

# Endoscopic Approach for the Treatment of Antrochoanal Polyp

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## ABSTRACT

**Objective:** To determine the efficacy of endoscopic removal of the antrochoanal polyp with middle meatal antrostomy in terms of morbidity and recurrence.

**Design:** A descriptive study

**Place and Duration of Study:** ENT Unit I, Allama Iqbal Medical College/Jinnah Hospital, Lahore, from March 2008 to September 2009.

**Patients and Methods:** Twenty four consecutive patients (10 females, 14 males; mean age 22 years; range 14 to 32 years) were included. Preoperatively, all the patients were evaluated with detailed history, endoscopic nasal cavity and nasopharyngeal examination and computed tomography. Age, gender, main symptom leading to consultation, previous surgical treatment performed, duration of hospital stay and recurrence were evaluated. Follow-up examinations were performed in the first, three and six months postoperative.

**Results:** All twelve patients underwent endoscopic removal of antrochoanal polyps with middle meatal antrostomy. Males 58.33% are affected more than the females 41.67%. Right side 66.67% is more commonly involved in our patients. Six patients had past history of intra nasal polypectomy. Nasal obstruction 91.67% and mouth breathing 58.33% were two main symptoms seen at the time of presentation followed by snoring, rhinorrhea and post nasal discharge seen in 33.33%; headache and epistaxis were present in 25% and 8.33% patients. All patients had three day of hospital stay and none of them had any serious post operative problem. None of the patient had recurrence up till now.

**Conclusion:** Endoscopic sinus surgery proved an ideal approach for antrochoanal polyps as it enables complete removal of the antral portion of the polyp

**Key words:** Endoscopy, antrochoanal polyp, nasal cavity

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## INTRODUCTION

Antrochoanal polyps (ACP), also known as Killian's polyps, are a non-atopic<sup>1</sup>, benign lesions, which arise from the maxillary sinus, go through its ostium (can be the true ostium or the Girdal's accessory ostium) and extend all the way to the ipsilateral choana.<sup>2</sup> The antrochoanal polyp was described by Killian in 1906, though Palfyn was the author who described the first case termed as nasopharyngeal polyp in 1753<sup>3</sup>. Macroscopically, they have a cystic intramaxillary portion and a more solid intranasal portion. Microscopically, they are similar to a maxillary cyst of the mucosa. Although among the choanal polyps, antrochoanal type is the commonest but there are other rare types ethmoid-choanal, sphenoid-choanal are also seen occasionally<sup>4</sup>. It may present at any age but is seen more frequently in younger people<sup>5</sup>. It is more frequent in men than women<sup>5</sup>.

The patient usually presents with unilateral nasal obstruction. Other symptoms like mucopurulent rhinorrhea, epistaxis, sleep disorders, postnasal drip, headaches, hyposomnia, mouth breathing and

snoring. On examination there may be a unilateral polypoidal nasal and/or rhino-pharyngeal mass visible<sup>6</sup>. Paranasal sinuses x-ray shows a unilateral hazy maxillary sinus. In computerized tomography (CT) a solid well-delineated mass appears emerging from the maxillary sinus, and approaching the choanal<sup>5,6</sup>.

The basic treatment for the antrochoanal polyp is unanimously same, surgical removal of the nasal part along with the complete removal of the antral part, in order to reduce the recurrence<sup>2</sup>. Since 1906, when Killian described the maxillary sinus as the site of origin for the polyp, many surgical techniques have been proposed. These include the Caldwell-Luc procedure, endoscopic polypectomy with middle meatal antrostomy, endoscopic polypectomy with antrostomy through the inferior meatus and endoscopic polypectomy with middle meatal antrostomy and the use of microshaver with or without transcanine access<sup>7</sup>.

This study was conducted to evaluate the results of endoscopic removal of the nasal and antral part of the polyp along with the middle meatal antrostomy, in terms of disease control and morbidity.

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## PATIENTS AND METHODS

This prospective study included twenty four consecutive patients of antrochoanal polyp who were endoscopically treated at ENT Unit I between March 2008 and September 2009. Preoperatively, all the patients were evaluated with detailed history and clinical examination. The diagnosis was confirmed by endoscopic nasal cavity and nasopharyngeal examination and computed tomography was done to see the anatomical land marks. All patients were admitted after routine hematological investigations (blood complete & clotting profile) and underwent endoscopic removal of antrochoanal polyps with middle meatal antrostomy by the same surgical team. The factors like age, gender, main symptom leading to consultation, previous surgical treatment performed, duration of hospital stay and recurrence were evaluated. The patients were discharged after removal of nasal pack on oral first generation cephalosporin for five days, analgesics as per requirement and nasal douching for seven days. Follow-up examinations were performed in the first and three months postoperative.

## RESULTS

Among the twenty four patients included in the study 10 (41.67%) were females and 14 (58.33%) were males. The age of the patients ranged between 12 and 46 years, mean age was 22 years. All the patients presented with unilateral Killian polyps, 16 (66.67%) on the right side and 8 (33.33%) on the left side. Co-morbidity was seen in 8 (33.33%) patients. Four (16.67%) patients had bronchial asthma and another four (16.67%) had deflected nasal septum in addition to the antrochoanal polyp. The main symptoms leading to the consultation are summarized in Table I.

Table 1: Symptoms

Symptoms	=n	%age
Nasal Obstruction	22	91.67
Mouth Breathing	14	58.33
Snoring	8	33.33
Rhinorrhea and post nasal discharge	8	33.33
Headache	6	25
Epistaxis	2	8.33

6(25%) patients had history of previous surgery in form of intra nasal polypectomy. All patients under went endoscopic removal of the polypi with middle meatal antrostomy for the removal of antral part. In the four (16.67%) patients with deviated nasal septum, the procedure was combined with

septoplasty. The duration of hospital stay was 3 days for all patients. All twenty four patients were admitted a day prior to surgery and were discharged on the first post operative day, after the removal of nasal pack. In 18(75%) patients the polyp was seen to be emerging from the accessory ostium and in remaining 6(25%) from the main ostium of maxillary sinus. None of them had any extensive bleeding post operatively. Nasal splints were placed in all patients to avoid synechia formation which were removed on seventh post operative day in out patient. All patients had a minimum follow up for six months. None of the patients had recurrence up till now.

## DISCUSSION

Postero-lateral wall of the maxillary sinus is the most common site of origin of antro choanal polyp. It grows, without bone destruction, through the accessory ostium, or occasionally through the maxillary ostium, to inside the middle meatus between the lateral wall turbinates and grows posteriorly to reach the choana<sup>1</sup>. Antrochoanal polypi are about 4% to 6% of all nasal polypi and primarily affects young adults and children<sup>5,8</sup>. The mean age of the patients in our study was 22 years which is slightly lower than what has been reported in literature. Although disease affected right side in 66.67%, patients but there is no established reason for this predominance. There does not appear to have been a predominance of sex in the appearance of the choanal polyp, 14 though some analyses have found a greater frequency in men<sup>9</sup>. In our study, 58.33% were men and 41.67% were women, confirming the male predominance of the disease.

The exact etiology of the disease is not known, although various aetiopathogenic and inflammatory theories have been proposed, but none of them is able to clearly confirm the cause of antrochoanal polyp. Only 33.3% patients had history of rhinorrhea and post nasal discharge at presentation. The presenting symptoms vary according to the severity of disease, climate and co existing diseases. Nasal obstruction 91.67% and mouth breathing 58.33% were two most common presenting complaints in our patients, followed by snoring, rhinorrhea and post nasal discharge. The symptoms of patients in the study are similar to those reported in other studies. Asthma was seen only in 16.67% patients, this is quite lower than what has been reported by Cook et al<sup>10</sup>. Computed tomography with out contrast is the investigation of choice in these patients as it clearly confirms the diagnosis and also helps in identifying the land marks and to rule out any anatomical variation. Stammberger et al<sup>11</sup> emphasized that the antrochoanal polyps abandoned the maxillary sinus

towards the fossa by a Girdal's accessory orifice in 70% of cases. We found almost same incidence 75% in our patients.

The classical treatment of the disease until 1980s was Caldwell Luc operation, because simple intra nasal polypectomy is associated with a high recurrence rate of up to 25%<sup>7</sup>. It is important to identify the origin of these polypi, as the antral component must also be completely removed in order to avoid recurrences<sup>5</sup>. Since the disease is more prevalent in children and young adults, Caldwell Luc approach is associated with the risk of impaired dental development, inadequate expansion and pneumatization of the maxilla, in addition to the other minor problems such as hypoesthesia and pain in cheek as well as prolonged hospital stay<sup>6</sup>. Currently, the treatment of choice is sinonasal endoscopic surgery with middle meatal antrostomy, as it results in shorter hospital stay, less complications and better control of the disease<sup>12</sup>. The removal of the antral portion may be difficult, especially if its pedicle is situated in the anterior or medial wall of the maxillary sinus. For this reason different modifications of the standard technique in form of combined inferior meatal antrostomy, use of microshaver and transcanine puncture have been tried with variable success rate<sup>13,14</sup>. We used 0°, 30° and 45° endoscopes for the purpose of surgery. There were no per operative complications. The only significant factor of concern was prolonged operating time, which was on an average one and a half hour. All our patients were discharged on their first post operative day and none of them had any complication in form of excessive bleeding. To avoid synechia formation, nasal splints were used in all the patients which were removed after a week. None of the patients had any recurrence till six months of follow up.

## CONCLUSION

Endoscopic sinus surgery is the treatment of choice in patients with antrochoanal polypi because the function and capacity of the maxillary antrum are preserved. This permits the control of the disease without the necessity of additional maneuvers and with a very low recurrence rate.

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