

ANTROCHOANAL POLYPS: PRESENTATION AND MANAGEMENT

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ABSTRACT

Objective: To determine the pattern of presentation and management of Antrochoanal polyps.

Material and Methods: This descriptive prospective study was conducted at the department of ENT, Head and Neck Surgery Hayat abad Medical Complex (HMC), Peshawar and Lady Reading Hospital Peshawar-Pakistan from September 2010 to October 2012 with one year follow up. After admitting the patients were assessed in terms of detailed history, thorough examination of ENT and relevant investigations. These patients were subjected to polypectomy under general anesthesia and Caldwell Luc operation was performed in case of recurrent antrochoanal polyps. Nasal cavities were packed with furacin (nitrofurazone) impregnated roll gauze for 24-48 hours. Oral antibiotic, analgesics and vasoconstrictive nasal spray were given to patients. The statistical analysis was performed using the statistical program for social sciences (SPSS version 17).

Results: This study included 33 cases constituting 19 male and 14 female, with male: female ratio of 1.3:1. The age of the patients ranged from 06-57 years with mean age of 29.13 + S.D 17.23 years. Majority of the patients (33.33%) were in age group 11-20 years followed by 7 cases (21.21%) in age group 21-30 year. The presenting complaints of these patients were mainly unilateral nasal obstruction (90.90%), nasal discharge (51.51%) and both sided nasal obstruction (30.30%). Antrochoanal polypectomy was performed in 30 patients (90.90%) while Caldwell Luc operation was performed in 3 cases (9.09%) for recurrent ACP.

Conclusion: It is concluded that antrochoanal polyps mainly present with unilateral nasal obstruction and it can be treated surgically by simple polypectomy. Functional Endoscopic Sinus Surgery is the technique of choice and Caldwell Luc operation can be adopted in cases with recurrent polyps.

Key Words: Antrochoanal polyps, Benign nasal masses, Nasal obstruction, Polypectomy

INTRODUCTION

An Antrochoanal polyp (ACP) or Killian's polyp is a benign solitary polypoid lesion that affects mainly children and young adults. Studies demonstrate that Killian's polyp generally represents 4-6% of all nasal polyps.¹ However, in the pediatric population this percentage reaches 33%.² Palfyn reported the first case of an ACP in 1753, although Killian was the first to describe this disease in detail in 1906.

In contrast to inflammatory nasal polyposis, which grows from the ethmoid cells, an antrochoanal polyp is a benign lesion originating from the oedematous mucosa of the maxillary sinus, growing through the main or accessory ostium which is usually enlarged into the middle meatus and thereafter protruding posteriorly to the choana and nasopharynx.³ Exact cause of polyps is unknown; however it is thought that they have association with allergy, asthma, infection, cystic fibrosis and aspirin sensitivity.² Clinical manifestations usually start

with unilateral nasal obstruction, although there are reports of cases starting with epistaxis, purulent rhinorrhea, dyspnoea and dysphagia, speech disturbances, and obstructive sleep apnoea.⁴

Microscopically, the antral part of an antrochoanal polyp shows a central cavity surrounded by a homogeneous oedematous stroma bearing few cells. The polyp surface is covered with respiratory epithelium.³

Nasal endoscopy, computed tomography (CT) and magnetic resonance imaging (MRI) are the core diagnostic techniques used in bilateral and unilateral nasal polyposis.⁵ During nasal anterior rhinoscopy or nasal endoscopy ACP appears as a bright, white, mass in the middle meatus and nasal cavity while examination of the oral cavity shows ACP as a white egg shape mass behind the uvula. By using CT scanning, the diagnosis of ACP is made when a mass fills the maxillary sinus growing through the accessory or natural ostium into the middle meatus and the posterior choana. MRI shows T1 hypointense and T2 enhanced signals in sinochoanal polyps (antrochoanal as well as those originating in other sinuses).⁶ When intravenous gadolinium is administered during MRI, the intrasinus cystic part of the polyp is only peripherally enhanced, whereas the nasal and choanal regions show hyper intense images.⁷ The polyp usually arise from the posterior, inferior, lateral

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or medial wall of the maxillary antrum and only in rare cases from the anterior wall.

Antrochoanal polyp must be differentiated from angiofibroma, olfactory neuroblastoma, meningoencephalocele, hemangioma and inverted papilloma. Other differential diagnosis include lymphoma, Wegener's granulomatosis and rhabdomyosarcoma.

Endoscopic sinus surgery is treatment of choice for inflammatory nasal polyps, while simple conventional polypectomy can be performed if FESS is not available and Caldwell Luc's technique in case of recurrence of antrochoanal polyps.⁸

The aim of this study was to evaluate the presentation and treatment of antrochoanal polyps.

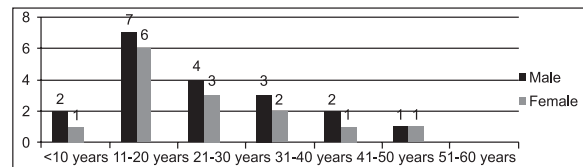
MATERIAL AND METHODS

This descriptive prospective study was conducted at the department of ENT, Head and Neck Surgery Hayatabad Medical Complex (HMC), Peshawar and Lady Reading Hospital Peshawar-pakistan from September 2010 to October 2012, with total duration of 01 years and total cases of 33. All the patients were followed for one year duration for any recurrence or complication. Inclusion criteria: 1. The patients of any age and either sex with ACP. Exclusion criteria: 1. Patients that were diagnosed as cases of sinonasal masses other than antrochoanal polyps. 2. Those patients who refused treatment of antrochoanal polyps. 3. Patients with ethmoidal polyps. After admitting the patients a detailed history was taken and thorough examination of Ear, Nose, Throat and Neck was carried out. Mucosal lining of upper aero-digestive tract was examined and a detail survey of the other body system was carried out. Routine investigations were performed in all cases. Plain X-Ray, Computed tomography and MRI of sinonasal region were done where indicated. An informed consent was taken explaining diagnostic as well as therapeutic procedures for antrochoanal polyps and its associated risks, benefits and complications. After getting the diagnosis of antrochoanal polyps the patient were subjected to polypectomy under general anesthesia and Caldwell Luc operation was performed in case of recurrent antrochoanal polyps. Nasal cavities were packed with furacin (nitrofurazone) impregnated roll gauze for 24-48 hours. Oral antibiotic, analgesics and vasoconstrictive nasal spray were given to patients. The specimen was examined by histopathologist to confirm the diagnosis. The study was approved by the hospital ethical committee. All these patients were followed for minimum of one year on monthly basis. The data was collected on a preformed proforma. No significant complication was observed in this study. The statistical analysis was performed using the statistical program for social sciences (SPSS version 17). The frequencies and percentages were presented for qualitative variables and Mean \pm

SD were presented for quantitative variables.

RESULTS

This study included 33 cases constituting 19 male and 14 female, with male: female ratio of 1.3:1 (Graph 1). The age of the patients ranged from 06-57 years with mean age of 29.13 \pm S.D 17.23 years. Majority of the patients (33.33%) were in age group 11-20 years followed by 7 cases (21.21%) in age group 21-30 year (Table 1). The presenting complaints of these patients were mainly unilateral nasal obstruction (90.90%), nasal discharge (51.51%) and both sided nasal obstruction (30.30%) (Table 2). Routine investigations were per-



Graph 1: Age and Gender-wise distribution of patients (n=33).

Table 1: Age-wise distribution of patients with mean \pm SD.

Age Range (years)	No. of cases	Percentage	Mean \pm SD
< 10	3	9.09%	7.33 \pm 1.52
11-20	11	33.33%	15.45 \pm 2.91
21-30	7	21.21%	26.28 \pm 3.03
31-40	5	15.15%	37 \pm 2.73
41-50	4	12.12%	45.25 \pm 3.30
51-60	3	9.09%	54 \pm 3

Table 2: Clinical features in this study.

Symptoms	No. of Cases	Percentage
Unilateral Nasal Obstruction	30	90.90%
Nasal Discharge	17	51.51%
Bilateral Nasal obstruction	10	30.30%
Epistaxis	5	15.15%
Headache	3	9.09%
Sneezing	3	9.09%
Fullness of Cheek	1	3.03%
Signs		
Polyp in nasal Cavity	33	100%
Anosmia	7	21.21%
Retracted Tympanic Membrane	5	15.15%
Hyponasal Voice	2	6.06%

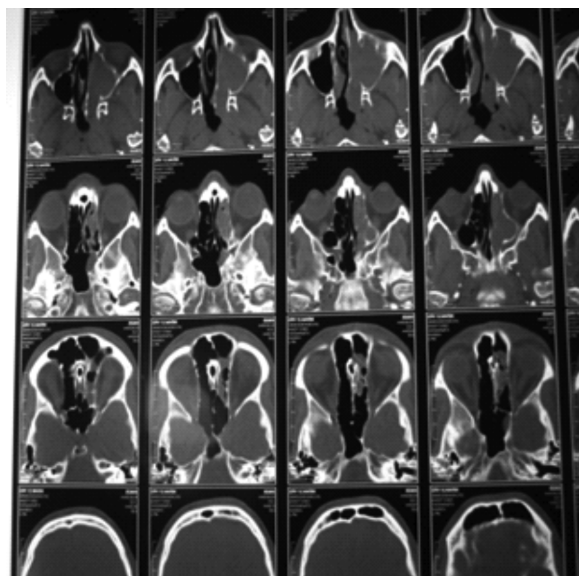
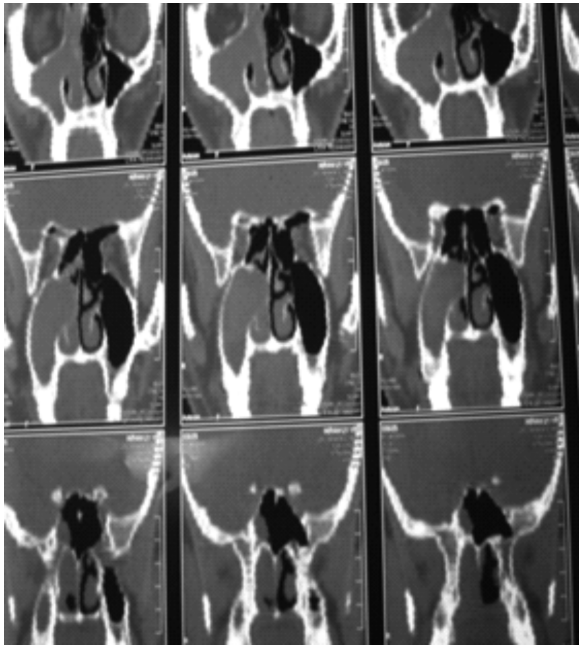


Figure 1: CT scan of nose, nasopharynx, paranasal sinuses and skull base coronal and axial views showing antrochoanal polyp occupying right nasal cavity, right maxillary and nasopharynx.

formed in all cases (100%), CT scan was done in 11 cases (33.33%) (Figure 1) and MRI was carried out in 4 cases (12.12%) to determine the extent of the disease because the patients had severe headache and one patients had fullness of cheek. Antrochoanal polypectomy was performed in 30 patients (90.90%) while Caldwell Luc operation was performed in 3 cases (9.09%) for recurrent ACP (Figure 2). All polyps were reported as simple inflammatory polyps on histopathological examination. All the patients were followed for a minimum



Figure 2: Antrochoanal polyp specimen removed in toto. period of one year and they were doing well with no recurrence.

DISCUSSION

Antrochoanal Polyps (ACP) have been a medically recognized condition since the time of the ancient Egyptians and their removal with a snare was described by Hippocrates, a method which persisted well into the second half of the 20th century.⁵ ACPs are round, smooth, soft, translucent, yellow or pale glistening bags of oedematous, hyperplastic structures attached to maxillary sinus mucosa by a relatively narrow stalk or pedicle. In the general population, the prevalence of ACP is considered to be around 4%.⁹ It predominantly affects adult usually those older than 20.

In our study ACP polyp was found with male dominance, male: female ratio of 1.3:1 that is not comparable with other studies. In previous reports ACP is commonly affecting female gender. Majority of the patients (33.33%) were in age group 11-20 years followed by 7 cases (21.21%) which is at variance from study of Bakari who reported that majority of the patients were in the age groups 21-50 yrs.¹⁰ This can be explained that Bakari studied sinonasal masses which included both benign and malignant masses. However our result is comparable to the study of Ogunleye who reported that patients' age ranged from 5-82 years with mean age of 34 years.¹¹ This disease is more common in younger age; the reason may be due to great exposure to pathogen in this age.

The presenting complaints of these patients were mainly unilateral nasal obstruction (90.90%), nasal discharge (51.51%). This is also in accordance to observation of Ogunleye who noted that main clinical presentations were nasal obstruction 95%, nasal discharge 81%, sneezing 59% and observed nasal polyps 78%.¹¹ The clinical presentation of ACP in this study was also similar with report of Razif, who narrated that the most common clinical symptom was nasal obstruction (92.8%) followed by rhinorrhoea (42.8%), postnasal drip (28.5%) and snoring (21.4%).¹² Similarly

Lathi also found that nasal obstruction was the most common (97.3%) presenting complaint, followed by rhinorrhoea (49.1%), hyposmia (31.25%), intermittent epistaxis (17.9%), headache (16.9%), facial swelling (11.6%) and eye-related symptoms (10.7%).¹³

Epistaxis is an unusual manifestation of ACP. In such cases angiofibroma must be excluded in pediatric male patients and malignancy in adult patients. Epistaxis as a symptom was observed in 5 cases (15.15%) in our study but no sinister underlying pathology was found in these patients. The dull retracted tympanic membrane seen in 5 patients (15.15%) may be as a result of Eustachian tube dysfunction from the obstructive effect of ACP.¹⁴ Nasal anterior rhinoscopy/endoscopy, CT and MRI correctly diagnosed the presence of ACP in our cases which is in accordance with other studies in the literature.^{9,10}

Surgical removal is the accepted treatment modality for antrochoanal polyp. The techniques for removal of ACP include simple polypectomy, Caldwell-Luc approach and endoscopic sinus surgery. Simple polypectomy has a high rate of recurrence due to the insufficient resection of the intramaxillary portion of the polyp. Although the Caldwell-Luc procedure offers a good exposure and insures complete removal of the antral part and sinus mucosa, it can damage the bone growth centers of the maxilla and the developing teeth in children.¹⁵ Functional Endoscopic Sinus Surgery is the procedure of choice for ACP now days worldwide. But due to lack of this facility we dealt all the patients with conventional polypectomy. Lee and colleague completely removed ACP with transnasal endoscopic (TE) or combined endoscopic and transcanine (CET) approach. The CET approach was used in ACPs originating from the lateral wall of antrum.¹⁶ Similarly Frosini conducted a study on ACP. FESS was performed in 172 patients (86%), FESS with septum correction in 67 cases (33.5%), Caldwell-Luc operation (12%) and polypectomy (2%).¹⁷ Similarly Ogunleye carried out simple polypectomy in 37 cases (67%) and Caldwell-Luc in 8 cases (15%).¹¹ No significant complications were observed in this study.

CONCLUSION

It is concluded that antrochoanal polyps mainly present with unilateral nasal obstruction in younger age. A high index of suspicion must be kept in mind while dealing with a young male with unilateral nasal obstruction. It is successfully treated surgically. Functional Endoscopic Sinus Surgery is the technique of choice and Caldwell Luc operation can be adopted in cases with recurrent polyps.

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