

# Comparison of Conservative Versus Surgical Treatment of Ethmoidal Nasal Polyps

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## ABSTRACT

**Objective:** Compared and analyzed the outcome of various treatment options for Ethmoidal nasal polypi, Compared the frequency of complications of different surgical techniques for the treatment of nasal polypi, Compared the frequency of recurrence after both procedures.

**Study design:** Retrospective and clinical trial

**Duration & setting:** -ENT Department, Allama Iqbal Medical College / Jinnah Hospital Lahore, one year from Jan. 2008 to Jan. 2009.

**Patients & methods:** -In this study 150 patients had nasal polypi, out of which 75 were given intranasal steroids. The rest 75 underwent intranasal polypectomy or ethmoidectomy, and FESS (Functional Endo-Scopic Sinus Surgery)

**Results:** The recurrence rate of nasal polypi after conservative treatment is 82.0%. It was found 32 patients out of 39 patients showed recurrence, because 36 patients out of 75 did not show any response so. They were not further included in this study. After surgery the recurrence is seen in 28 patients out of 75(37.3%).

**Key words:** -Nasal polypi, Intranasal Ethmoidectomy, FESS [Functional Endoscopic Sinus Surgery].

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## INTRODUCTION

The word polyp is basically of Greek terminology meaning many footed (polypus). It was recognized in India for the first time and by 1000. B.C. Curettes had been devised to remove them<sup>1</sup>. Pahor<sup>2</sup> mentions the description of nasal polyp is Beers papyrus of the Ancient Egypt and also describe its removal by hooks. Hippocrates.<sup>10</sup>(460-370 BC) recognized and avulsed nasal polyp, and probably adjacent ethmoidal cells, using a piece of string, which was passed through the nose into the nasopharynx. Sponge was attached to the postnasal end and was then pulled through the nose removing all before it. In ENT practice nasal polypi are frequently seen. The prolapsed lining of the ethmoidal sinuses is the cause of nasal polypi. They block the nose to a variable degree depending on their size. On clinical assessment, nasal polypi appear as pale Bags arising most commonly from the middle meatus and are relatively insensitive on probing. The pale

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appearance of polypi is due to the poor blood supply. They are usually bilateral, and when unilateral, transitional cell papilloma (Ringer's Tumor, inverted papilloma) or malignancy<sup>4,5</sup> must be ruled out by carrying out histological examination.

Although local corticosteroid drops help to control small sized nasal polypi, the recurrence rate is high and usually surgery is required<sup>6</sup>. The surgical treatment is intranasal polypectomy or ethmoidectomy. Although the chances of cure after surgical treatment are considered more, they are not free from complications like hemorrhage, infection; intraorbital or intracranial complications. Recently a new technique of nasal polypectomy or ethmoidectomy has been developed, which is done with the help of Endoscopy, called Functional Endoscopic Sinus Surgery (FESS). The Concept of Surgery was developed in 1970s, by Messerlinger and Stammberger<sup>12</sup>. Whichever technique of surgery is used, there is quite a high incidence of recurrence of nasal polypi after the operation, so surgery should be followed by corticosteroid nasal spray<sup>7</sup>. The rate of recurrence is higher in patients with asthma, eczema and aspirin hypersensitivity.<sup>8</sup>

**MATERIAL AND METHODS**

The study was conducted in the E.N.T Department, Allama Iqbal Medical College/Jinnah Hospital Lahore from January 2008 to January 2009 which was comprised of 150 patients. The first 75 patients were given conservative treatment (intransal steroids), while the next 75 were treated surgically, by intranasal polypectomy or Ethmoidectomy and FESS (Functional Endoscopic Sinus Surgery). Follow up was done after one month, two months, six months and one year.

Inclusion criteria are, patients with bilateral polypi and in the age bracket 15 to 40 years. Exclusion criteria are, patients suffering from immotile cilia syndrome, cystic fibrosis and Youngs syndrome. Those patients who were unable to report for follow up, were excluded from the study

A detailed and thorough history was taken which includes presenting complaints, past history, personal and family history. Detailed clinical examination were done, including ENT and systematic examination. Every patient was thoroughly investigated.

Hematological and biochemical test were done. Every patient have routine radiographs of nose and paranasal sinuses preferably C.T Scan.

Treatment, either conservative or surgical, was given. Any complication, if found, was recorded and response of treatment was observed in follow-up. Every patient was followed up for one year at intervals as mentioned, and any complication or recurrence was recorded.

**RESULTS**

A total of 150 patients were entered in this study over a period of one year from Jan. 2008 to Jan. 2009. 75 patients were given conservative treatment and the other 75 were treated surgically.

There was a male predominance. The number of male 92 patients was (61.33%) and that of female patients was 58(38.69%), giving us a male to female ratio of 1.59:1

The age group has a lower limit of 15 years and upper limit of 40 years. No patient was below or above this age limit. Mean age of 150 patients was 25.99±2.5 years. Mean age of conservatively treated patients was 24.12 years and mean age of surgically

treated patients was 28.65 years. Majority 51(34%) patients were in the age bracket 26-30 years.

Regarding symptoms, all patients (100%) having nasal obstruction. 139 patients (92.6%) having post-nasal discharge, 120 patients (80%) have headache. Sneezing was present in 108(72%), Rhinorrhea in 101(67.3%) patients and loss of sense of smell in 96(64%) patients.

Asthma was found in 24(16%) patients. Aspirin hypersensitivity was also seen in 12(8.0%) patients and Pencilline hyper sensitivity in 10(6.66%) patients.

On Clinical examination all the 150 patients (100%) had bilateral nasal polypi. The second commonest sign was nasal discharge found in 118(78.67) patients. Inferior turbinate hypertrophy was found in 88(58.67%) patients. DNS was found in 93(62%) patients.

Patients treated by local steroids, Includes pretreatment detailed assessment of the patients. All the patients were counseled regarding the duration of treatment and the follow up criteria. Among 75 patients treated by intranasal steroid, only 39 patients (52%) showed initial response.

The remaining 36 patients did not show any response. So, they were excluded from the study. Then study was continued with the remaining 39 patients.

It was found that 32(82.0%) patients out of 39 patients showed recurrence, Cured patients were 7(17.9%) out of 39. They were followed up 1, 2 and 6 months Intervals and then after 1 year. No complications seen in any patients. Table-1

Table 1: Recurrence rate after Medical Treatment (n=75)

Duration in month	n	%age
One	12	30
Two	0	0
Six	16	41
One year	04	10
Total	32	82

Patients getting permanently treated=7(17.9%)

Seventy five patients were treated with surgical procedures. Pre-operative evaluation of symptoms and signs included detailed history and clinical examination. The baseline investigation including complete blood picture and urine examination and C.T Scan Nose and Para nasal Sinuses Coronal and axial View 3mm Slices (FESS PROTOCOL) were carried out. Those patients who were older than 50 years of age had their X-Ray chest, electrocardiography and blood sugar examination. Patients were also counseled regarding the operative

procedures and the likely complications. They were also encouraged for scheduled follow up visits.

The patients were advised follow up after 1, 2 and 6-months and after one year to see the benefit of surgical treatment, recurrence of the disease, or any complications.

Out of 75, 57 patients underwent intranasal Ethmoidectomy and 18 had FESS (Functional Endoscopic Sinus Surgery)

Recurrence was not seen in any patient after one month. But it was seen in only one patient after 2 months of surgery. Assessment after 6 months of operation, patients were re-examined and were assessed for the benefit of operation, any complications or recurrence of the disease.

The complications arising after the operation were infection, adhesions, and loss of sense of smell in some of our patients. There was no major morbidity or mortality observed. After one year patients had a detailed check up to see the effects of operation, its benefits and recurrence of disease. The recurrence rate after surgery seen is shown in Table. 2. The recurrence of Nasal polypi was found in 28 patients. 37.3%.

Table 2: Rate of recurrence after surgery

Duration in month	N	%age
One	-	-
Two	01	13
Six	10	13
One year	17	23
Total	28	37

Total patients getting fully treated by surgery=62.5 % (47)

Table 3: Comparative analysis

	Conservative	Surgical
Pts given treatment	75	75
Pts Initially respond	39	75
Recurrence	32(82%)	28(37.3%)
Cured	07(17.9%)	47(62.5%)
Complications	0	8

$P < 0.05$                        $p < 0.05$                        $p > 0.01$

The specimens obtained on surgery were sent for histopathological examination post operatively. In all the 75(100%) patients, benign allergic/inflammatory nasal polypi were reported. Comparative studies of the conservative and surgical treatment are shown in Table. 3 after 1 year follow up.

## DISCUSSION

This study has been done to find out the best treatment of all the available treatment modalities. The study included 150 patients who were seen in the ENT Department, Jinnah Hospital, Lahore. These patients were divided into two groups. The first 75

were treated with intranasal corticosteroids and the next 75 were given surgical treatment. The male to female ratio of these 150 patients was 1.59:1,

Among the complaints of the patients, nasal blockage was present in all the 150 patients (100%). Bilateral blockage was seen in all of them. (100%), which was slow but progressive in development. The post-nasal drip occurs when there is no route available for the secretions anteriorly. It may be yellow, white, light green or brownish in color. The yellow and light green colors of post-nasal drip signify large number of eosinophils<sup>3</sup> regardless of the presence or absence of infection. The nasal blockage led to poor ventilation, as a result of which headache was also reported. In our study, 80% of the cases complained of headache.

In case of nasal polypi clear rhinorrhea and loss of smell are frequently encountered. Hypo sensitization against known allergens reduces necessary polypectomy frequency<sup>18</sup>.

Aspirin intolerance as reported Settupane<sup>13</sup> is around 23%. We report 12(8.0%) patients with aspirin intolerance in our study. Asthma and nasal polypi have a very close inter-relationship. The incidence of asthma in cases of nasal polyp is 28%<sup>19</sup>. In our study 24(16%) of patients were found to be asthmatic.

The site of origin of Nasal polypi is from the Ethmoidal air cells and the middle meatus<sup>17</sup>. The reason for this site is the anatomy of Osteomeatal Complex.

Among 75 patients who were given intranasal steroids, only 39 patients (52.0%) showed initial response while 36 patients (48.0%) did not show any response. 39 patients who showed response were followed-up on 1, 2 and 6-monthly and 1 yearly basis. It was found that 32 patients (82.0%) out of the 39 showed recurrence. So the total patients Cured by intranasal steroids in our study were 7(17.9%). All those patients who were given conservative treatment did not show any complication.

The next 75 patients were treated surgically. The surgical procedures opted were intranasal Polypectomy or ethmoidectomy and FESS (functional endo-scopeic sinus surgery).

Intranasal polypectomy or Ethmidectomy alone is of little significance in controlling the disease, as it does not eliminate the probable cause of nasal polypi i.e., hyper-reactive respiratory epithelium. At the same time, intranasal polypectomy does not remove the underlying chronic osteitis and possible bacteriological seeding of the Ethmoid labyrinth. Due to this Intranasal polypectomy is usually followed by recurrence. In our study of 75 patients, intranasal Ethmidectomy in 57 Patients and FESS in 18 patients were done and recurrences was noted in 28(37.3%) patients after 1 year.

Friedman<sup>11</sup> reported an overall recurrence rate of 30.9% following intranasal ethmoidectomy, in patients with polyp who had undergone nasal polypectomy previously. Ahmed and Hammed<sup>9</sup> reported a recurrence rate of 33% after intranasal ethmoidectomy. Lawson<sup>20</sup> reported the occurrence of post intranasal ethmoidectomy complications in 1.1% of patients. These complications include meningitis, pneumoencephalus, cerebrospinal fluid leakage Rhinorrhoea, post-operative haemorrhage and orbital injuries.

Nasal polypi arising as a result of fungal allergy may be complicated by further fungal infection. Various fungi responsible for this are Mucormycosis, Rhinosporidiosis, Aspergillois<sup>14,15</sup> Bipolarize speciero<sup>16</sup>.

The complications such as CSF leak, intracranial infections and orbital complications are also seen with Endoscopic sinus surgery [FESS] can prove more dangerous with inexperience hands. One should have cadaveric Endoscopic experience along with conventional method before doing Endoscopic surgery.

In ours 75 patients no patient suffered any serious complication. Only some of them had nasal blockage, crusting, adhesion formation, infection and loss of smell, which were managed well. Recurrence after operation is very common and is not considered as a complication of surgery. But it is the nature of the disease **WHICH HAS TENDENCY TO RECUR**. It may be seen even on the first postoperative visit, thus frustrating the surgeon.

## CONCLUSIONS

- Nasal polypi are frequently found among adults rather than in childhood.
- The gender involvement in case of Nasal polpi is almost equal.
- Conservative treatment (Intranasal sterdioid) has no significant role in treating nasal polypi.
- Surgical modality of treatment is more effective in controlling the disease
- Recurrence rate of nasal polyp is higher after conservative treatment as compared to that of surgical treatment.
- Complications that are seen after surgical treatment are usually treatable.

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