

Functional endoscopic sinus surgery The experience of Ankara Numune Hospital

Suat TURGUT, M. Umut AKYOL, Cafer ÖZDEM,

2 nd ENT Clinic, Ankara Numune Hospital, Ankara, TURKEY

Nose and paranasal sinuses endoscopy, which has a long history in Ear, Nose and Throat, Head and Neck Surgery, has become very popular as Functional Endoscopic Sinus Surgery (FESS) during last decade all over the world. FESS enables us to cure the paranasal sinus disease functionally and eradicate the etiopathogenesis of the infection with minimal surgical trauma. This makes it the superior technique in paranasal sinus surgery. Long term results of the large series have been appearing in literature recently. The results of 60 patients which are comparable with world literature without any complication are given and the use of this technique in our country is discussed. Success rate of this surgery in the patients with sinus disease and polyposis were found as 80% and 86%, respectively. [Turk J Med Res 1993; 11(4): 195-198]

Key Words: Surgery, Endoscopy, Sinusectomy

Endoscopy of sinuses which has become popular recently, is in fact not a brand new technique in Otolaryngology-Head & Neck Surgery. Hirscherman (1) in 1901 examined the maxillary sinuses with a systoscope for the first time. Maltz (1) is the first author who used the term sinuscopy and examined the maxillary antrum via the inferior meatus route. A new era in endoscopic sinus surgery has begun with worthy efforts of Messerklinger (2) and Wigand (3) during the last two decades. The goal of the Functional Endoscopic Sinus Surgery (FESS), which became the routine therapeutic method in paranasal sinus diseases in most of the centers all over the world is to reestablish the ventilation of sinuses and mucociliary clearance. To reach this goal the key areas for infection in the anterior ethmoid and middle meatus are excised endoscopically with minimal surgical trauma. In patients with widespread sinus disease, it gives the opportunity to perform sphenoethmoidectomy with preservation of the middle turbinate. Though there are a good number of papers revealing the technique of FESS, studies about the middle and long term follow-up series of patients are still few (4). FESS which is new in clinical practice in our country has been used in our clinic since August 1990. The earliest studies

concerning FESS in Turkey were performed at A.N.H ENT Clinics (5-6). This paper presents the results of 60 patients who underwent FESS in our practice.

MATERIALS AND METHODS

Between May 1991 and May 1992, 60 patients had undergone FESS with Messerklinger (2) technique. 33 of these patients were male and 27 were female with the ages ranging from 9 to 70 years. The duration of the symptoms were from 3 months to 18 years. The patients were followed for a period of 5 to 16 months. The patients admitted to our clinic had at least one or more complaints such as headache, stuffy nose, anterior or posterior nasal discharge. A careful history was obtained in every case. The duration of the complaints; nature, localization and the intensity of the headache, history of allergies, previous operations etc. were inquired, noted and routine ENT examination was performed. The patients that are thought to have sinus pathology in the end of the examination and conventional radiology, the ones that do not respond to medical treatment and patients that have polyposis were chosen as surgical candidates. Before the surgery, every patient underwent a coronal, high resolution computerized tomographic (CT) examination of 3 mm sections. Both maxillary sinuses, osteomeatal complexes (key areas), ethmoid and sphenoid sinuses, frontal recesses and sinuses were examined in detail. After the CT examination, surgery was performed under general anesthesia. 11 patients and under local anesthesia in 49 patients. A total of 94 proca-

Received: Feb. 8, 1993

Accepted: May 18, 1993

Correspondence: Dr.Suat TURGUT
2 nd ENT Clinic,

Ankara numune Hospital, Ankara, TURKEY

Table 1.

Symptoms	Number of cases	%
Head and face pain	57	95
Stuffy nose	51	85
Ant. nasal discharge	42	70
Postnasal discharge	42	70
Anosmia-hyposmia	36	60
Allergy-asthma	21	35

Table 2.

Previous procedures	Number of cases
Caldwell-Luc+polypectomy	9
Polypectomy	12*
Caldwell-Luc	3

* Three patients had multiple operations

Table 3.

Pre-op. CT Results	Number of cases
Osteomeatal Complex disease	30
Panpolyposis	21
Pansinusitis	3
Pansinusitis +osteomeatal complex disease	6

dures were performed. Twenty-six of these procedures were unilateral and 34 of them were bilateral. Messerklinger's technique was applied. Following the operation antibiotic and corticosteroid ointment were applied to the cavities. Anterior nasal tamponade was not used except in 8 of the patients who had early post operative bleeding. Patients who underwent FESS because of nasal polyposis were kept under beclamethasone dipropionat nasal spray at least 3 weeks until one week prior to the surgery.

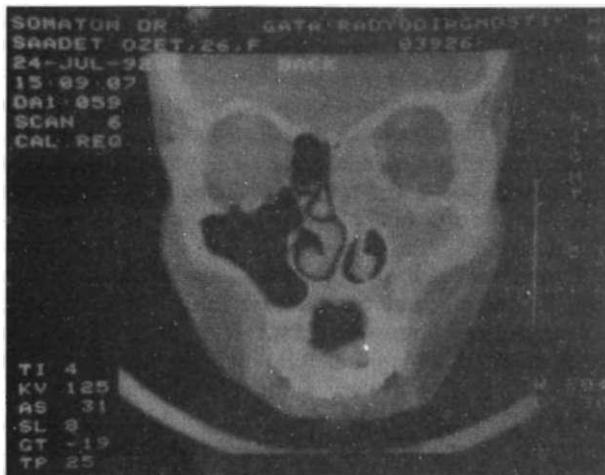


Figure 1. a) Pre-operative CT scan of a case with extensive sinonasal disease with panpolyposis

Patients were reexamined on the post-operative 3rd, 5 th, and 7 th, days endoscopically to remove the crusts from the cavities. Then in the second, fourth and sixth weeks they were seen again and their ethmoid cavities were reexamined and the crusts were removed and the synechia were excised if existed. During the routine follow-ups the patients were asked whether they had the preoperative symptoms. Control CTs were performed at least 8 weeks after the surgery.

RESULTS

Preoperative symptoms of the patients and the frequencies were summarized in Table 1.

In Table 2 the invasive procedures that 21 patients had before FESS were shown.

The preoperative CT results of the patients were shown in Table 3.

In 34% patients maxillary sinus, in 22% anterior ethmoids, in 18% posterior ethmoids, in %18 frontal sinuses, in 6% sphenoid sinuses were involved with pathology. Defect in lamina papyracea were noted in 3 patients and concha bullosa were noted in 7 cases.

Operative results

Three of the 94 operations performed in 60 patients were infundibulotomy+suprainferiorturbinate antrostomy, 41 were posterior ethmoidectomy and 19 were sphenoidectomy. Operative and CT results were showing close similarity, It was also noted that, heavy, viscous and purulent secretions in the sinuses appeared as soft tissue image in some cases.

Post-operative symptoms

Forty-eight of the patients were asymptomatic 1 to 2 weeks after the surgery and most of the preoperative

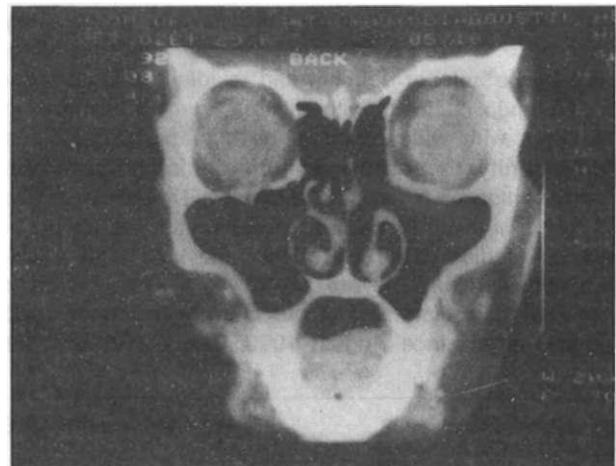


Figure 1. b) Post-operative 8 th week CT scan of the same case

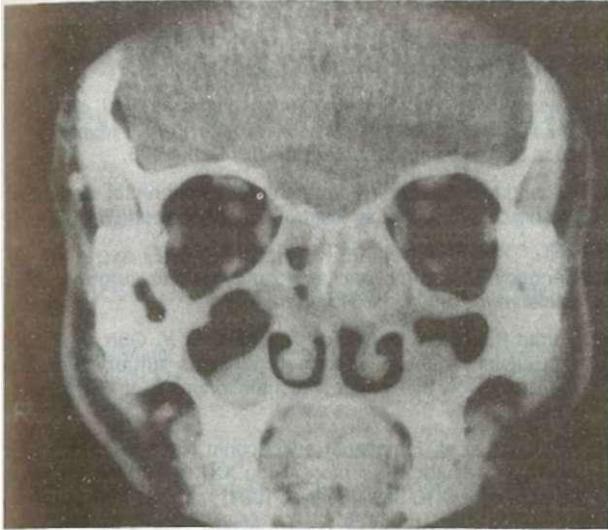


Figure 2. a) Pre-operative CT scan of a case with posterior ethmoid sinus pathology

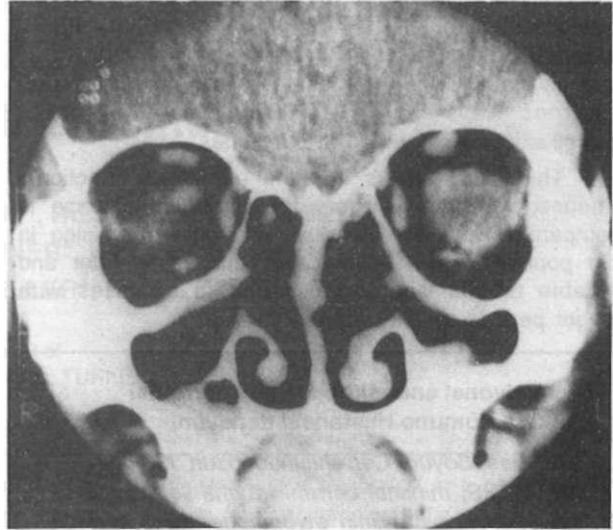


Figure 2. b) Post-operative 8th week scan of the same case

symptoms disappeared in post-op first month. Twelve patients (11 of them had had previous operations) stated that their preoperative complaints were unchanged.

Post-operative CT findings

Post-operative CT were done in 17 patients. Generally results of the post-op CT and symptoms were showing parallelism. In 5 patients CT showed residual disease but they were totally asymptomatic. Pre-operative and post-operative (8th. week) CTs of two patients were shown in Figures 1 and 2.

Complications

Bleeding: 7 cases

Periorbital ecchymosis: 8 cases

Injury of lamina papyracea: 6 cases

Synechy between lateral wall and middle turbinate: 9 cases

Major complications (serious hemorrhage, blindness, CSF leakage etc.): None

DISCUSSION

Though there is not a statistical study about the incidence of sinonasal disease in our country, it is well known that most of the patients attending to out-patients departments of otolaryngology clinics suffer from sinonasal disease. Statistical studies show that in USA annually 31 millions of people (12.5%) have at least one attack of sinusitis (7). If we apply this ratio to our country we can estimate that, 7 million people annually suffer from sinonasal disease.

Patients with headache, stuffy nose, anterior or posterior nasal drainage, attend not only otolaryngologist but mostly to general practitioners, internal

medicine specialist and pediatricians. Chronic cases, being a focal infection source, can lead to more serious diseases like asthma, chronic obstructive lung diseases and systemic complications.

Recently, FESS as a surgical therapeutic technique, has been performed more frequently in sinonasal disease. Though there are promising progress in this subject, there are difficulties in appraising and comparing the surgical results of sinonasal disease. Staging of this disease which is a dynamic process is hard and there is no widely accepted classification in literature. Because of this lack of universal classification comparing results from different centers may not be possible every time. In literature the success of this procedure is stated as the patients being asymptomatic postoperatively. Rice (1) wrote that in a series of 100 patients after a single surgical procedure 83% of the patients were asymptomatic in postoperative second year. Levine (7) gave a success rate of 88.3% in a series of 154 patients with nasal polyposis that underwent FESS and a rate of 80.2% in patients without polyps.

In the present study 48 of 60 patients (80%) were asymptomatic in post-operative first month. This ratio is 18/21 (86%) for the patients suffering from polyposis. This ratio remained the same in the post operative tenth monthly control. Though some patients follow-up period is getting close to the 2 year limit, for a healthier conclusion all the cases of the group must be followed at least two years (1).

FESS which has potential serious and fatal complications must be performed by experienced surgeons, after a carefully designed course based on a detailed anatomic knowledge. Levine (7) presented 8.3% minor and 0.7 major complication rate in 250 operations. Maniglia (8) reported fatal complications of

FESS in US in one of his articles. Stankiewicz (9) presented 7 major, 19 minor complications in 90 patients. Stammberger (10), on the other hand, stated that except 2 CSF leakages there are no major complications in his series of 4000 patients. Thirty minor complications were noted in our series.

This study shows that the results of Functional Endoscopic Sinus Surgery for sinonasal disease is comparable with the literature and quite promising in our population. We believe, we shall give better and reliable results with larger numbers of cases with longer periods of follow-ups in the future.

Fonksiyonel endoskopik sinüs cerrahisi Ankara Numune Hastanesi deneyimi

KBB-Baş Boyun Cerrahisinde uzun bir geçmişi olan FESS, minimal cerrahi travma ile paranazal sinüslerdeki patolojinin etyopatogenezine yönelik tedavi sağlaması özelliği ile klinik yararlılığını geçtiğimiz dekkatta ispatlamış ve tüm dünyada yaygın kullanılır hale gelmiştir. Kliniğimizde iki yılı aşkın bir süredir kullanılan bu tekniğin uygulandığı 60 hastalık bir serinin sonuçları dünya literatürü ile karşılaştırılabilecek sonuçlar vermektedir.

[TurkJMedRes 1993; 11 (4): 195-198]

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