

Original Article

Nasal polypectomy and endoscopic sinus surgery for the management of ethmoidal polyp

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Abstract:

Introduction: The efficacy of sinus surgery for the treatment of ethmoidal polyp continues to be an issue of debate among otolaryngologists. A study was undertaken to compare the efficacy of Functional Endoscopic Sinus Surgery (FESS) over intra nasal polypectomy in treatment of ethmoidal polyp.

Methods: Sixty patients of either sex above 18 years of age suffering from ethmoidal polyp were included in the study. The patients were discharged after surgery and were called for endoscopic examination during subsequent follow up.

Results: Final results were recorded 6 months after the operative procedure. The results suggest that FESS is highly effective for the treatment of ethmoidal polyp with the recurrence rate being as low as 10% and with no major complications.

Conclusion: This study will help in evaluation of FESS as better surgical option for the management of ethmoidal polyp.

Key words: Ethmoidal polyp; functional endoscopic sinus surgery; intranasal polypectomy

Introduction:

The word "polyp" which is originally Greek, has undergone Latinization and means [poly-pous] many footed. Nasal polyps are defined as pearly white, painless, prolapsed

pedunculated parts of the nasal mucosa. These are unique in position and composition.

Small polyps may not produce symptoms. Symptom producing polyps can cause nasal airway obstruction, postnasal drainage, dull headache, snoring, and rhinorrhoea. Associated hyposmia or anosmia is common¹.

Nasal polyps remain a significant challenge to the treating physician. The treatment modalities of nasal polyps encompass both medical and surgical modalities following the assessment of the patient. Surgical treatment comprises of polypectomy which has a high recurrence rate, intranasal ethmoidectomy – a blind procedure and external ethmoidectomy, with its inherent complication of external scar. All these shortcomings are overcome by

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FESS, which is fast becoming the surgical treatment of choice for nasal polyp disease. The first attempt at nasal and sinus endoscopy was performed by Hirschmann in 1901 using modified cystoscope. Since then, many advances have been made in the field of endoscopic sinus surgery².

In the early 1970s, Messerklinger theory that the anatomical variations of the lateral nasal wall could cause obstruction of both drainage and ventilation of the sinuses, initiated the development of a functionally oriented surgical approach³. The functional endoscopic sinus surgery technique provides a tool by which the clinician can accurately diagnose, meticulously and atraumatically perform surgery and precisely provide post-operative care and follow up for nasal polyp diseases⁴. The present study was undertaken to evaluate the efficacy of functional endoscopic sinus surgery in the treatment of ethmoidal polyps.

Methods:

Study period was from January 2007 to December 2007, total 60 patients of ethmoidal polyp from ENT departments of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka Medical College Hospital (DMCH) and Combined Military Hospital (CMH) Dhaka were selected for the purpose of carrying out a prospective study on this topic. All the patients were admitted and over 18 years of age who would be treated with either FESS or intranasal polypectomy. The patients were evaluated by questionnaire, clinical examination, imaging techniques both pre and post-operatively, and followed up for up to six months. All information's like particulars of patients, clinical evaluation, relevant investigations, operative findings and post-operative follow-up recorded in a standard datasheet proposed for present study. Results compared and tabulated in order to obtain a comparative analysis between FESS and intranasal polypectomy. Statistical analysis was performed using the SPSS software package.

Result:

Sixty patients were included in this study. Majority of patients were between 21-40 years 24(70%). Majority of endoscopic surgery were done under general anaesthesia 21 (70%) on the other hand all intranasal polypectomies were done under general anaesthesia. After FESS common complications were crusting in 6(20%), haemorrhage in 6(20%) and synechiae in 5(16.65%). No major life threatening complication was seen. In intranasal polypectomy major complications were haemorrhage in 9(30%), crusting, injury to middle turbinate and other normal structures and synechia 7(23.33%). No major life threatening complications was seen. In FESS, less stay in hospital gives more turnovers of the patients and less costs than conventional surgery like intranasal polypectomy. Follow up findings after FESS revealed crust in 6(20%) cases up to first month and there were 3(10%) cases with recurrence of polyp. Haemorrhage (30%), synechiae (23.33) and crusting (23.33) were the most frequent complications after intranasal polypectomy. Follow up findings after intranasal polypectomy revealed crust in 23.33% cases up to first month and there were recurrence of polyp in 6(20%) cases.

Table-I
Age distribution

A. FESS (n=30)

Age	Number of patients	Percentage (%)
11-20	2	6.67
21-30	15	50
31-40	9	29.97
41-50	2	6.67
51 -60	2	6.67
61 and above	0	0
Total	30	100

B. Intranasal polypectomy (n= 30)

Age	Number of patients	Percentage (%)
11-20	3	10
21-30	9	30
31-40	13	43.33
41-50	3	10
51-60	1	3.33
61 and above	1	3.33
Total	30	100

Table-II
Type of anaesthesia

A. FESS (=30)

Anaesthesia	Number of patients	Percentage (%)
General	21	70
Local	9	30

B. Intranasal polypectomy (n= 30)

Anaesthesia	Number of patients	Percentage (%)
General	30	100
Local	0	0

Table-III
Complications

A. FESS (n=30)

Complications	Number of patients	Percentage (%)
Minor		
Haemorrhage	6	20
Crusting	6	20
Synechiae	5	16.65
Infection	1	3.33
Periorbital ecchymosis	1	3.33
Major		
Injury to orbit	0	0
Diplopia	0	0
Injury to brain	0	0
CSF leaks	0	0
Nasolacrimal duct injury & epiphora	0	0
Blindness	0	0

B. Intranasal polypectomy (n= 30)

Complications	Number of patients	Percentage
Minor		
Haemorrhage	9	30
Synechiae	7	23.33
Crusting	7	23.33
Injury to middle turbinate and other normal structures	7	23.33
Infection	3	10
Major	Nil	

Table-IV
Duration of hospital stay (n= 60)

Duration	Procedure FESS	Intranasal polypectomy	Total
Up to 2 days	27	15	42
> 2 days	3	15	18
Total	30	30	60

Discussion:

In the present study, majority 24(70%) of the patients were in the age group of 21-40 years in FESS, being consistent with the findings of other studies (70%)⁵⁻⁷. Majority 22(73.33%) of the patients were in age group of 21-40 years in conventional surgery.

In this study majority of the patients of FESS, 21(70%) were operated under general anaesthesia. Local anaesthesia was given in 9(30%) cases. This result was similar to some other studies⁸⁻¹⁰. On the other hand all 30 cases of intranasal polypectomy were operated under general anaesthesia.

In FESS, minor complications like haemorrhage occurred in 6(20%), crusting in 6(20%) synechiae in 5(16.65%), infection in 2(6.67%). Major complications like severe haemorrhage were not found. No life

threatening complications such as CSF leak, orbital injury, blindness was noted. In conventional surgery, minor complications occurred like haemorrhage in 9(30%), synechiae 7(23.33%), crusting 7(23.33%), injury to middle turbinate and other normal structures 7(23.33%) cases and infection 3(10%). Major complications were not observed. The complications were similar to those of other reported series¹¹. Stammberger reported two cases of CSF leak and no other major complications in 4000 cases¹².

In FESS, majority of the patients 25(83.33%) were released from the hospital within 24 hours of operations, but in intranasal surgery, most of the patients were released from the hospital from 24 hours to 3rd day as nasal packing causing more morbidity. This result was almost similar to the findings of the study by Danielsen Arild where 90% patients were treated as day case basis¹³.

In post-operative follow up, up to two weeks revealed crust in 6 cases, blood clot in 11 cases, nasal obstruction in 7 cases, synechiae in 1 case in FESS; but in intranasal surgery blood clot was found in 15 cases, crust in 23 cases and nasal obstruction in 9 cases and synechiae in 2 cases. In FESS, there was recurrence in 3 cases (10%) but in intranasal polypectomy recurrence of ethmoidal polyp was in 6(20%) case after 6 months.

So it is clear that success rate was high and morbidity was low in the series of FESS. Functional endoscopic sinus surgery which offers clear illumination of the sinonasal cavity, a delicacy for handling tissues within the sinonasal cavity, the ability to deal with disease while preserving normal healthy structure and mucosa, creating physiologic drainage and aeration of the paranasal sinuses. To emphasize on the new important updates better results have been obtained by

the use of high pressure water jet (HPWJ) and microdebrider in endoscopic sinus surgery. The intraoperative use of a microdebrider as a stereotactic three-dimensional (3D) navigation instrument in paranasal and frontobasal surgery offers a new method of anatomical orientation and increases the safety and accuracy of surgical procedure¹³.

Conclusion:

Modern technology of functional endoscopic sinus surgery has provided a safe, efficient method for dealing with different sinonasal diseases including ethmoidal polyp. Successful outcome of operation can be obtained by careful evaluation and patients, selection by history, examination and proper imaging of the nose and paranasal sinuses. Most often surgery can be safely and effectively done under local anaesthesia. A cautious gradual approach to intranasal endoscopic sinus surgery is emphasized. Proper training in the anatomy by cadaveric dissection is mandatory to acquire proficiency in functional endoscopic sinus surgery.

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