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Original Article

Functional endoscopic sinus surgery (FESS) for the management of chronic rhinosinusitis

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Abstract:

Objective: *To see the efficacy of surgery (FESS) and quality of life of the patient after Functional Endoscopic Sinus Surgery (FESS) for chronic rhinosinusiotis.*

Methods: *It was a prospective type of study carried out Otolaryngology and Head-Neck Surgery Department of BIRDEM Hospital and Shaheed Suhrawardy Hospital, Dhaka from July 2009 to June 2010. Total 60 (sixty) patients were included in this study.*

Results: *In this study, 22(36.67%) patients were operated for Ethmoidal polyp, 19(31.67%) for chronic rhinosinusitis, 9(15%) for Antrochoanal polyp, 6(10%) for Rhinosporidiosis and 4(6.67%) for Inverted papilloma. Per operative difficulties were gross DNS 07 (11.67%), unusual bleeding 6(10%), concha bullosa 5(8.33%). Post operative complications were periorbital echymoses (10%), Synechiae (1.67%), Epiphora (1.67%), infection(1.67%). Complete relief of symptoms were noted in 81.67% cases. Majority of patients 46(76.67%) were released from the hospital on 2nd post operative day.*

Conclusion: *Instead of some limitations, outcome of functional endoscopic sinus surgery is rapidly flourishing, highly effective, less time consuming, less hospital stay & less expensive.*

Key Words*: Functional endoscopic sinus surgery (FESS), chronic rhinosinusitis.*

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Introduction:

Rhinosinusitis is a well-recognized clinical syndrome affecting patients of all ages and gender. Sinusitis is defined as a condition manifested by inflammation of the mucous membranes of the nasal cavity and paranasal sinuses, fluids within these cavities and/or the underlying bone.[1] Chronic rhinosinusitis is sinusitis lasting more than 12 weeks of persistent symptoms and signs with no complete resolution.[1,2]

Chronic rhinosinusitis is diagnosed by the presence of two or more of the following major factors: facial congestion/fullness, nasal obstruction, nasal discharge (purulent) or

discoloured postnasal drainage, hyposmia/ anosmia (smell disorder), or one major and two of the following minor factors: headache, halitosis, fatigue, dental pain, cough or ear pressure/fullness.

Functional endoscopic sinus surgery (FESS) is today the most common type of surgery for chronic Rhinosinusitis FESS is minimally invasive which means that it is done without an open incision and is much less invasive than older surgery methods.[1]

The health and normal function of sinuses and their lining mucus membranes depends primarily on two important factors- ventilation and drainage function of the sinuses.

Normal ventilation and drainage of the major sinuses is usually altered if there is any abnormality in the osteomeatal complex. This is the major drainage pathway of sinuses and, as it is the most narrow area, obstruction most likely to occur due to any pathology in the nose and paranasal sinuses. Functional Endoscopic Sinus Surgery (FESS) aims at correcting the underlying pathology and maintaining physiological function and anatomical structures of the nose and paranasal sinuses as much as possible. A study conducted by Bassiouny et al. showed that maxillary sinus mucosa in chronic sinusitis return towards normal with the improvement of ventilation and drainage of maxillary sinus following FESS.[3]

After thorough history taking, physical examination along with conventional radiography, pre-operative CT scan is now generally accepted as the gold standard to demonstrating both the extent of disease and the fine detailed anatomy of the sinuses.[4]

A significant component in the success of endoscopic surgery is meticulous cleaning of the surgical cavity.[5] Patients are seen frequently post-operatively to clean debris and clots, to avoid synechiae and to monitor healing. Long term post-operative follow-up up to 3 to 6 month is necessary to monitor healing.

In experienced hands reported complications of FESS are surprisingly few. The most common complications are orbital ecchymoses, hemorrhage and synechiae. The most catastrophic very rare complication of FESS is blindness resulting from damage to optic nerve. Another major complication is CSF leak

Functional endoscopic sinus surgery (FESS) has now become well-established for the treatment of chronic rhinosinusitis refractory to medical treatment.

The interest in endoscopic sinus surgery is gradually increasing day by day. Important innovations in radiology, instrumentation and philosophy have greatly contributed to our ability to diagnose and treat sinus diseases. In our country endoscopic sinus surgery is gradually getting popularity. But there are a few studies on functional endoscopic sinus surgery at present. Purpose of this study is to assess the efficacy, complications and their management and outcome of FESS.

Methods:

It was a prospective type of study. Total 60 (sixty) patients were included in this study. From July 2009 to June 2010. Otolaryngology and Head-Neck Surgery Department of BIRDEM Hospital and Shaheed Suhrawardy Hospital, Dhaka.

Inclusion criteria: Clinically and radiologically suggested nose and paranasal sinus diseases such as nasal polyposis, chronic recurrent acute sinusitis, rhinosporidiosis etc. Patients did not respond to adequate medical and conservative surgical treatment (Antral washout).

Exclusion criteria : Malignant conditions of nose and paranasal sinuses.The patients

diagnosed as acute sinusitis intracranial complications.Patients with intracranial complications

Results:

Total number of patients was 60 of which 22(36.67%) patients were operated for Ethmoidal polyp, 19(31.67%) for chronic rhinosinusitis, 9(15%) for Antrochoanal polyp, 6(10%) for Rhinosporidiosis and 4(6.67%) for Inverted papilloma (Table-I). Per operative difficulties were gross DNS 07 (11.67%), unusual bleeding 6(10%), concha bullosa 5(8.33%) (Table-II). Post operative complications were periorbital echymoses (10%), Synechiae (1.67%), Epiphora (1.67%), infection(1.67%), haemorrhage (3.33%) (Table-III). Complete relief of symptoms were noted in 81.67% cases(Table-IV). Majority of patients 46 (76.67%) were released from the hospital on 2nd post operative day(Table-V).

Table -I

Indications of FESS (n=60)

Name of Disease	Number of patients	Percentage
Chronic rhinosinusitis	19	31.67
Ethmoidal polyp	22	36.67
Antrochoanal polyp	9	15.00
Rhinosporidiosis	6	10.00
Inverted papilloma	4	6.67

Table-II

Per-operative difficulties of FESS (n=60)

Difficulties	Number of patients	Percentage
Unusual hemorrhage	6	10.00
Gross DNS	7	11.67
Concha bullosa	5	4.33
No difficulties	42	70.00

Table -III

Post-operative complication of FESS (n=60)

Complications	Number of patients	Percentage
Epiphora	1	1.67
Synechiae	1	1.67
Periorbital echymeses	6	10
Infection	1	1.67
Haemorrhage	2	3.33
Blindness	0	0
CSF leakage	0	0
No complication	49	81.67

Table-IV

Outcome of FESS (n=60)

Outcome	Number of patients	Percentage
Completely symptom free	49	81.67
Partial relief	7	11.67
Persistence of diseases	4	6.67

Table-V

Hospital stay (n=60)

Duration	Number of patients	Percentage
24-48 hours	46	76.67
48 hours to 07 days	14	23.33

Discussion:

Total 60 (sixty) patients were included in this study who were fulfilling certain inclusion & exclusion criteria, were studied prospectively in Otolaryngology and Head-Neck Surgery Department of BIRDEM Hospital and Shaheed Suhrawardy Hospital, Dhaka from July 2009 to June 2010.

Several disease entities were treated endoscopically in this study which is consistent with other standard studies.[6,8,10,11] In this study found (36.67%) patients were operated for Ethmoidal polyp, (31.67%) patients for chronic rhinosinusitis, (10%) patients for Rhinosporidiosis, (6.67%) for Inverted papilloma.

In this series of FESS, most of the patients 42 (70%) were operated without facing any difficulties. But, some difficulties like, Gross DNS 07 (11.67%), unusual bleeding 6(10%) and concha bullosa 5(8.33%) were faced and managed accordingly.

No post operative complications of FESS were found in 49(81.67%) patient, periorbital echymeses 6(10%),haemorrhage 2(3.33%) Synechiae 1(1.67%), Epiphora 1(1.67%) and infection 1(1.67%) were found during post operative follow up. Their findings were consistent with the study of Rahman MJ et al.[8] inconsistent with the study of Gross et al.[6,7] where 1% synechiae was found. This study were consistent with the study of Jin,-G. et al.[12]

Overall 81.67% had complete relief symptoms after FESS, and 11.67% patients were partial relief and 6.67% persistence of diseases. This study is similar with the study of Smith LF et al.[9]

Majority of patients (76.67%) were released from the hospital after 02 days of FESS and 13 (23.33%) were after 07 days. This study is inconsistent with Rahman MZ et al. series.[8]

Conclusion:

Successful outcome of operation can be obtained by careful evaluation and patients selection by history, examination and proper imaging of the sinuses.Proper training in the anatomy by cadaveric dissection is mandatory to acquire proficiency in functional endoscopic sinus surgery.

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