

## Original Article

# Endoscopic Excision of the Antrochoanal Polyp

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**ABSTRACT**

**Objective:** To evaluate the effectiveness of endoscopic excision of the antrochoanal polyp and its role in decreasing the recurrence rate.

**Design:** Retrospective

**Methods:** Medical records of thirty patients with antrochoanal polyp (ACP) diagnosed and treated at King Abdulaziz University Hospital (KAUH) in Riyadh between January 1996 and December 2002 were retrospectively studied. Factors such as gender, age, presenting complaints, findings, pathology, management and recurrence rates were included in this study.

**Results:** Out of thirty patients, 17 were male and their ages ranged from six to 45 years with a mean age of 17.37 years.

Nasal obstruction was the most common presenting symptom. Endoscopic transnasal removal of ACP was performed in 25 patients as primary surgery. Revision

endoscopic removal was done in three patients and two of those who had failure of revision surgery had combined transcanine and endonasal endoscopic removal. All candidates had follow up from nine to 42 months with mean average time of 24 months.

Recurrence was confirmed in five patients (four of them after primary surgery and one patient after revision surgery). However those who underwent combined approach had no recurrence.

**Conclusion:** Endoscopic approach compared to previous modalities of treatment has the capability to ensure complete removal of the ACP and decrease its rate of recurrence. Its safety in children is considerable in capable hands.

Power instrumentation with combined transcanine and middle meatal antrostomy approach is another way to deal with difficult cases and those with recurrence.

KEYWORDS: antrochoanal polyp, endoscopic excision, recurrence

**INTRODUCTION**

Antrochoanal polyp (ACP) is generally accepted as a polyp which arises from the maxillary sinus, herniates through the ostium and extends into the nasopharynx.

It represents 4-6% of all nasal polyps in the general population<sup>[1,2]</sup>. However, it shows a much higher prevalence in pediatric population<sup>[3]</sup>.

Schramm reported that one third of all nasal polyps in children are ACP. Chen and his colleagues found that 50% of patients in their series had allergic diathesis<sup>[4]</sup>, whereas Sirola reported that 42% of his patients had allergic symptoms<sup>[1]</sup>.

It has been proposed that (ACP) develops as a complication of chronic antral disease, particularly chronic sinusitis. The studies of Morowitz<sup>[5]</sup> and Syme<sup>[6]</sup> support this proposal. Histologically, it does not differ considerably from ordinary nasal polyps. However, Heck made distinctions. ACP is larger and has a characteristic dumbbell shape, it almost never contains mucous glands, has a few eosinophils and it occasionally may display pseudosarcomatous changes<sup>[2]</sup>.

**PATIENTS AND METHODS**

The study included thirty patients (17 male and 13 female; age range 6 - 45 years; mean age 17.37 years) who were diagnosed to have ACP at the King Abdulaziz University Hospital (KAUH) in Riyadh, Kingdom of Saudi Arabia (KSA) during the period from January 1996 to December 2002.

Factors including age, sex, presenting complaints, associated symptoms, physical findings, surgical procedure, histopathology, follow up and management of recurrence were studied retrospectively.

**Surgical technique:**

After administration of general anesthesia, patients were placed in supine position with the head slightly elevated. The usual technique of ESS was performed. When the ethmoid sinuses are intact, only infundibulotomy without complete ethmoidectomy is sufficient to progress to the following steps. The intranasal portion of ACP is removed and the natural ostium of the maxillary

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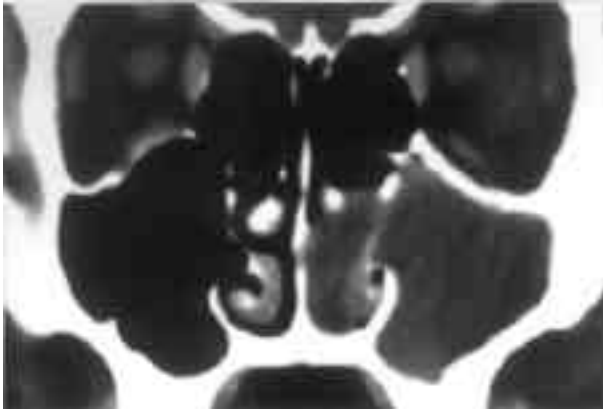


Fig. 1: Coronal computed tomographic view of the paranasal sinuses showing opacification of the left maxillary sinus filled by the antrochoanal polyp

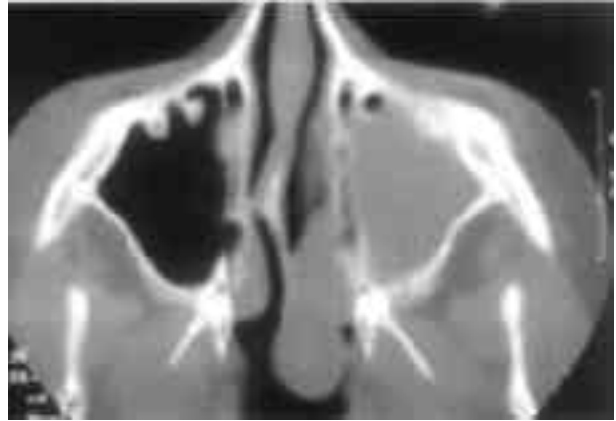


Fig. 2: Axial computed tomographic view of the paranasal sinuses showing opacification of the left maxillary sinus with antrochoanal polyp extending to the choana

sinus is enlarged, to obtain a good surgical view of the sinus. Powered instrumentation with combined transcanine and middle meatal antrostomy is used in difficult cases where the ACP is attached by broad base to the antral mucosa or when it is attached in difficult and an inaccessible location such as the anterior or inferior portion of the maxillary sinus.

## RESULTS

Out of thirty patients, 17 were male and their ages ranged from 6 - 45 years with a mean age of 17.37. Nasal obstruction was the most common presenting symptom with a preponderance of the left side (73.3%) as compared to the right side (26.7%).

The associated allergic symptoms were found in 40% patients. A left-sided ACP was found in 21 patients while a right-sided ACP was seen in seven cases.

Three patients had plain X-ray while 27 patients had non-contrast coronal and axial CT scan of the paranasal sinuses. This usually showed a unilateral opacity involving the maxillary sinus (Fig. 1) sometimes extending into the nasal cavity and nasopharynx (Fig. 2).

Endoscopic transnasal removal of ACP was performed in 25 patients as primary surgery. Revision endoscopic removal was done in three patients. In two of those who had failure of revision surgery, combined transcanine and endonasal endoscopic removal was done.

Histopathology revealed an inflammatory polyp in 16 patients while the remaining 14 polyps were allergic in nature. Ten patients among those with allergic polyp had clinical evidence of allergic symptoms. All candidates had follow up from nine to 42 months with mean average time of 24 months.

Recurrence was confirmed in five patients, four of them after primary surgery and one after revision surgery. However, those who underwent the combined approach had no recurrence.

## DISCUSSION

In our study, 75% of ACP occurred in paediatric age group which is similar to that reported by Schramm<sup>[3]</sup>. Chen *et al* reported a female preponderance although this was not the case in this study. Left-sided ACP's were more common than right-sided (73.3 versus 26.7%) polyps as reported by another study<sup>[3]</sup>.

Histological appearance of these polyps is similar to other inflammatory polyps. However, 46.7% polyps showed abundance of eosinophilic infiltration which disagrees with that reported in another study<sup>[7]</sup>. This may be due to the fact that 40% of our patients had symptoms of seasonal allergies but none of them had confirmed atopy as evidenced by positive skin test or Radio-allergoabsorbent test (RAST).

Historically, surgical approach for ACP involved two different modalities, simple avulsion of the ACP and the Caldwell-Luc approach. Although the Caldwell-Luc procedure offers a good exposure and ensures complete removal of the antral part and sinus mucosa<sup>[3]</sup>, it does carry significant risks to the developing teeth and bone growth centers of the maxilla in children<sup>[8]</sup>.

In a series of 17 patients with ACP who underwent intranasal polypectomy, 11 patients (65%) had recurrence that required further surgery<sup>[3]</sup>. However in our study, nine patients had intranasal polypectomy and there was a recurrence in six (66.6%) cases within an average time of 21.5 months after surgery.

Recently, endoscopic removal of ACP has become the surgical approach of choice. It is less harmful for children and has short recovery time<sup>[9]</sup>. In capable hands, the safety of the endoscopic approach in children is well established<sup>[10]</sup>.

It is generally recommended that the antral portion of ACP should be removed along with the base to decrease the chances of a recurrence<sup>[11]</sup>. The ability of the endoscopic approach to remove the antral part completely renders this technique an effective and safe method of managing ACP. This has been confirmed in two separate studies<sup>[12,13]</sup>.

Successful outcome of the endoscopic removal of ACP means that there should not be any cases of recurrence<sup>[13]</sup>. The procedure however has few limitations. The antral part is removed via a middle meatal antrostomy, particularly when the ACP is attached by a broad base to the antral mucosa or when it is attached in a difficult and an inaccessible location such as the anterior or inferior portion of maxillary sinus<sup>[11]</sup>. Powered instrumentation with combined transcanine and middle meatal antrostomy has been more efficient, less time consuming and capable of resecting the antral part attached by a broad base<sup>[11]</sup>. In this study, two patients had polyp removal by the combined approach after failure of revision endoscopic removal. This procedure may be reserved for difficult cases where the antral part is not accessible or there is recurrence after revision endoscopic surgery.

Thirty patients underwent endoscopic removal of ACP and five patients had recurrence in an average time of 24 months after surgery. This confirms the successful outcome of this approach as has been done in a previous study<sup>[13]</sup>. Moreover, there were more number of patients in our study and they were followed up for a longer period. This may have led to recurrence being confirmed in five cases.

## CONCLUSION

Endoscopic approach as compared to previous modalities of treatment has the capability to ensure complete removal of ACP and decrease its rate of recurrence. Its safety in children is considerable in capable hands. Power instrumentation with combined transcanine and middle meatal antrostomy approach is another way to deal with difficult cases and those with recurrence.

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