Original Article

Antrochoanal Polyps: Clinical Presentation and the Role of Powered Endoscopic Polypectomy

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Antrochoanal polyps are a rare clinical entity. In this review of patients treated between January 1996 and September 2002, there were 18 cases of antrochoanal polyps. The mean age of patients was 20 years. Nasal obstruction was the most common symptom (17 cases, 94%), followed by rhinorrhoea (44%), epistaxis (33%), postnasal drip (28%), and snoring (22%). Chronic sinusitis was the most common associated rhinological finding (50%). Various surgical approaches were used: endoscopic polypectomy and middle meatal antrostomy in seven patients (38.9%), powered endoscopic polypectomy and middle meatal antrostomy in seven patients (38.9%), endoscopic polypectomy and inferior meatal antrostomy in three patients (16.7%) and Caldwell-Luc surgery in one patient (5.6%). No complications were noted in patients treated with powered instrumentation, including the three patients in whom combined transcannal approaches were used. We concluded that powered endoscopic polypectomy was safe and effective. It allowed a more complete dissection and may diminish the chance of recurrence. [Asian J Surg 2004;27(1):22–5]

Introduction

Antrochoanal polyp (ACP) is thought to represent hypertrophic maxillary sinus mucosa herniating into the nasal cavity through the natural or accessory ostium. ACPs are usually unilateral and occur most commonly in the paediatric age group. About 4% to 6% of all nasal polyps are ACPs, which are more common in males than in females. ACPs are macroscopically identical to typical polyps but are not associated with an allergic aetiology. Patients usually present with unilateral or bilateral nasal obstruction. In paediatric populations, sleep disturbances and mouth breathing are common. In adults, snoring and headache may be the presenting symptoms.

ACP typically appear as smooth grey or bluish intranasal masses that arise from the antral mucosa and usually pass into the nasal cavity. Various surgical techniques have been used to remove ACPs, of which endoscopic sinus surgery is safe and effective. The use of powered instrumentation during endoscopic sinus surgery has recently been described as an effective technique for removing ACPs from the nasal cavity and for complete removal of the antral portion. Endoscopic middle meatal antrostomy using 30° and 70° nasal endoscopes combined with transcannal microdebridation further enhances complete removal of the antral portion of ACPs. We retrospectively reviewed patients treated in our hospital during a 6-year period to observe the clinical presentation, associated rhinological findings and forms of surgical treatment with attention to the latest technique of endoscopic middle meatal antrostomy with powered instrumentation.

Patients and methods

We studied the clinical presentations and operative records of patients with ACPs treated surgically between January 1996
and September 2002 at the Department of Otorhinolaryngology, Universiti Kebangsaan Malaysia, Kuala Lumpur. Clinical symptoms, associated rhinological findings and forms of surgical treatment were reviewed and tabulated.

Results

From January 1996 to September 2002, 18 patients with ACPs underwent surgical treatment at our institution. The average age of patients was 20 years (range, 6–58 years), and the male to female ratio was 1:1.5. Follow-up ranged from 6 to 48 months. Nine patients (50%) were under 16 years of age. No patients had symptoms of allergy and one patient had concomitant bronchial asthma. Only two patients had an oral mass that was visible without retraction of the uvula during oral examination.

Clinical features

The most common clinical symptom was nasal obstruction (17 patients, 94%) (Table 1). Rhinorrhoea (44%), epistaxis (33%), postnasal drip (28%), and snoring (22%) were also noted.

Associated rhinological findings

Chronic sinusitis was the most common associated rhinological finding, noted in nine patients (50%) (Table 2). Ethmoidal polyps and septal deviations were each noted in two cases (11%). Only one patient (5.6%) had concomitant choncha bullosa.

Surgical treatment

Endoscopic middle meatal antrostomy was the most common surgery (Table 3), performed in 14 patients (77.8%). Before the introduction of powered instrumentation at our institution, seven patients (38.9%) had ACPs removed by nasal forceps under endoscopic visualization. After its introduction, ACPs were removed with powered instrumentation in seven patients (38.9%). Among these, three patients (16.7%) underwent combined transcanine microdebridation for complete removal of the antral portion of the ACP using 30° and 70° rigid endoscopes. No complication was noted in the group treated with powered instrumentation.

Complication was noted in one patient (5.6%) in the group where forceps were used with endoscopic visualization. This patient presented with high-grade fever, purulent rhinorrhoea, facial pain and headache 3 weeks after surgery. She recovered after treatment with aggressive and appropriate intravenous antibiotic, nasal toilet and decongestant. She remained well and asymptomatic at the time of writing.

In early 1996, three patients (16.7%) underwent endoscopic intranasal polypectomy and removal of the antral portion via an inferior antrostomy window. Among these, two patients had complications after surgery, due to intranasal synchiae and crusting, and both had recurrence after 1 year. The Caldwell-Luc procedure was performed in one patient (5.6%), who then had significant postoperative swelling and a prolonged hospital stay. Currently, our institution’s practice is to use powered endoscopic middle meatal antrostomy with or without transcanine microdebridation for all new cases of ACPs.

Discussion

ACP (Killian polyps) are rare and tend to be dumbbell-shaped with a constriction at the natural or accessory ostium of the sinus. They are more common in men than women and usually appear before the age of 40 years. However, our study showed no sex predilection in 18 patients with an average age of 20 years. The aetiology of ACPs remains unknown. Cook et al found significant correlation with allergic status and bronchial asthma among 33 cases of ACP. However, only one patient had concomitant bronchial asthma in our study. Other papers revealed no correlation between ACP and allergy.
Nasal obstruction (94%) was the most common symptom in our series, found in 17 patients. Rhinorrhoea (44%), epistaxis (33%), postnasal drip (28%), and snoring (22%) were other common complaints. Less common complaints were hyposmia (17%), headache (11%), lump in throat (11%), and nasal discomfort (11%). Orvidas et al noted nasal obstruction (100%), rhinorrhoea (48%), snoring (36%), and mouth breathing (32%) in their 25 patients with ACP.9 Sharma and Daud reported an acute presentation of ACP as a mass filling the oral cavity, resulting in an inability to swallow and speak in a 12-year-old boy.10

Epistaxis is an unusual manifestation of ACP. In such cases, angiofibroma must be excluded in paediatric male patients2 and malignancy in adult patients. Our study found six patients (33%) with epistaxis as the presenting symptom. Four of our patients complained of snoring, two of whom had a significant history and examination that suggested obstructive symptoms. Venkalachalam et al reported two cases of ACP with obstructive sleep apnoea treated with endoscopic intranasal polypectomy and middle meatal antrostomy; repeat sleep study 4 weeks after surgery revealed reversal of the disturbed sleep patterns.11

Chronic sinusitis has been implicated as a cause of ACP, but this has not been proven conclusively.1 Nine patients (50%) in our study had chronic sinusitis, four with maxillary and ethmoidal sinusitis (22.2%) and three with bilateral pansinusitis (16.7%). Unilateral pansinusitis and maxillary sinusitis were noted in one patient each (5.6%). This is consistent with the study of Basak et al, which reported that 50% of patients had concomitant sinusitis.2 Intractable chronic sinusitis is more difficult to treat in patients with ACP.12

Many surgical options for the treatment of ACPs have been suggested to minimize postoperative recurrence. The antral portion of the ACP should be removed completely. The Caldwell-Luc approach has been advocated as the most successful way to completely remove polypoidal tissue.13 It offers good exposure for removal of the antral portion of the ACP. However, it is associated with an increased risk of injury to the infraorbital nerve, postoperative cheek swelling, and a longer hospital stay. Our patient who underwent the Caldwell-Luc procedure developed gross postoperative sublabial swelling. This is not the recommended treatment in children because of disruption of dentition and facial growth.13,14

Endoscopic surgery is an effective treatment for ACP.13,14 In our study, 14 patients (77.8%) underwent endoscopic middle meatal antrostomy. Of these, seven (38.9%) had the antral portion of the ACP removed through the middle meatal antrostomy using nasal forceps. This technique was more difficult and time consuming when using the nasal forceps compared to the microdebriders and led to unavoidable stripping of the normal mucosa around the origin. Sato and Nakashima advocate removal of the antral portion via an inferior antrostomy window.15 No recurrence was noted in their 10 patients after a follow-up of 10 to 46 months. Three patients (16.7%) in our study had removal of the antral portion via an inferior antrostomy window. However, postoperative crusting and synechiae were noted, with recurrence after 1 year, in two patients.

Powered instrumentation in the removal of ACPs reduces the limitations of conventional endoscopic removal.3,4 The benefits of using the powered instrument are the ability to remove tissue precisely without stripping of adjacent mucosa (thus reducing intraoperative bleeding), better visualization, and shorter hospital stay.4 In addition, the suctioned specimen can be used for histological diagnosis.15–17

In our institution, patients are prepared as for endoscopic sinus surgery. Under general anaesthesia, the intranasal portion of the ACP is removed using microdebriders and middle meatal antrostomy is performed to remove remaining polypoidal tissue. If the antral portion is inferomedially or laterally based, and antral washout fails to dislodge the antral polyp, a transcinal approach can be used for complete removal using microdebriders with the aid of 30° and 70° nasal endoscopes. el-Guindy and Mansour recommend the transcinal approach combined with conventional endoscopic surgery for complete removal of ACPs.5 Hong et al suggest a similar approach but

<table>
<thead>
<tr>
<th>Rhinological surgery</th>
<th>n (%)</th>
<th>Complications (n = 3)</th>
<th>Recurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endoscopic polypectomy and middle meatal antrostomy</td>
<td>7 (38.9)</td>
<td>1 (acute on chronic sinusitis)</td>
<td>Nil</td>
</tr>
<tr>
<td>Powered endoscopic polypectomy and middle meatal antrostomy</td>
<td>7 (38.9)</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Endoscopic polypectomy and inferior meatal antrostomy</td>
<td>3 (16.7)</td>
<td>2 (crusting and synechiae)</td>
<td>2</td>
</tr>
<tr>
<td>Caldwell-Luc procedure</td>
<td>1 (5.6)</td>
<td>1 (sublabial swelling)</td>
<td>Nil</td>
</tr>
</tbody>
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using powered instrumentation.\textsuperscript{3} They reported an improvement rate of 96.4\% (27/28 patients). No complications such as infraorbital hyperaesthesia and abnormal facial growth were noted in this study.

Our approach is similar to the technique suggested by Hong et al.,\textsuperscript{3} but we do not routinely use the transcanine approach. Seven of our patients (38.9\%) underwent powered endoscopic removal of ACPs. Among these, three had combined transcanine microdebridation for complete removal of the antral portion of the ACP. With powered instrumentation, ACP removal was faster, visualization was better, and there was precise cutting and no injury to the adjacent healthy mucosa. No significant complications were noted in all cases in which powered instrumentation was used. This is consistent with the study by Hong et al.,\textsuperscript{3} although the authors' experience with powered instrumentation is limited, the initial results are consistent with those of other reports.\textsuperscript{3,4}

In conclusion, ACP is a rare entity but should be suspected in any patient with unilateral or bilateral nasal obstruction. A thorough history and examination are warranted for the diagnosis and management of patients. The higher incidence of associated chronic sinusitis in patients with ACP should be treated accordingly. Powered endoscopic intranasal polypectomy with or without transcanine microdebridation should be the key in the treatment of ACP as this technique helps to assure better visualization with more complete dissection, preservation of normal adjacent mucosa, and diminished chance of recurrence.

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References