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ROLE OF FUNCTIONAL ENDOSCOPIC SINUS SURGERY IN SINO NASAL DISEASES

Sadhna Yadav — Assistant Professor Dept Of Otorhinolaryngology & Head Neck Surgery Rohilkhand Medical College & Hospital Bareilly(Up).

Amit Kumar Rana* — Senior Resident Dept Of Otorhinolaryngology & Head Neck Surgery Rohilkhand Medical College & Hospital Bareilly(Up). *Corresponding Author

Abhiniti Sinha — Ent Surgeon, Muzaffarpur, Bihar

ABSTRACT

INTRODUCTION:- FESS is the preferred treatment for nasal pathologies & is the widely accepted surgical procedure for the treatment of chronic Inflammatory & infectious diseases of PNS. The goal of surgery is to establish ventilation & facilitate drainage from PNS, thereby restoring the sinus ventilation & function.

AIM & OBJECTIVES: - 1.To evaluate incidence of sino nasal disease with the help of nasal endoscopy. 2. To assess the efficacy, safety & benefits of FESS in sino nasal disease in terms of morbidity, mortality & recurrence of disease.

MATERIAL & METHODS: - 50 Patients were included in the study. Clinical, radiological and endoscopic evaluation was done and Clinical symptoms were compared after FESS.

OBSERVATION/ RESULTS: - 96 % patients presented with Nasal discharge which was the chief complain followed by nasal obstruction in 88 %. 90% patient's X-ray revealed haziness of maxillary sinus & 28% of frontal sinus. Patients were completely satisfied with the result (CS) of surgery in 50.35% cases out of 50 patients under study, 41.09 % Patients were generally satisfied with the result (GS) after surgery and 8.56 % patients did not have improvement (NI) after surgery.

CONCLUSION: - FESS is targeted endoscopic intervention introduced 1978. It is a safe & effective method of treatment in cases of chronic sino nasal diseases with or without nasal polyposis.

KEYWORDS : FESS, Bulla ethmoidalis, Anatomical variation, Paradoxical turbinate

INTRODUCTION: -

Functional endoscopic sinus surgery (FESS) is the preferred treatment for chronic rhinosinusitis(CRS) currently and is the widely accepted surgical procedure for the treatment of chronic inflammatory & infectious diseases of paranasal sinuses(PNS)[1]. Middle meatus was first examined endoscopically by Hirsh Mall in 1901 using modified cystoscope. The goal of surgery is to establish ventilation and facilitate drainage from PNS, thereby restoring sinus ventilation & normal functions[3,4,5,6]. CRS is an inflammatory disease of PNS defined by presence of at least two out of four cardinal symptoms (Facial pain/pressure, hyposmia/anosmia, nasal drainage and nasal obstruction) for at least 12 consecutive weeks. Approximately 25 to 30 % of patients with CRS are associated with nasal polyposis. Messenklinger pioneered the study of endoscopic anatomy & pathophysiology of the paranasal sinuses, publishing his experience with FESS in 1978 [7] and established the significance of sinus ventilations & patterns of muco-cilliary clearance. Recently diagnostic endoscopy & imaging study jointly form the corner stone in the evaluation of sino nasal disease. This forms the basis for the new concept of FESS. Use of microdebrider further improved the removes the pathologic tissue while preserving normal mucosa.[16]

AIM & OBJECTIVES:-

(1) To evaluate sino-nasal disease with the help of nasal endoscopy.
(2) To assess the efficacy, safety & benefits of FESS in sino-nasal disease in terms of morbidity, mortality recurrence of disease.

MATERIAL & METHODS:

It was a retrospective study conducted at MGMMC Kishanganj, Bihar during a period from August 2013 to September 2014. A total of 50 patients were taken.

All the patients in the study group were subjected to a detailed history of a wide spectrum of presenting symptoms. Nasal endoscopy was done using Hopkins rod endoscope. CT scan of PNS was done in all patients.

Messenklinger technique of FESS was performed in all the patients. Post operative patients were followed up for a period of six months in outpatient department.

INCULSION CRITERIA: -

Patients who were clinically diagnosed as having chronic rhinosinusitis and not responding to medical management with or without nasal polyposis above 10 years of age were included in the study.

EXCLUSION CRITERIA: -

Patient diagnosed with acute infection of nose & paranasal sinuses above 10 years of age were excluded from the study.

TABLE 1. AGE DISTRIBUTION.

Total of 50 patients were students age ranging from 10 yrs to 60 years. Maximum number of patients were in 31-40 yrs of age group which constituted (18) 36% of total patients.

AGE GROUP	NO. OF PATIENTS	PERCENTAGE (%)
10-20	6	12.0%
21-30	8	16.0%
31-40	18	36.0%
41-50	10	20.0%
51-60	8	16.0%
TOTAL	**50**	**100.0%**

TABLE 2. SEX DISTRIBUTION.

In the study males were 30(60%) & female 20(40%), male to female ratio being 1.5:1.

SEX	NO. OF PATIENTS	PERCENTAGE (%)
Male	30	60.0%
Female	20	40.0%
TOTAL	**50**	**100.0%**

TABLE 3. PRIMARY COMPLAINTS.

In the study the chief presenting symptoms were nasal discharge followed by nasal obstruction. Nasal mass, headache & bleeding were other symptoms.

SYMPTOMS	NO. OF PATIENTS	PERCENTAGE (%)
Nasal discharge	48	96.0%
Nasal obstruction	44	88.0%
Mass in nose	23	46.0%
Headache	22	44.0%
Nasal Bleeding	4	8.0%

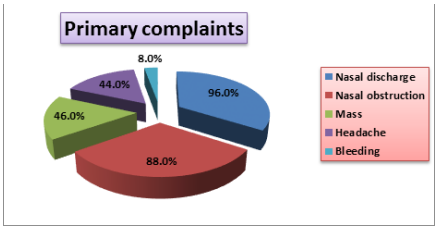

TABLE NO. 4 X-RAY PNS WATERS VIEW FINDINGS

SINUS INVOLVED	NUMBER OF CASES	Percentage
Maxillary sinus haziness	45	90.0%
Frontal sinus haziness	14	28.0%

TABLE NO. 5 DETECTION OF SINUS INVOLVEMENT OF CT SCAN (MUCOSAL CHANGES)

Site of involvement	Number of Patients	Percentage(%)
Frontal	13	26.0%
Anterior ethmoid	27	54.0%
Posterior ethmoid	14	28.0%
Maxillary	38	76.0%
Sphenoid	7	14.0%

TABLE 6. FINDINGS ON CT SCAN.

ANATOMICAL VARIATIONS	NO	PERCENTAGE (%)
Deviated nasal septum	31	62%
Concha Bullosa	24	48%
Paradoxical Middle Turbinate	14	28%
Aggar Nasi Cells	10	20%
Haller Cells	7	14%

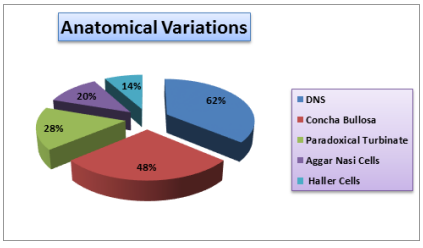

TABLE 7 : NASAL ENDOSCOPIC FINDINGS

Findings	Total Cases		Unilateral		Bilateral	
	No	%	No	%	No.	%
DNS - Right - Left	32	64.0	8 24	24.0 75.0	-	-
Middle Turbinate Hypertrophy	14	28.0	10	71.43	4	28.57
Inferior Turbinate Hypertrophy	28	56.0	18	64.29	10	35.71
Polyp in Nasal Cavity/Middle Meatus	23	46.0	8	34.78	15	65.22
	34	68.0	8	23.53	26	76.47
-Ethmoidal - Antrochoanal	16	32.0	16	100	-	-
Mpd In Middle Meatus	21	42.0	13	61.90	8	38.10
Enlarged Agger Nasi	3	6.0	2	66.67	1	33.33
Paradoxically Curved Mt	5	10.0	4	80.0	1	20.0
Edematous/Polypoidal Up	6	12.0	5	83.33	1	16.67

TABLE – 8 : POST-OPERATIVE SUBJECTIVE IMPROVEMENT :-

Sl. No.	Symptoms	Total No.	CS	%	GS	%	NI	%	Total
1.	Nasal Discharge	48	20	41.67	27	56.25	1	2.08	97.92
2.	Nasal Obstruction	44	20	45.45	23	52.27	1	2.27	97.73
3.	Headache	22	8	36.36	12	54.55	2	9.09	90.91
4.	Nasal Mass/Polyp	23	18	78.26	4	17.39	1	4.35	95.65
5.	Epistaxis	4	2	50.00	1	25.00	1	25.00	75.00
	Total	141	69	50.35	67	41.09	6	8.56	91.44

Chi-Square = 17.67, p=0.023, Significant.

Patients were completely satisfied with the result (CS) of surgery in 50.35% cases out of 50 patients under study, 41.09 % Patients were generally satisfied with the result (GS) after surgery and 8.56 % patients did not have improvement (NI) after surgery.

The overall satisfactory rate can be calculated by adding percentage of completely satisfied and generally satisfied patients which was 91.44%.

OBSERVATION AND RESULTS: -

(AGE & SEX)

All information about the cases was compiled & the relevant date were analyzed & shown in tabulated form and the observations were statistically analyzed. Our study included total of 50 patients out of which 30 were males and 20 were females which constituted 60% & 40% respectively ratio being 1.5:1. Maximum number of patient belongs to the age group of 31-40 years 10 patients in the age group. 10 patients in the age group 41-50, 8 patients in the age group 31-30 & 51-60 each and 6 patients belonged to 10-20 year of the age group. In the present study 96% of patients presented with nasal discharge which was the chief complain followed by nasal obstruction in 88%. Mass in nose in 46 % headache in 44% and nasal bleeding in 8%.

X-RAY PNS (WATER VIEW) FINDINGS

Among 50 patients, 90% of the patients X-ray revealed haziness of maxillary sinus & 28% of frontal sinus.

ANATOMICAL VARIATIONS :

Out of 50 patients 31 had DNS, Concha bullosa seen in 48% which contributed to 24 patients of the total. 14 patients (28%) should paradoxical middle turbinated followed by agger nasi cells in 10 patients (20%) & Haller cells in 7 patients (14%).

DISCUSSION:

FESS is the widely accepted surgical procedure for the treatment of PNS diseases1. FESS like all minimally invasive surgery is designed to combine an excellent outcome with minimal patient discomfort. FESS result in minimal post operative discomfort as compared with traditional technique. The study conducted by Amminu Bakari[8] & Levrine et al[9] had maximum number of patient in between 31-40 year of age with mean age 33.3 & 35.6 respectively. Our study showed maximum patients in the age group 31-40 yrs with total of 18 cases mean age was 36.5 ± 12.6 yrs.

In the study, 30(60%) were male & 20(40%) were female patients with M:F ratio 1.5:1. Abtin et al had 9(63.9%) males & 22(36%) females with ratio 1.7:1 in their study. Similar study conducted by Amminine Bakari etal showed 42(55.2%) males & 34(44.7%) females & had a ratio 1.2:1.

In our study the most common symptoms was nasal discharge 48(96%), next was nasal obstruction 44(88%) followed by nasal mass 23(46%) and headache 22(44%) which is similar with literature[10,11]. PNS endoscopy was carried out preoperatively in all the patients. The result noted were similar in on study.

Mucosal abnormalities range from minimal mucosal thickening of total sinus opacifications. In the present study 90% patients should maxillary sinus haziness on X-ray & 28% showed frontal sinus haziness. Other study also supports this[17] CT PNS revealed DNS 62%, conchea Bullosa – 45% followed by paradoxical MT 28%, supported by other study[18].

The most common anatomical variations associated were DNS 64% followed by Concha bullosa (48 %) & Paradoxical middle turbinate which were supported by other studies[12,13].

Rigid endoscopy helped in careful manipulation & removal of posteriorly placed nasal foreign body & rhinolith under direct vision.

Study of Keck eteal (14) & Hade etal (15) supported the conclusion.

CONCLUSION: -

FESS is targeted endoscopic intervention introduced in 1978. It is a safe & effective method of treatment in cases of chronic sinonasal diseases with or without nasal polyposis.

REFERENCES: -

1. Magne MR. : A study of FESS technique mymem singh Med J 2004: 13:39 – 42.
2. Dola HR Stemen DS. Endoscopic Para Nasal Sinus surgery. Lippincott withness and hilkins 3rd edition 2004.
3. Stamberger. H. FESS the messenklinger technique. Philadephia. Decker 1991 : 283.
4. Wigand ME. Endodcopic surgery of PNS and anterior skull base. New York Theme medical publishers 1990 : 1-2.
5. Kennedy ME Zinrech, SJ Rosenborumn AE, Johns ME FESS. Theory and diagnostic enalnation aerch otolaryngol, 1985; 111:576-82
6. Kennedy DW; FESS technique. Arch otolaryngol 19*85; 111 : 643-9

7. Rich Dale H, Steven D, Schaefer endoscopic PNS surgery, 2nd edition, lipnnesrt New York 1995 (Pub Med).
8. Aminau B, Olushola AA, Adeyi AA Etal, Chronic pathological profile of S.N. Masses. An experience in natronal ear care centre Kaduna Nigeria Bionedical central nassarc Note 2010, 3: 186/.
9. Abin T, Amy KH. Aushtotish K. indication, technique safety & accuracy of office based N. endoscopy with biopsy for S.N. neoplasum. International foum of allergy & rhinology 2011 ; 225*28.
10. Md Golam Mustafa, Khabiruddin Ahmad, Mahmudal Hasan, Endoscopic Sinus Six. Axperence of 60 cases, Bangladesh otolaryngol 2011; 17(2); 104-109 (pub med).
11. R.H. Kamel. N. Endoscopy in cheonec maxillary sinusitis. The journal of otolaryngology & otology. March 1989; 103:275-278 (pub Med)
12. Dua K. Chopra H, Khurana As, Mungal M. CT Scan variations in the sinusitis. Indian Jradiol imaging 2005, 15:315-20.
13. Nainu M. Bakh Schaci M. The major obstructive inflammatory patterns of S.N. ds in 250 candidates of FESS. The Indian journal of Otolaryngology, winter 2006 winter; 17 (42) : 9-14.
14. Keck T Liener K, Strater J. et al. Rhinolith of the nasal septum International journal of paediatric otolaryngology 2005; 53:225-28
15. Hade U Gho ssaini S, Zzytouw Rhinolithiasis a forgotten entity otolaryngology head – neck surgery 2002, 126:48-51.
16. Abdullah Al-kMujanini, Uperder Wali, Mazin Alkhabori. Functional endoscopic sinus surgery; Indications and complications in the ophthalmic field OMJ. 2009; 24:70-80.
17. Hemant chopra, nasal polyp : a clinical, histopathological and radiological profile. Indian J Otolaryngol Head Neck Surg. 2008 Jun; 60(2) : 112-6, dol: 10.1007/S12070-007-0118-y. Epub 2008 May 14.
18. R. Zojaji Md, M. Mirzdeh MD, S. Naghibi Md. Comparative Evaluation of Properative CT Scan and Intraoperative Endoscopic Sinus Surgery findings In Patients with chronic rhinosinusitis. Iran J Radiol 2008; 5(2) : 77-82.