

Role of endoscopic surgery in management of nasal polyps

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Abstract: *Aims:* The aims of the present study were to identify the type and origin of the nasal polyps, to accomplish complete removal of the nasal polyps and to establish natural drainage of the sinuses. *Methods and Material:* A prospective study on 44 fresh cases of nasal polyp was done. The cases were diagnosed based upon the clinical examination and investigations. The study included patients presenting with clinical features of nasal polyps of all age groups, both sexes, including recurrence cases. *Results:* Most cases (45.45%) were diagnosed with Antrochoanal polyp followed by Ethmoidal polyp (34.10%) and the rest (20.45%) were suffering from polyp arising from other sites. The complication rate was less (9.09%) of which 2 cases were of bleeding during the surgery and the rest 2 cases where post-operative complications presenting with synechia formation. In follow up, 95.45% cases were symptom free at the end of 6th month post-operatively. The recurrence rate of nasal polyposis was 4.55% (one each of antrochoanal and ethmoidal polyps). *Conclusions:* Thus this study substantiates that endoscopic management of nasal polyp is the best available modality of treatment of nasal polyps.

Keywords: Endoscopic Management, Ethmoidal, Antrochoanal, Site of Polyp.

Introduction

Nasal polyposis is the most common chronic disease affecting the mucous membrane of the nasal cavities and the paranasal sinuses, nasal polyposis is the most frequent indication for the surgical intervention in the nose and paranasal sinuses [1]. Multiple factors including infections, allergy, trauma, chemical, metabolic diseases and psychogenic factors have all been implicated as possible etiologies of nasal polyposis [2].

Even with numerous methods of treatment of polyps, it seems the polyps are challenging condition to ENT Surgeons. Conventionally, these are treated by nasal polypectomy with avulsion technique in children and by Caldwell Luc's operation in adult. In recent times successful results of endoscopic removal have been reported [3]. The functional endoscopic sinus surgery technique provides a tool by which the clinician can accurately diagnose, meticulously and with minimum trauma perform surgery and precisely provide postoperative care

and follow up for nasal polyp disease and least chance of recurrence [4]. The propensity of polyps to recur after various methods of treatment made us to make an attempt to test efficacy of endoscopic surgery to minimize complications & prevent recurrence of nasal polyps. Thus the present study was taken up with aim to identify the type and origin of nasal polyps, complete removal of the nasal polyps and to establish natural drainage of the sinuses.

Material and Methods

Present study was conducted in amongst 44 patients diagnosed & treated in the Department of Otorhinolaryngology. Patients were selected based on clinical & diagnostic findings of nasal polyp in all age groups and both sexes. Selected patients were evaluated by complete examination according to a defined Performa. Detailed history with thorough clinical examination along with routine blood investigations like Hb%, TC,

DC, ESR, BT⁺, CT⁺, Urine for Albumin, Sugar, & Microscopy, HIV, HbsAg were performed. As and when required radiological investigations like Paranasal sinus view and CT scans were taken. Treatment of acute infections was done conservatively before surgery with prophylactic antibiotics to all patients starting one day prior to surgery for 5 days.

Patients were operated by transnasal endoscopic polypectomy. Intra-operative complications were observed. The patients were discharged when fit and was strictly called for follow – up on the 1st week, 4th month and 6th month from date of surgery. On the following visits, the patients were examined with a 0° Hopkins rod telescope & post operative complications were recorded.

Results

Polyps are prevalent in both sexes, all ages & in all socioeconomic groups, though average age of

onset is 3rd and 4th decade of life (Table 1). The most common symptom noted was nasal obstruction which accounted for 97.73%. Other symptoms noted were headache (52.27%), followed by nasal discharge (43.18%) and hyposmia/anosmia (36.36%), change in voice (34.09%), epistaxis and post nasal drip (6.82%) (Table 2).

There were total 4 (9.10%) patients with complication of which 2 (4.55%) intra operative and post operative complication each (Graph 1). The clinical symptoms noted on follow up at 1st, 4th and 6th week is shown in Graph 2. Complete cure was noted in 42 patients and two patients with ethmoidal and antrochoanal polyp each had recurrence (Graph 3).

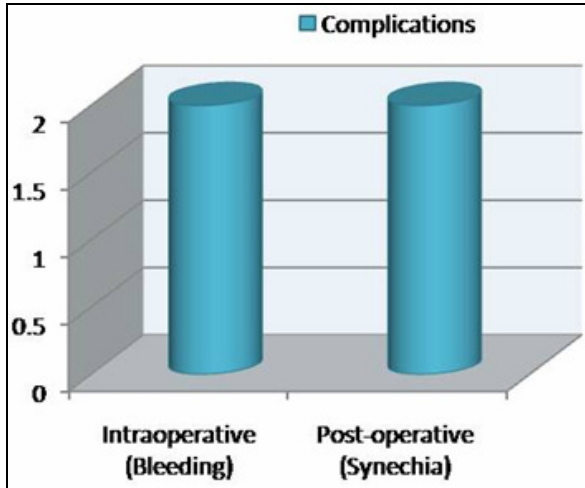
Table-1: Age & Sex wise distribution of the patients

Age group	Male	Female	Total
<10 years	5 (83.33%)	1 (16.67%)	6 (13.64%)
11-20 years	5 (50%)	5 (50%)	10 (22.73%)
21-30 years	7 (50%)	7 (50%)	14 (31.82%)
31-40 years	3 (30%)	7 (70%)	10 (22.73%)
41-51 years	3 (75%)	1 (25%)	4 (9.09%)
Total	22 (50.00%)	22 (50.00%)	44 (100.00%)

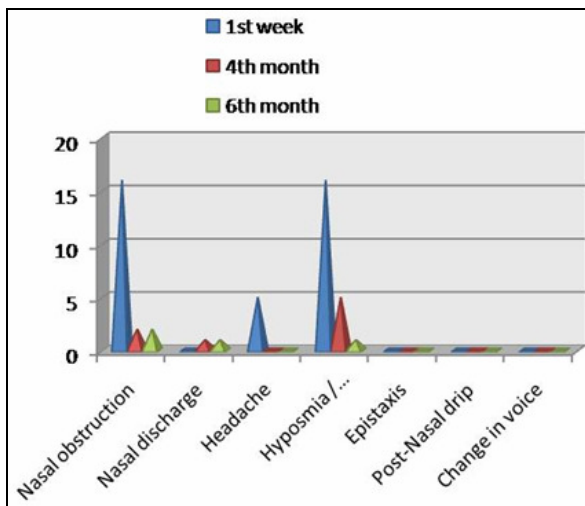
Table-2: Types & Sites of Nasal polyps

Site	Anto-choanal polyps (n=20)	Ethmoidal polyp (n=17)	Other polyps (n=7)
Maxillary sinus (A)	10 (50.00%)	--	--
Maxillary sinus (N)	7 (35.00%)	--	--
Maxillary sinus	3 (15.00%)	--	--
AEC	--	10 (58.82%)	--
PEC	--	5 (29.42%)	--
Bulla Ethmoidalis	--	2 (11.76%)	--
Infundibulum	--	--	2 (28.57%)
Uncinate Process	--	--	3 (42.86%)
Middle turbinate	-	--	2 (28.57%)
Total (n=44)	20 (45.45%)	17 (38.64%)	7(15.91%)

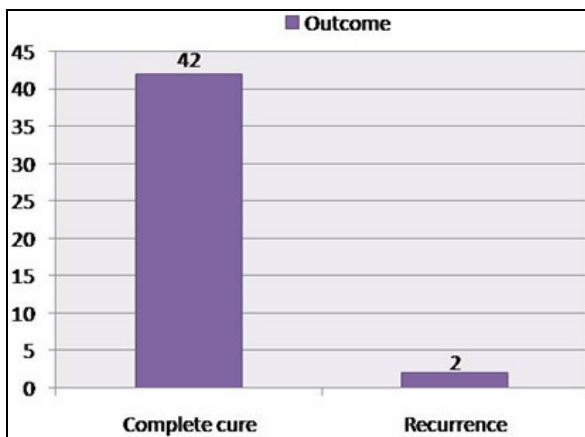
Graph-1: Complications



Graph-2: Follow – up



Graph-3: Recurrence



Discussion

Endoscopic sinus surgery was described by Stammberger in 1985 and in the same year

Kennedy coined the term “Functional Endoscopic Sinus Surgery” (FESS) to highlight an associated surgical philosophy. The concept of FESS embraced mucosal sparing surgery. Surgery was tailored to disease extent and concentrated on restoring mucociliary clearance and ventilation by opening the ostio-meatal complex. FESS therefore differed from traditional, wide exenterating procedures and less physiological drainage procedures [5].

Sino nasal polyposis (SNP), a chronic inflammatory condition of unknown aetiology is often associated with systemic diseases and is characterized by nasal obstruction, reduction in sense of smell, infection, and impaired quality of life. Endoscopy has enhanced the diagnosis and management of SNP. The initial approach is medical management which consists of administration of intranasal steroids or a short course of systemic steroids. Surgical removal is performed for patients who do not respond to medical management. The purpose of surgery is to restore the nasal physiology by making the nose free from nasal polyps and allowing drainage of infected sinuses. Medical therapy after surgery is essential for preventing recurrence.

Nasal endoscopy provides excellent visualization of polyps, especially of small polyps in the middle meatus. It also shows nasal polyps originating from contact areas in middle meatus and nasal anatomic abnormalities. Culture of the discharge and a biopsy can be performed under endoscopic guidance [6]. In the present study 44 patients were studied from August 2005 to August 2007. They were operated by Endoscopic Transnasal polypectomy and opening the sinus and curetting the polypoid mucosa followed by re-establishment of drainage function of the sinuses.

Age distribution: Polyps are prevalent in both sexes, all ages & in all socioeconomic groups, though average age of onset is 3rd and 4th decade of life. In a Study by R.H. Kamel [7], the average age of patients who underwent Endoscopic surgery for polyposis was 25 years (range 10-52 years) whereas in this

study, the average age of patients who underwent Endoscopic surgery for polyposis is 25.5 yrs. ranging from 7-50 yrs. Hence the study compares well with the former study.

Sex distribution: In the present study, there is equal distribution in both sexes whereas in a study by Stankiewicz [8] and Freitas et.al [9] there is a male preponderance. In comparison to these studies our study showed female preponderance which is attributed to the fact that in our region, women are from lower socio-economic group who are found to be working in fields, homes exposing themselves to environmental cold, hot climate, rainy and dusty atmosphere. Prevalence of SNP is also attributed to hormonal changes in women because of the early marriages and pregnancy.

Clinical diagnosis: In our study 20 were diagnosed with antrochoanal polyp and 17 patients were diagnosed as having ethmoidal polyps while in 7 patients it was from other sites. In the Levine's [10], study, 42 patients had Antrochoanal polyp and 458 had Ethmoidal polyps, in contrast to our study. The more percent of antrochoanal polyp in the present study could be because of recurrent infection and neglect of the condition due to unaffordability for the treatment as most of the cases were from low socio-economic status.

Site of Polyp: In our series most of the patients with antrochoanal polyp, polyp was seen in accessory Ostia, followed by natural Ostia and in many cases it was uncertain. In a study by Sema Basak et. al [11] the commonest site of polyp was accessory Ostia followed by natural Ostia in case of antrochoanal polyp.

Origin of Polyp: The most common site of origin of antrochoanal polyp within the maxillary sinus in the present study was infero-lateral wall (40.00%). The other sites like infero-medial and supero-medial wall accounted for 15.00% and 10.00% respectively. In 35.00% of cases, the site of origin could not be determined. The ethmoidal polyps were commonly originating from anterior ethmoidal cells (58.82%) followed by posterior ethmoidal cells (29.42%) and bulla ethmoidalis (11.76%). Other sites were Uncinate Process (42.86), infundibulum and middle turbinate each accounting for 28.57 %.

Complications: The percentage of patients in our study who had complications is 9.09%. This does not correlates with studies by Kennedy et.al, [12] is 29% and that by Stankiewicz [8] is 21%. In our studies, bleeding was the major intra-operative complication as seen in 4.55% cases, which corresponds with the study by James A Stankiewicz, [8]. Levine H.L [10] had 8.3% minor complications and 0.7% major complications. However there were no other major complications besides bleeding encountered in our study.

In our studies, synechiae formation was the major post-operative complication as seen in 4.55% cases. In a study by Marleen Vleming et al [13] of 593 patients with 1235 operated sites, 45 patients had complications. In a 3 of them complications were systemic. Remaining 42 patients had complications in 52 (4.2%) operated sites.

Follow Up and Recurrence: Of the 44 cases which underwent the operation, 32 cases presented with symptoms for follow-up. In the first week of follow-up, the most common symptom was nasal obstruction and hyposmia / anosmia in 16 (36.36%) patients each followed by headache in 5 (11.36%) patients. In next four months, the predominant symptom was hyposmia / anosmia seen in 5 (11.36%) patients followed by nasal obstruction in 2 (4.55%) patients and nasal discharge in 1 (2.27%) patients. For the last follow-up the majority complaint was nasal obstruction in 2 (4.55%) followed by nasal discharge and hyposmia / anosmia in 1 (2.27%) patients each.

In our study, 31.81% of the patients were symptom free during 1st post operative week, 81.81% of the patients were symptom free post 4th month and 95.45% cases were symptom free 6th month post-operatively. Whereas, in the study by Kennedy D, [14], following the endoscopic surgery, relief of symptoms was seen in 81% of pediatric and 84% of adult patients. According to Venkatachalam et.al, [15] 72% of patients had complete relief of symptoms, 16% had partial and 8% had no relief following endoscopic surgery. Following endoscopic polypectomy

we had a recurrence rate of 4.55% in our patients. This corresponds with the studies by Friedman, [16] who reports a recurrence rate of <20% and is slightly better than that of Taylor J.S, [17] who reports a recurrence rate of 20-40%. Our study has shown a recurrence rate of 4.55% (2 cases).

Conclusion

This study demonstrates that the endoscopic management is a safe and efficient technique for treating nasal polyp. The complications are

minimal when performed carefully and in our study there was good subjective outcome and minimal recurrence rate. This method gives a fair idea about the site of origin of the nasal polyp which can be utilized for complete removal of the polyp and establishing a natural drainage by performing endoscopic sinus surgery at the same sitting and offer symptomatic relief of the patients with minimal complications and less chance of recurrence.

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