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Original research article

Management of nasal polypoidal masses at a tertiary care hospital

[1]Dr. Abhishek MP, [2]Dr. Nikethan G, [3]Dr. Nitha T, [4]Dr. Ajitha Tavvala

[1]Senior Resident, Department of ENT, CIMS, Chamarajanagar, Karnataka, India
[2]Consultant, Department of ENT, Taluk Hospital, Kollegal, Karnataka, India
[3]Associate Professor, Department of ENT & HNS, Adichunchanagiri Institute of Medical Sciences, B. G. Nagara, Karnataka, India
[4]Senior Resident, Department of ENT, BMCRI, Bangalore, Karnataka, India

Corresponding Author:
Dr. Ajitha Tavvala

Abstract

A polyp presents in the nasal cavity with a grape-like appearance, having a "body" and a "stalk". The surface is smooth and the colour is more yellow than the pink mucous membrane. The polyps protrude into the nasal cavity from the middle and superior meatus, resulting in nasal blockage and abolishing airflow to the olfactory region. The study was conducted on patients of all ages and of either sex presenting with nasal polypoidal masses. A detailed history was followed by a complete clinical examination. In this study, 45 (90%) cases were operated upon by doing functional endoscopic sinus surgery (FESS). The remaining 5 (10%) cases underwent polypectomy due to its limited extension. A regular follow up of 3 months was done to confirm a recurrence. It was observed that 7 cases (14%) in the study group with a recurrence had a history of allergy. Recurrence is most commonly associated with a history of allergy and associated conditions like asthma.

Keywords: Nasal polypoidal masses, nasal blockage, FESS

Introduction

Several theories of pathogenesis for the formation of nasal polyps have been postulated in the last 150 years. These theories are based on oedema, an increase in tubulo-alveolar glands, and the presence of the cysts of mucous glands in nasal polyposis. Epithelial injury may be caused by a bacterial or viral infection as well as prolonged inhalation of irritating substances. Regeneration of epithelium activates cytokines which in turn activates an inflammatory reaction resulting in a polyp formation [1, 2]. Nasal polyps severely interfere with the quality of life. The aetiology, in the large majority of cases, is unknown and the pathogenesis of polyp formation is poorly understood.

A polyp presents in the nasal cavity with a grape-like appearance, having a "body" and a "stalk". The surface is smooth and the colour is more yellow than the pink mucous membrane. The polyps protrude into the nasal cavity from the middle and superior meatus, resulting in nasal blockage and abolishing airflow to the olfactory region [3].

Nasal polyposis, consisting of multiple, bilateral polyps is part of an inflammatory reaction involving the mucous membrane of the nose, the paranasal sinuses and often the lower airways. The relationship between nasal polyposis and chronic rhinosinusitis is much debated but in its broadest sense, nasal polyposis should probably be regarded as one form of chronic inflammation in the nose and sinuses and as part of the spectrum of chronic rhinosinusitis [4].

The prevalence rate of nasal polyposis is about 2 percent. It increases with age, reaching a peak in those aged 50 years and older. The male to female ratio is about 2:1. Nasal polyposis occurs with a high frequency in groups of patients having specific airway diseases. Nasal polyps are very rare in children having allergy in contrast to children with cystic fibrosis. The disease is more frequent in non-allergic than in allergic adult patients with rhinitis and asthma [5, 6].

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Methodology

A sample size of 50 patients of all ages and of either sex presenting with nasal polypoidal masses were included as study subjects.

Study design, place and duration: Cross sectional study at a rural tertiary care hospital from October 2019 to May 2021.

Inclusion criteria

1. All cases who presented with nasal polypoidal masses and consenting to take part in the study.

Exclusion criteria

1. Patients presenting with congenital nasal masses.
2. Nasal masses of intracranial origin.

Statistical analysis

Data collected was entered on Microsoft Excel sheet and analysis was done using appropriate statistical tests. Appropriate test of significance was used based on type of data. A p value <0.05 was considered significant.

Method of data collection

- Data was collected from patients presenting to the outpatient department satisfying the inclusion criteria.
- 50 patients were selected on simple random selection technique.
- The study was conducted on patients of all ages and of either sex presenting with nasal polypoidal masses.
- A written informed consent was taken from patients who were willing to take part in the study.
- A detailed history followed by complete clinical examination was undertaken.
- Diagnostic nasal endoscopy followed by relevant hematological and radiological investigations were done.
- Patients not responding to the initial medical line of management were advised to undergo surgery.
- Simple polypectomy with FESS was done based on the extent of disease as reported on the CT scan followed by histopathological examination of the specimen.
- Minimal blood loss during the procedure owing to the use of microdebrider warranted quantification if necessary.

Results

Table 1: Type of surgery

Type of Surgery	No. of Patients	Percentage
FESS	45	90.0
Polypectomy	5	10.0
Total	50	

In this study, 45(90%) cases were operated upon by doing FESS. The remaining 5(10%) cases underwent polypectomy due to its limited extension.

Table 2: Type of Anaesthesia

Anaesthesia	No. of Patients	Percentage
GA	45	90.0
LA	5	10.0
Total	50	

In this study, 45(90%) of polyp cases were given general anaesthesia and the remaining 5(10%) cases were treated by local anaesthesia.

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Table 3: Intraoperative Complication

Intraoperative Complication	No. of Patients	Percentage
Nil	41	82.0
Bleeding	9	18.0
Total	50	

Bleeding was the only intraoperative complication that was observed in this study. No other complications were noted. Excessive bleeding during the procedure was noted in 9 (18%) patients, of which 6 cases were inflammatory polyps, 2 cases were inverted papillomas and 1 case was of squamous cell carcinoma.

In this study, bleeding was controlled during operative procedures by packing the nose with 4% xylocaine and 1:1,00,000 adrenaline. None of the patients required any blood transfusion during the procedure or postoperatively.

Table 4: Hospital Stay (Days)

Hospital Stay (Days)	No. of Patients	Percentage
1.00	5	10.0
2.00	20	40.0
3.00	20	40.0
4.00	5	10.0
Total	50	

The average hospital stay of patients was 2.5 days. The duration ranged from 1-4 days.

Table 5: Postoperative Complications

Complications	No. of Patients	Percentage
Synechiae	9	18.0
Without Complications	41	82.0
Total	50	100.0

In this study, synechiae was observed postoperatively as a complication in 9 (18%) patients. The synechiae was seen at the contact point of the turbinate and nasal septum. It was released under local anaesthesia during the follow up. None of them needed any readmission for the release of the synechiae.

Table 6: Histopathology Report

HP Report	No. of Patients	Percentage
Inflammatory Polyp	41	82.0
Antrochoanal Polyp	5	10.0
Inverted Papilloma	2	4.0
Benign Spindle Cell Lesion (Fibrous histiocytoma)	1	2.0
Squamous Cell Carcinoma	1	2.0

Based on the histopathology report, 41 cases had inflammatory polyps, 5 cases had antrochoanal polyps, and 2 cases had inverted papillomas. 1 case of benign spindle cell lesion and 1 case of squamous cell carcinoma was reported.

Majority of the cases (41) were ethmoidal polyps with an allergic etiology. Etiology could not be determined in cases of antrochoanal polyps, inverted papillomas, , benign spindle cell lesion and squamous cell carcinoma.

Table 7: Follow up

Symptoms	Follow-up		
	1 Week	1 Month	3 Months
Nasal Obstruction	39 (78%)	26 (52%)	8 (16%)
Anosmia	9 (18%)	4 (8%)	4 (8%)
Nasal Discharge	24 (48%)	9 (18%)	5 (10%)
Post Nasal Drip	6 (12%)	6 (12%)	2 (4%)
Headache	7 (14%)	7 (14%)	5 (10%)
Nil	10 (20%)	23 (46%)	41 (82%)

Follow up was done at 1 week, 1 month and 3 months.

During the first week of follow up, only 10 patients (20%) in the study had no symptoms.
In the first month of follow up, 23 patients (46%) were symptom free.
At the end of 3 months of follow up, 41 patients (82%) were symptom free.

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Table 8: Recurrence

Recurrence	No. of Patients	Percentage
Yes	7	14.0
No	43	86.0
Total	50	

A regular follow up of 3 months was done to confirm a recurrence. It was observed that 7 cases (14%) in the study group having a recurrence had a history of allergy. Recurrence is most commonly associated with a history of allergy and associated conditions like asthma.

Discussion

Nasal polyposis is a very common condition seen in the field of otorhinolaryngology. Detailed clinical history and examination usually can clinch the diagnosis. CT scan along with histopathological assessment is essential in analyzing the different etiological causes and also the extent of polypoidal masses in the nasal cavity.

Patients were initially treated by a medical line of management. The following treatment protocol was started.

1. Antihistamines alone or with a combination of leukotriene inhibitors for 15 days (Montelukast and Levocetrizine) or (Ebastine and Montelukast) or (Montelukast and Fexofenadine).
2. Short course of oral steroids in a tapering dose for 15 days (Prednisolone or Methylprednisolone or Deflazacort).
3. Steroid nasal sprays (Fluticasone furoate or Mometasone furoate) for a period of 15 days.

Patients not responding to the initial medical line of management underwent surgeries like simple polypectomy or polypectomy with FESS pertaining to the extent of their disease.

As it was a cross sectional study, the results obtained from the study were compared with similar studies available in literature. As no hypothesis were formed or tested, this study involved no control group. Fifty proven cases of nasal polyposis were studied extensively. In this study, the post-operative assessment was done by asking our patients to indicate a subjective relief of symptoms.

Schaeffer et al followed up patients for 1-12 months and the success rate was 93%.[7] Stammberger followed up for 8-12 months and the success rate was 95%.[8] Mathews et al followed up for 10-13 months and the success rate was 91%.[9] In this study, the follow up was for 3 months. 82% of the cases showed remission of symptoms at the end of 3 months, thus attributing the success rate of the treatment at 82%.

All the polyp specimens were sent for histopathological examination following surgical excision. Among them, 41 cases had an inflammatory (allergic) etiology. 5 cases were antrochoanal polyps and 2 cases were inverted papillomas.1 case each of benign spindle cell lesion and squamous cell carcinoma were seen. Alun-Jones et al in 1990 studied 1297 cases of nasal polyps and found an inflammatory pathology.[10] Romashko AA et al in 2005 studied 277 cases of nasal polyposis and observed similar findings [11, 12]

Conclusion

The most frequently encountered intraoperative complication was bleeding. The complication seen postoperatively more often was a synechiae formation. Imaging (CT scan) is important to know the extent of nasal polypoidal masses and also helps in planning of surgery. Histopathological examination is mandatory for final diagnosis in patients with nasal polypoidal masses. In the present study, overall success rate was 82%.

References

1. Stankiewicz JA. Complications of Endoscopic Intranasal Ethmoidectomy. Laryngoscope. 1987;97:1270-1273.
2. Schaffer SD, Manning S, Close LG. Endoscopic Paranasal Sinus Surgery-Indications and Contraindications. Laryngoscope. 1989;99:1-5.
3. Noam A Cohen, David W Kennedy. Endoscopic sinus surgery: where we are and where we're going. Curr Opin Otolaryngol Head and Neck Surgery. 2005;13:32-38.
4. Busaba, *et al*. Endoscopic sinus surgery for inflammatory maxillary sinus disease. Laryngoscope.

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2002;112:1378-83.
5. Kennedy David. Prognostic factors, outcomes and staging in ethmoid sinus surgery. Laryngoscope. 1992;102:1-18.
6. Kennedy DW. Endoscopic sinus surgery in textbook on Rhinosinusitis: A Guide for diagnosis and management. Thaler EA, Kennedy DW, 93-95.
7. Schaffer SD, Manning S, Close LG. Endoscopic Paranasal Sinus Surgery-Indications and Contraindications. Laryngoscope. 1981;99:1-5.
8. Stammberger H, Posawetz W. Functional Endoscopic Sinus Surgery: concept, indications and results of Messerklinger Technique. Eur Arch Otolaryngol. 1990;247(2):63-76.
9. Mathews BL, Smith LE, Jones R, Miller C et al. Endoscopic Sinus Surgery: Outcome in 155 cases. Otolaryngol Head Neck Surg. 1991;104:244-46.
10. Alun-Jones T, Hill J, Laighton, et al. Is routine histological examination of nasal polyps justified? Clin Otolaryngol. 1990;15:217-219.
11. Romashko AA, Stankiewicz JA. Routine histopathology in uncomplicated sinus surgery: Is it necessary? Otolaryngol Head Neck Surg. 2005;132:407-412.
12. Holm AF, Fokkens WJ, Godthelp T, Mulder PG, Vroom TM, Rijntjes E. A 1-year placebo-controlled study of intranasal fluticasone propionate aqueous nasal spray in patients with perennial allergic rhinitis: a safety and biopsy study. Clin Otolaryngol. 1998;23(1):69-73.