

Conclusion: Instead of all limitations, outcome of ESS is more acceptable in comparison with conventional sinus surgery. The main symptoms, like nasal obstruction, discharge, headache and facial pain get relieved off dramatically which is compatible with other recognized study.

Key words: *Endoscopic sinus surgery, open the sinuses, restore normal air flow.*

Introduction:

Endoscopic sinus surgery (ESS) is a procedure through the nose used to remove thickened and diseased tissue that can block the sinuses. It can also be used to straighten a deviated nasal septum or remove nasal polyps. ESS is used to open the sinuses and restore normal airflow. Through the use of fibreoptic technology, ESS is far less invasive and damaging to the patient than previous forms of surgery.

Endoscopy was born when D'Esoreux demonstrated an alcohol illuminated urethroscope at the Paris Exibition in 1853 and win a prize. Reichert in 1902 published his observations on atroscopy and was the first to perform and describe minor intra sinus manipulations under endoscopic control. Hirschman was called the father of Nasal Endoscopy, who used only a 4mm diameter endoscope to examine the middle meatus and study the sinus ostea and also examined maxillary antrum via a molar tooth socket, for diagnostic purposes in 1903. During 1950s, Hopkins working at imperial college developed

1. Assistant Professor, Department of ENT – Head & Neck Surgery, Comilla Medical College, Comilla, Bangladesh.
2. Professor and Head, Department of ENT – Head & Neck Surgery, Shaheed Suhrawardy Medical College, Sher-e-Bangla nagar, Dhaka, Bangladesh.
3. Associate Professor, Department of ENT – Head & Neck Surgery, Shaheed Suhrawardy Medical College, Sher-e-Bangla nagar, Dhaka, Bangladesh.

Address for Correspondence: Dr. Md. Golam Mustafa, Assistant Professor, Dept. of ENT - Head & Neck Surgery, Comilla Medical College, Comilla 3500, Bangladesh. E-mail: mustafa_simd@yahoo.com

solid rod lens system and proximal 'cold light' source allowing better optical views greatly extended the use of endoscope. This work has been carried out on enthusiastically during the last decades and has resulted in the excellent publications of Buiter and Draf.[1] Endoscopic sinus surgery has come a long way since its introduction more than two decades ago. The development of the Hopkins telescope and the introduction of the nasal endoscopes of various viewing angles have revolutionized the way nasal and sinus diseases are approached and treated.

The diagnosis of disease within the narrow mucosa lined channels and complicated anatomy of the osteomeatal complex necessitates meticulous diagnostic evaluation. In order to accurately define this area, a combination of endoscopy and radiographic tomographic techniques is essential. Basic prerequisites include knowledge regarding mucociliary clearance and a detailed understanding of the regional anatomy.

Methods:

Type of study	:	Prospective
Sample size	:	Selected 60(sixty) patients.
Duration of study	:	July, 2004 to June, 2005 (one year).
Place of study	:	Otolaryngology – Head & Neck department of Shaheed Suhrawardy Hospital and Dhaka Medical College Hospital, Dhaka, Bangladesh.
Inclusion criteria	:	Clinically and radiologically suggested nose and paranasal sinus diseases such as nasal polyposis, chronic/ recurrent acute sinusitis, rhinisporidiosis etc. Patient did not respond to adequate medical and conservative surgical treatment (Antrum washout).
Exclusion criteria	:	Malignant conditions of nose and paranasal sinuses. The patient diagnosed as acute sinusitis with or without intracranial complications.
Data collection method	:	Data was collected from a prefixed PROFORMA Data sheet. Final compilation was done and analyzed.
Data analysis	:	All data was analyzed by manual calculator.

Results:

Sixty cases of ESS were included in this study. All information about the cases was compiled and relevant data were analyzed and shown in tabulated form.

Table-I

Common presenting complaints (n=60)

Complaints	No. of patients	Percentage
Headache/Facial pain	39	65.00 %
Nasal discharge	30	50.00 %
Nasal obstruction	42	70.00 %
Post nasal drip	20	33.33 %
Sneezing	15	25.00 %
Smell disturbances	08	13.33 %
Recurrent cough	15	25.00 %
Recurrent sore throat	32	53.33 %

Table-II
Findings in digital X-ray of paranasal sinuses OM view (n=60)

Findings	Number of pts	Percentage
Opacity in antrum	48	80.00 %
Mucosal thickening	41	68.33 %
Mucosal retention cyst	08	13.33 %
Septal deviation	12	20.00 %

Table-III
Findings of coronal CT scan of paranasal sinuses (n=15)

Findings	Number of pts	Percentage
Mucosal thickening	13	86.67 %
Blocked OMC	12	80.00 %
Septal deviation	06	40.00 %
Paradoxical middle turbinate	03	20.00 %
Agar nasi pneumatization	02	13.33 %
Concha bullosa	02	13.33 %

Table-IV
Indications of ESS in the study (n=60)

Name of diseases	Number of pts	percentage
Chronic rhinosinusitis	12	20.00 %
Ethmoidal polyp	20	33.33 %
Antrochoanal polyp	10	16.67 %
Rhinosporidiosis	05	08.33 %
Inverted papilloma	05	08.33 %
Epistaxis	04	06.67 %
DNS with chronic dacrocystitis	03	05.00 %
Nasal Foreign Body (Needle)	01	01.67 %

Table-V
Anaesthesia used (n=60)

Anaesthesia	Number of pts	Percentage
General anaesthesia	43	71.67 %
Local anaesthesia	17	28.33 %

Table-VI
Procedures performed (n=60)[2,3] (Messerklinger's technique)

	Total	Bilateral (n)	Unilateral (n)
Infundibulotomy	60	50	10
Middle meatal antrostomy	60	45	15
Anterior ethmoidectomy	60	45	11
Posterior ethmoidectomy	45	35	07

Table-VII
Per-operative difficulties of ESS (n=60)

Difficulties	Number of pts	Percentage
Unusual haemorrhage	05	08.33 %
Gross DNS	08	13.33 %
Concha bullosa	04	06.67 %
Vasovagal attack (LA)	02	03.33 %
No difficulties	41	68.33 %

Table-VIII
Post-operative complications of ESS (n=60)

Complications	Number of pts	Percentage
Blindness	00	00.00 %
Epiphora	01	01.67 %
Synechiae	05	08.33 %
CSF leak	00	00.00 %
Crusting	12	20.00 %
No complication	42	70.00 %

Table-IX
Outcome of ESS (n=60)

Outcome	Number of pts	Percentage
Completely symptom free	36	60.00 %
Improvement	51	85.00 %
Recurrence of symptoms	15	25.00 %
Persistence of disease	05	08.33 %

Discussion:

Endoscopic sinus surgery (ESS) 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. ESS/ FESS have recently become a popular technique among the Otolaryngologists of Bangladesh. Endoscopic sinus surgery (ESS) for inflammatory sinus disease is well estabilised.[4] The use of endoscope during ESS improves visualization, enables greater preservation of normal structures and reduces the necessity for wide exposure of operation fields.[6,7] The purpose of the study is to determine the efficacy of ESS in the treatment of nose and paranasal sinus diseases that includes ethmoidal polyps, retention cysts, and antrochoanal polyps and most other benign diseases. The results suggested ESS is a safe and effective method in the treatment of children with chronic/ recurrent paranasal sinus diseases and also nasal polyps.[5]

In the present study maximum 44(73.33%) of patients were in the age group of 20-40 years being consistent with other studies.[6, 8] The age ranges fro 10-65 years with mean age of 33 years.

The male patients were 42(70%) and female patients were 18(30%). The male:female in this study is 2.3:1 which is consistent with other study groups.[6,9]

The presenting symptoms of the patients in this study were nasal obstruction 42(70%), headache/ facial pain 39(65%), nasal discharge 30(50%), recurrent sore throat 32(53.33%), postnasal dripping 20(33.33%), sneezing 15(25%), recurrent cough 15(25%), smell disturbences 08(13.33%). The result is consistent with many other studie,[10] where nasal obstruction was 71%, followed by headache/ facial pain 65%, but the findings were inconsistent with the results of other article.[2]

Digital X-ray of PNS OM views were done in all patients. The findings of plain X-ray were opacities in maxillary sinus 48(80%), mucosal thickening 41(68.33%), septal deviation 12(20%) and mucous retention cyst 08(13.33%) cases.

Computed tomography (CT) scan of paranasal sinuses is the radiologic proedure of choice.[11,12] In CT scan, the blocked OMC, mucosal thickening of paranasal sinuses, SD, paradoxical middle turbinate, agar nasi pneumatization, concha bullosa, roof of the nose, cribriform plate, and orbits were best outlined.

Several disease entities were treated endoscopically in this study which is consistent with other studies.[6,8,12,13] Here, 20(33.33%) patients were operated for Ethmoidal polyp, 10(16.67%) patients were for ACP, 12(20%) patients for chronic rhinosinusitis, 05(08.33%) paients for Rhinosporidiosis, 05(08.33%) for Inverted papilloma.

In this series 43(71.67%) patients were operated under GA and 17(28.33%) patients were under LA. This is simillar with the other studies.[3,6] but not consistent with the other series,[8] in which study LA was selectively preferred to perform FESS.

The fundamental of ESS were performed according to the Messerklinger's technique which includes infundibulotomy, middle meatal antrostomy, anterior ethmoidectomy,

posteior ethoidectomy. This procedure is similar to other studies.[2,3] In this study both unilateral and bilateral procedures were done.

In this series of ESS, most of the patients 41(68.33%) were operated with out facing any difficulties. But, some difficulties like, Gross DNS 08(13.33%), Concha bullosa 04(06.67%), unusual bleeding 05(08.33%) and vasovagal attack (under LA) 02(03.33%) were faced and managed accordingly.

No post operative complications of ESS were found in 42(70%) patients, crusting 12(20%), synechiae 05(08.33%), epiphora 01(01.67%) were found during post operative follow up. These findings were consistent with the other study.[6]

Overall 85% had improvement, 60% had complete relief f disease after ESS. O8.33% patients felt no improvement of symptoms after ESS and 25% patients with recurrence. This study is similar with the another study.[10]

Conclusion:

Endoscopic Sinus Surgery (ESS) has now-a-days acquired world wide recognition as a technique which can achieve maximum success in treatment with minimum traumatization to the patient. Hopkins rod lens telescope ensure an excellent overview; specially developed instruments also allow high-precision, traumatic procedures in the confined nasal and paransal areas.

In this study, we tried to remove all disease processes meticlously with minimum traumatization to the surrounding tissues. Because of my study places were at Govt. hospitals, careful postoperative follow up was not always possible due to various real reasons. Some of the poor and or medically subconscious patients usually did not attend for routine postoperative follow up.

Instead of all limitations, outcome of ESS is more acceptable comparison with conventional sinus surgery. The main symptoms like obstruction, discharge, headache and facial pain get relieved off dramatically which is comparable with other recognized study.

References:

1. Abdullah M. Endoscopic Sinus Surgery-Recent Advancement in Oto-Rhino-Laryngologicl practice. Sir Salimullah Medical College Journal, 2005; 13: 52 – 54.
2. Gross R D, Shridan M F, Burgess L P, et al. Endoscopic Sinus Surgery complications in residency. Laryngoscope, 1997; 107:1080 – 1085.
3. Paulsson,-B; Lindberg,-S; Ohlin,-P. Ann-Otol-Rhinol-Laryngol. 2002 Aug; 111(8); 710 – 7.
4. Busaba,-N-Y; Kieff,-D. Laryngscope. 2002; 112(1): 1378 – 83.
5. Yang,-J-J; Xie,-M-Q; Xu,-G; Li,-Y; Yuan,-X-P. Lin-Chuang-Er-Bi-Yan-Hou-Ke-Za-Zhi. 2000; 14(11): 496 – 8.
6. Md. Monjurul Alam et al. Functional Endoscopic Sinus Surgery (FESS) - our experience at BSMMU. Banladesh J of Otorhinolaryngology, 2003; 9(1/2): 11 – 14.
7. Rahman MZ et al. Functional Endoscopic Sinus Surgery under Local Anaesthesia. Bangladesh J Otorhinolaryngol 2002; 8(1):11 – 16.
8. Rahman MZ et al. FESS- A Review of personal series of 207 cases. J Dhaka Med. Coll. April 2003; 12(1): 56 – 59.
9. Sethi DS. Endoscopic Sinus Surgery. A manual of Techniques, Singapore. 1995.

10. Smith LF et al. Endoscopic Sinus Surgery. Dept. of Otolaryngology, UTMB, Grand Rounds, 1992: 01 – 35.

11. Zinrich SJ, Kennedy D, et al. Paranasal sinuses: CT imaging requirments for endoscopic sinus surgery, Radiology; 1987; 163: 769.

12. James A, et al. Endoscopic Nasal Sinus Surgery, Otorhinolaryngology, Head and Neck Surgery,15th edition.1996; 234 – 235.

13. Kennedy D, et al. Endoscopic Sinus Surgery for mucoceles; A variable alternatives. Laryngoscope; 1989; 99: 885 – 9.

14. Jin,-G; Shi,-X; Gao,-H; et al. Experience of endoscopic sinus operation on 74 cases. Lin-Chuange-Er-Bi-Yan-Hou-Ke-Za-Zi. 1999; 18(8): 354 – 5.