ORIGINAL

JIMSA April-June 2006 Vol. 19 No. 2

Functional Endoscopic Sinus Surgery : 7 Year's Review

Y. Bajaj, S. Singh and T.N. Reddy

Great Ormond Street Hospital and Staffordshire General Hospital, London, UK

Abstract : *This study was conducted to assess the treatment results in patients undergoing functional endoscopic sinus surgery for chronic sinusitis, with evaluation of prognostic indicators of success and failure. A total of 266 patients who underwent Endoscopic Sinus Surgery for chronic sinusitis over a period of 7 years (from February 1995 to February 2002) were included. The diagnosis of chrnoic sinusitis was based on ongoing symptomatology for greater than 3 months and the presence of mucosal disease on radiological examination. A retrospective analysis was done looking at patient data, presenting symptoms, CT findings, operative details and outcome at 3 and 6 months follow up.The most common presenting complaints were olfactory disturbance followed by nasal obstruction and postnasal discharge. There was a positive history of asthma in 25.4% allergies in 13% and ASA triad in 3.3% patients. 41.7% patients had previous nasal surgeries in the past. Positive outcome was obtained in 81/0% at 3 months and 84.7% at 6 months. Revision operations were required in 7.9% patients. Minor complications were seen in 10.5% and major complications in 0.75%.*

INTRODUCTION

Chronic sinusits is a common problem encountered by otolaryngologists worldwide. Treatment of chronic sinusitis is initially medical and those refractory to medical treatment are treated surgically. In 1901 Hirschmann[1] first used a modified Nitze cystoscope to examine the sinuses. Speilberg[2] was the first to use an endoscope to examine the maxillary sinus through the inferior meatus. Maltz[3] coined the term sinoscopy and used a specially made endoscope by Wolfe. The development of compact, straight and angled telescopes, plus the pioneering work of Messerklinger[4] Wigand et al[5] and others[6] sparked an interest in endoscopic sinus surgery. Functional endoscopic sinus surgery continues to gain popularity among otolaryngologists. This paper looks at symptoms, signs, surgical results and complications of 266 patients who underwent functional endoscopic sinus surgery in a district general hospital in UK.

MATERIALS AND METHODS

Two hundred and sixty six (266) cases underwent clinic endoscopic evaluation and subsequent sinus surgery at the Staffordshire General Hospital, Stafford, UK, from February 1995 to February 2002. A uniform history was documented for each patient, including the location of facial pain, nasal discharge, allergic symptoms, nasal obstruction, congestion, anosmia, previous medical management and previous surgical interventions. All patients had unsuccessful medical therapy, which was usually intense.

Each patient was examined with nasal speculum and head mirror. 4 mm rigid endoscopes were used to examine the overall nasal cavity and meati. Information was recorded on the presence of a deviated nasal septum the presence of nasal discharge the character and appearance of middle and inferior turbinates the appearance of middle meatus and the presence of polyps. Diagnosis of chronic sinusitis was made on the basis of ongoing symptomatology, including nasal congestion/obstruction, facial pain/headaches and/ or olfactory disturbance greater than 3 months duration.

Initially patients were medically managed according to their symptoms and piror management. Patients who had received previous adequate medical management were evaluated with CT of the sinuses. Patients who had not received adequate medical management were started on appropriate regimen. Patient's were seen 6 weeks after medical management and if they were still symptomatic, a CT scan was performed.

RESULTS

From February 1995 to February 2002, 289 patients underwent Functional Endoscopic Sinus Surgery (FESS). 266 case notes were available for review. Of these 266 patients 100 (37.6%) were female and 166 (62.4%) were male. The commonest presenting complaints were nasal obstruction (81.5%) and loss of sensation of smell (83.1%) followed by post nasal discharge (44.3%), headache (43.2%), sneezing bouts (38.7%), rhinorrhoea (35.7%) and midfacial pain (28.1%). A history of asthma was reported in 26.3% patients. 13.5% patients had some allergies. Aspirin sensitivity was present in 3.4% of patients. On examination 51.9% patients had deviated nasal septum, 81.2% had inferior turbinate hypertrophy, 60.9% had polyps and 62% had some pathology in middle meatus. 42.9% had previous nasal surgery. Ethmoids (anterior/posterior or both) were opened in 78.2% and frontal recess opened in 16.5% patients. In addition to FESS, septoplasty was performed in 15.8%, cautery to inferior turbinates in 20.3% and both septoplasty and cautery to inferior turbinates in 4.5% patients. Postoperatively no packs were put in 48.9% and moerocel pack in 18%. We had an overall *complication* rate of 10.9% of which 6% were immediate and 5.6% were late. We had only 1 major complication i.e. cerebro spinal fluid (CSF) leak in 1 patient (0.37%) which was recognised and dealt with at the time of operation. Minor complication rate was 10.5%. These were adhesions; primary (0.4%), reactionary (3%), secondary haemorrhage (4.1%); black eyes (0.4%), orbital fat prolapse (0.75%) and bradycardia (0.4%). Postoperatively 7.9% patients were given antibiotics, 36.5% decongestant drops and 41.7% steroid sprays.

Correspondence : Dr. Y. Bajaj
E-mail : yogesh_bajaj@hotmail.com

At 6 months *follow up* 81.9% patients were better, 10.5% same and 0.4% were worse. 7.14% patients were lost to follow up. 157 out of 266 patients were followed up after 12 months. Rest of the patients had been discharged at 6 monthly follow. At 12 months 84.7% were better and 13.4% were same. Total of 21 out of 266 (7.9%) had to undergo revision operations. 12 required 1 revision, 7 required 2 revisions and 2 required 3 revision operations. After revision FESS 13 out of 21 (61.9%) were better and 8 out of 21 (38%) were same. *Overall outcome* was 81.9% were better, 12% were same and 6% were lost to follow up.

DISCUSSION

Family practitioners, general physicians, paediatricians, allergists and otolaryngologists see large numbers of patients with symptoms of facial pain, pressure, nasal obstruction and nasal discharge. According to the National Centre of Disease Statistics, sinusitis has become the number one chronic illness in the United States, surpassing arthritis[7]. For the majority of patients, sinonasal disease is a nuisance that causes absence from school, work and social functions. However it may exacerbate more serious illnesses such as asthma or chronic obstructive pulmonary disease, necessitating the use of long term daily steroids or increase in other pulmonary and cardiovascular medications. There are several ways to estimate treatment success when dealing with sinonasal disease. One is to examine the sinonasal area and see whether it is free of polypoid disease. Another is to determine patient satisfaction through relief of symptoms. Failure is determined by inability to rid patients of symptoms.

The use of endoscope as a functional tool was pioneered by Messerklinger in 1985 and has been popularised as the surgical treatment of choice for uncomplicated chronic inflammatory sinus disease. Much of the available literature concerns the theory, technique and complications of FESS. Both retrospective and prospective outcome analysis have been published with variable experimental designs, results and conclusions. The criteria used for success and failure, patient selection and the precise means and length of follow up are highly variable. Colclasure et al[8] had 300 patients with success rate of 94% and complications <1%. Ramadan[9] had 337 patients with minor complications rate of 15.1% and major complications of 1.5%. Nass et al[9] reported prospectively on 18 patients finding am 89% success rate postoperatively. Matthews et al[10] in their retrospective analysis of 155 patients determined outcome based on a subjective assessment of symptoms and physical examination. They had 90% success rate with minor complications of 1.5%.

In a prospective analysis of 250 patients Levine[7] found that the success of FESS (80.2%) was independent of preoperative extent of disease and concluded that patient satisfaction was the best determinant of success. Royal College of Surgeons England audit[8] showed a success rate of 84% for blockage, 75% for pain relief and 96% for discharge after FESS. The overall complications were 1.4%.

Schaefer et al[10] reported an 83% success rate in 100 patients, using clinical improvement, complications and need for further surgery as criteria for outcome. In our patient group, the criteria for failure included recurrent or residual symptoms or the need for revision surgery with in the follow up period for 12 months. All patients who had a diagnosis of chronic sinusitis and underwent FESS were included in the study. Due to the retrospective design of the study, it was not possible to quantify the degree of improvement. We had an overall success rate of 81.9% for 266 patients, major complication rate of 0.37% and minor 10.5% 7.9% required revision surgeries and 61.9% were better after revision operations.These results are comparable to those in the literature. Factors affecting outcome included asthma, polyposis and pansinusitis. Functional Endoscopic Sinus Surgery has good results and little morbidity. Extent of disease as reflected by polyposis and pan sinusitis is the most important determinant of the outcome.

CONCLUSION

Functional endoscopic sinus surgery has provided a safe, efficient method for dealing with identified disease. Surgery can be carried out safely and effectively. Nasal endoscopy provides an illuminated view into the nasal cavity so that chronic sinusitis and sinonasal polyposis can be managed with high success for alleviation of symptoms and improvement of disease with negligible morbidity.

REFERENCES

1. *Colclasure, JB; Barber, JL; Morris, BK; et al.* Endoscopic sinus surgery. A 300 case review. J. Ark. Med. Soc. 1993;90(3):106-9
2. *Speilberg, W.* Antroscopy of the maxillary sinus. Laryngoscopy 1992;32:441-3
3. *Malyz, M.* New instrument : the sinuscope. Laryngoscope 1925;35:805-11
4. *Messerklinger, W.* Endoskopische Diagnose and Chirurgie der Rezidiverender Sinusitis. In : Krajina Z, et. Advances in noe and sinus surgery. Zagreb University. 1985
5. *Wigand, ME; Steiner, W; Jaumann, MP.* Endonasal sinus surgery with endoscopical control from radical operation to rehabilitation of the mucosa. Endoscopy. 1978 ; 10:255-60
6. *Draf, W.* Endoscopy of the para nasal sinuses. Technique, typical findings, therapeutic possibilities. Berlin : Springer-Verlag. 1983
7. *Levine, HC.* Functional endoscopic sinus surgery : evaluation, surgery follow up of 250 patients. Laryngoscope. 1990;100:79-84
8. *Harkness, P; Brown, P; Fowler, S; et al.* A national audit of sinus surgery. Results of the Royal College of Surgeons of England comparative audit of ENT surgery. Clin. Otolaryngology. 1977;22(2):147-51
9. *Ramadan, HH; Allen, GC.* Complications of endoscopic sinus surgery in a residency training program. Laryngoscope 1995:105(9):1018-9
10. *Schaefer, SD; Manning, S; Close, LG.* Endoscopic paranasal sinus surgery indications and considerations. Laryngoscope. 1989;99:1-5

Conference News

The Third MDRF-IDF Postgraduate Course on Diabetes will be held from 29th September to 1st October 2006 at Chennai, India. The meeting will be hosted by the Madras Diabetes Research Foundation, Chennai. For further details contact : Dr. V. Mohan, M.D., FRCP, Ph.D., D.Sc. Madras Diabetes Research Foundation & Dr. Mohans Diabetes Specialities Centre, No-4 Conran Smith Road, Gopalapuram, Chennai-600086, India. Phone : (91 44) [illegible], Fax : (91 44) [illegible], E-mail : [illegible]

Visit website at www.mdrf-asia.com or www.drmohansdiabetes.com for details regarding registration etc.