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Clinical features and management of antrochoanal polyps in children: Cues from a clinical series of 58 patients

Fabio Pagella[a], Enzo Emanuelli[b], Alessandro Pusateri[b], Daniele Borsetto[b], Diego Cazzador[b], Roberta Marangoni[a], Eugenia Maiorano[a], Alessia Zanon[b], Cristina Cogliandolo[c], Andrea Ciorba[c,*], Stefano Pelucchi[c]

[a] ENT Department, I.R.C.C.S. Policlinico San Matteo, University of Pavia, Italy
[b] Department of Neuroscience, Institute of Otorhinolaryngology, University Hospital of Padova, Italy
[c] ENT Department, University Hospital of Ferrara, Italy

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ABSTRACT

Objective: To review the clinical features of pediatric patients affected by antrochoanal polyps (ACPs) and surgically treated at three University settings.
Methods: Retrospective study. The present research includes the clinical data of subjects affected by ACPs, aged < 18 years and referred to three ENT Departments, between January 1st 2003 and September 30th 2016. All patients underwent nasal endoscopy and sinonasal imaging; all subjects have been treated surgically.
Results: Fifty-eight patients underwent functional endoscopic sinus surgery (FESS) for ACPs removal, under general anesthesia. There were no major intraoperative complications. Recurrence occurred in 12 cases (20.5%).
Conclusions: FESS was the first-choice treatment for APCs in the present series; our recurrence rate was similar to that of other reports available in literature. Recurrences of ACPs in children still represent a clinical challenge; it is likely that an improved comprehension of ACPs biology could help in better understanding the pathophysiology of this disease.

1. Introduction

Antrochoanal polyps (ACPs) are usually unilateral, and occur less commonly in adults than in children, representing about 10% of all adult polyps and about 35% of all pediatric cases of nasal polyps [1]. The clinical manifestations include unilateral nasal obstruction, purulent rhinorrhea, dysphagia, snoring, foreign body sensation, hyposmia and speech disturbances due to oropharyngeal extension [2]. By definition, these benign lesions arise from the maxillary sinus and extend through the nasal cavity to the choana. The pathophysiology of ACPs still remains unknown. Considered as a separate entity from bilateral polyposis, chronic inflammation and allergy might represent common etiologies of ACPs; one of the most relevant theories suggests that these two conditions might cause acinar mucus gland obstruction and subsequently the development of an antral cyst. This then grows towards the antrum and causes eventual ostiomeatal complex obstruction. This in turn results in increased pressure in the maxillary sinus, thus leading to herniation of the polyp into the nasal cavity, mostly through the accessory ostium [3,4].

In the literature, there are currently few series of pediatric ACPs and most reports are on small numbers.

The aim of this study is to evaluate the clinical features of pediatric patients affected by ACPs and surgically treated at three University settings, also reviewing the available literature.

2. Materials and methods

This was a retrospective study. The research was conducted at three different ENT Departments of three University Hospitals. Inclusion criteria were patients (i) aged < 18 years, (ii) diagnosed with ACP and (iii) surgically treated between January 1st, 2003 to September 30th, 2016. Patients aged > 18 years and with incomplete clinical data were excluded from this study.

Medical charts and clinical data were retrospectively reviewed. Preoperatively, all patients underwent nasal endoscopy and computed tomography (CT) (Fig. 1); magnetic resonance imaging (MRI) of the sinonasal district was also performed in some cases.

Surgery was performed under general anesthesia in a slightly

* Corresponding author. ENT & Audiology Department, University Hospital of Ferrara, Italy Via Aldo Moro 8, 44124, Ferrara, Italy..
E-mail address: andrea.ciorba@unife.it (A. Ciorba).

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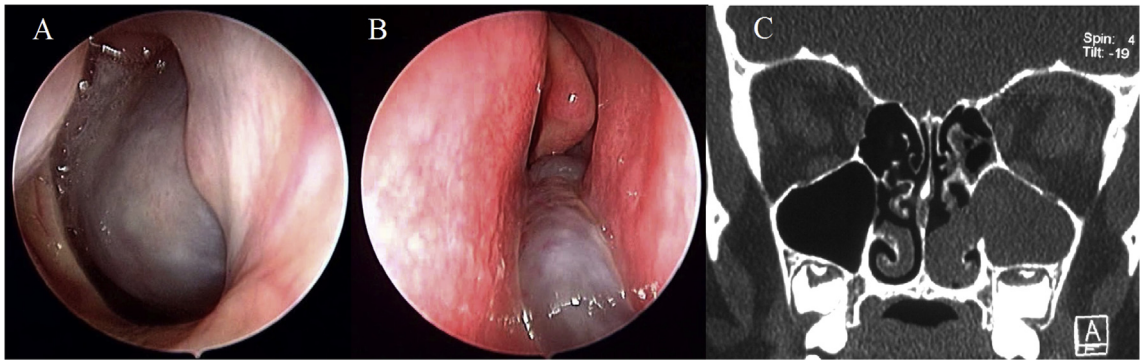

Fig. 1. Endoscopic and radiological features of a left antrochoanal polyp (A: endoscopic endonasal view of the nasopharynx through the right nasal fossa, showing the choanal portion of the polyp; B: endoscopic endonasal view of the middle meatus; C: coronal CT scan showing the polyp arising from the maxillary sinus).

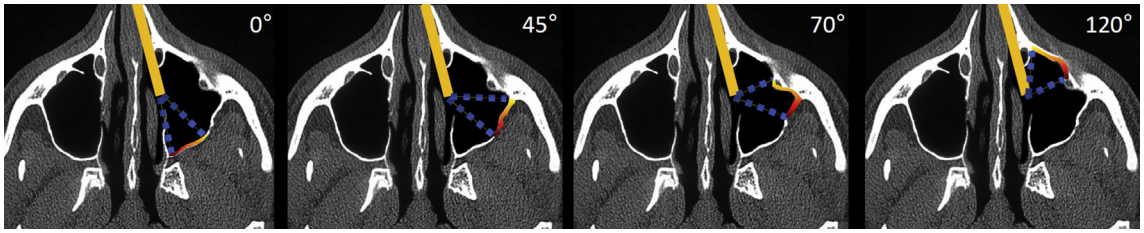

Fig. 2. Scheme showing different view angles (0°–45° - 70°–120°) inside the maxillary sinus.

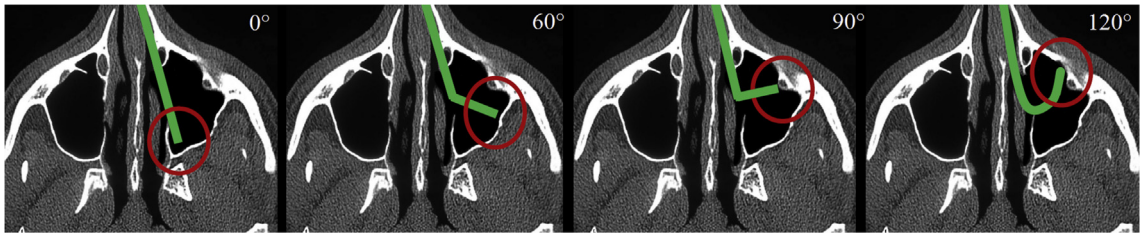

Fig. 3. Scheme showing different working angles of straight and curved (60°–90° - 120°) blades inside the maxillary sinus.

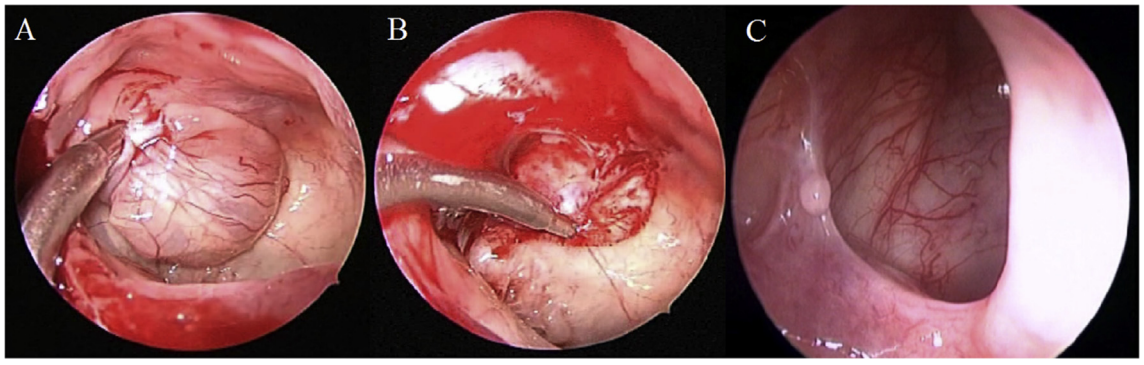

Fig. 4. Intraoperative sequence (A–B) showing the endoscopic removal of a left antrochoanal polyp and the selective treatment of the pedicle area inside the maxillary sinus using a 70° scope and a curved 120° blade, through a middle antrostomy. Endoscopic examination of the left maxillary sinus with a 45° scope at twelve-months follow-up (no evidence of polyp recurrence) (C).

reversed Trendelenburg position (30°) by the senior Authors of each center (FP; EE; SP). Upon orotracheal intubation, a decongestion of the nasal mucosa was achieved with pledgets soaked in xylometazoline hydrochloride 0.1% + oxybuprocaine chlorhydrate 0.01% solution and injection of 1% lidocaine with 1:100,000 epinephrine at the level of the head of the middle turbinate and the lateral nasal wall. When septal or middle turbinate anatomical variants were blocking the access to the maxillary sinus, such as deviations/spurs or concha bullosa, they underwent correction as the initial step. The first stage was the removal of the intranasal portion of the polyp, usually with microdebrider or with cutting instruments, in order to identify the origin of the lesion from the middle meatus. At this point, a partial inferior uncinectomy and a middle meatal antrostomy was performed until the posterior wall of the maxillary sinus to gain adequate access for the surgical maneuvers. With angled (45°, 70° and 120°) scopes (Fig. 2), the polyp was followed and removed usually with curved microdebrider blades (60°, 90° and even 120°) (Fig. 3) in order to achieve a complete removal of the mucosal portion covering the periostium on the site of origin inside the maxillary sinus (Fig. 4). Only in selected cases, when the pedicle area could not be reached through the antrostomy, a mini-canine fossa