Atypical presentation of antrochoanal polyp in a child

Leyla Kansu, Erdinç Aydın

Department of Otolaryngology–Head and Neck Surgery, Başkent University Faculty of Medicine, Ankara, Turkey

SUMMARY: Kansu L, Aydın E. Atypical presentation of antrochoanal polyp in a child. Turk J Pediatr 2011; 53: 320-324.

Antrochoanal polyp is a benign, solitary polypoid lesion arising from the edematous mucosa of the maxillary sinus and extending through the maxillary ostium into the nose. In children, it constitutes 33% of all nasal polyps. It presents most commonly with unilateral nasal obstruction and purulent rhinorrhea. Surgery is the usual treatment for antrochoanal polyps. The primary aim of treatment for antrochoanal polyp must be complete removal with total cleaning of the maxillary sinus. In this article, we present a case of a 13-year-old boy with an antrochoanal polyp who complained of difficulty in breathing and swallowing; the differential diagnosis of nasopharyngeal masses and the treatment of antrochoanal polyps in children are also discussed.

Antrochoanal polyps present most commonly with unilateral nasal obstruction; however, they sometimes present atypically. Clinical manifestations may mimic other neoplasms in the nasal cavity and nasopharynx. Nasopharyngeal masses must be evaluated by endoscopic examination and radiologic imaging before surgery to avoid unnecessary and harmful surgical techniques. Reporting this case is important to direct attention of the Ear, Nose and Throat specialist and pediatricians when facing similar cases.

Key words: dyspnea, nasopharyngeal mass, antrochoanal polyp, children.

Antrochoanal polyp (ACP) is a benign, solitary polypoid lesion arising from the edematous and inflammatory mucosa of the maxillary sinus antrum and extending through the maxillary ostium into the nose, then into the posterior choana; it may also extend into the nasopharynx[1]. It rarely comes from other regions, such as the sphenoid or ethmoid sinuses. The soft tissue mass does not erode or destroy contiguous soft tissue or bony structure[2,3]. Although Palfyn, in 1753, reported the first case of ACP, Gustav Killian was the first author to accurately describe its true site of origin in the maxillary sinus, in 1906[3,4].

Antrochoanal polyp (ACP) is infrequent. It represents approximately 4% to 6% of all nasal polyps in the general population[4]. It is uncommon in children but occurs at a higher rate than in the adult population. ACP accounts for 33% of all nasal polyps in children[5,6]. Although the etiology of ACP remains unknown, allergy and infection are thought to play an important part. Cystic fibrosis is a risk factor in childhood[2,7].

Antrochoanal polyp (ACP) presents most commonly with symptoms of unilateral nasal obstruction and purulent rhinorrhea. Rare clinical presentations include epistaxis, dyspnea, dysphagia, weight loss, auto-amputated expulsion per mouth, expansion of the maxillary antrum with evident fullness of cheek, snoring, obstructive sleep apnea syndrome, weight loss, halitosis, and anosmia. Based on its size, the ACP may cause eustachian tube obstruction and thus, unilateral secretory otitis media[6,8,9].

In this article, we present the case of a 13-year-old boy with an ACP who complained of difficulty in breathing and swallowing; the differential diagnosis of nasopharyngeal masses and the treatment of the ACPs in children are also discussed.

This manuscript was presented as a poster presentation in the Annual Conference in the 33rd Year of the European Academy of Facial Plastic Surgery, September 1-5, 2010, Antalya, Turkey.

Case Report

A 13-year-old boy was referred to our department from another hospital with difficulty in breathing and swallowing for two weeks. Over time, his complaint had increased. He had been complaining of nasal obstruction for a long time. His family thought that his complaints were due to adenoid hypertrophy. There was no nasal discharge, epistaxis or allergic tendencies.

The child was in good physical health. He had hyponasal speech. On examination of the oral cavity, there was a large, smooth surfaced, reddish mass hanging behind the soft palate into the hypopharynx. Bilateral palatine tonsils were hypertrophic (Fig. 1). Anterior rhinoscopy was normal. On rigid endoscopic examination of the nasal cavities, nasal passages were clear bilaterally and there was no mass, but in the nasopharynx, adenoid hypertrophy and a smooth surfaced, reddish mass were evident. On examination of the neck, there was no palpable lymph node.

Computerized tomography (CT) of the paranasal sinuses demonstrated pansinusitis (Fig. 2 a, b, c, d). A nasopharyngeal mass with no bony erosion or expansion was seen. Magnetic resonance imaging (MRI) showed a cystic mass in the nasopharynx (Fig. 3).

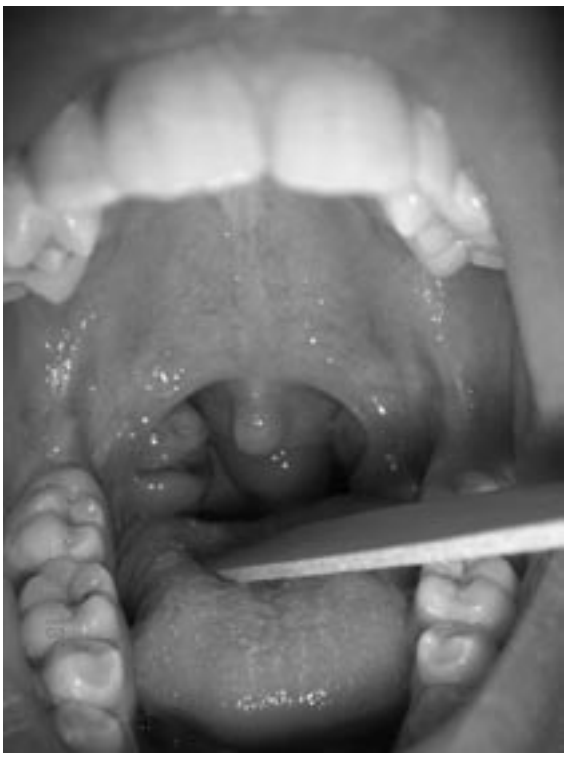

Fig. 1. View of oropharyngeal mass.

The patient was operated under general anesthesia, in the supine position with his head slightly elevated. Initially, the left middle turbinate was medialized and the pedicle of the ACP, which arose from the posterior accessory sinus ostium, was seen. The pedicle of the polyp was passing through the left choana into the nasopharynx. On rigid nasal endoscopic examination, we could not see the pedicle in the initial polyclinic examination because it was very thin, and decongestion and topical anesthesia were not adequate. The inferior portion of the uncinate process was removed with back-biting forceps. An accessory sinus ostium and maxillary sinus ostium were connected, creating a large maxillary antrostomy. The pedicle of the polyp was cut with scissors. The root in the maxillary sinus was cleaned surgically in order to avoid recurrence. The antral portion of the polyp was removed through the maxillary ostium; the part in the nasopharynx was not removed from the nasal passage, but rather from the oropharynx (Fig. 4). No nasal packing was used. Prophylactic antibiotic and nasal lavage was given for one week in the postoperative period. Histopathological examination showed features of an inflammatory polyp.

The outcome of surgery was evaluated by CT scans one year after surgery. No evidence of ACP or rhinosinusitis was found on CT scans.

Discussion

In young adults, differential diagnosis of nasopharyngeal masses includes juvenile nasopharyngeal angiofibroma, meningoencephalocele, nasal glioma, hemangioma, grossly enlarged adenoids, and nasopharyngeal malignancies[1,9,10]. Careful history taking, evaluation with endoscopy and radiographic examinations are helpful in the differential diagnosis of these lesions. Juvenile nasopharyngeal angiofibroma is a highly vascular, benign neoplasm with potential for local destruction. It occurs in the nasopharynx or posterior nasal cavity of pubescent males. Epistaxis and nasal obstruction can be common

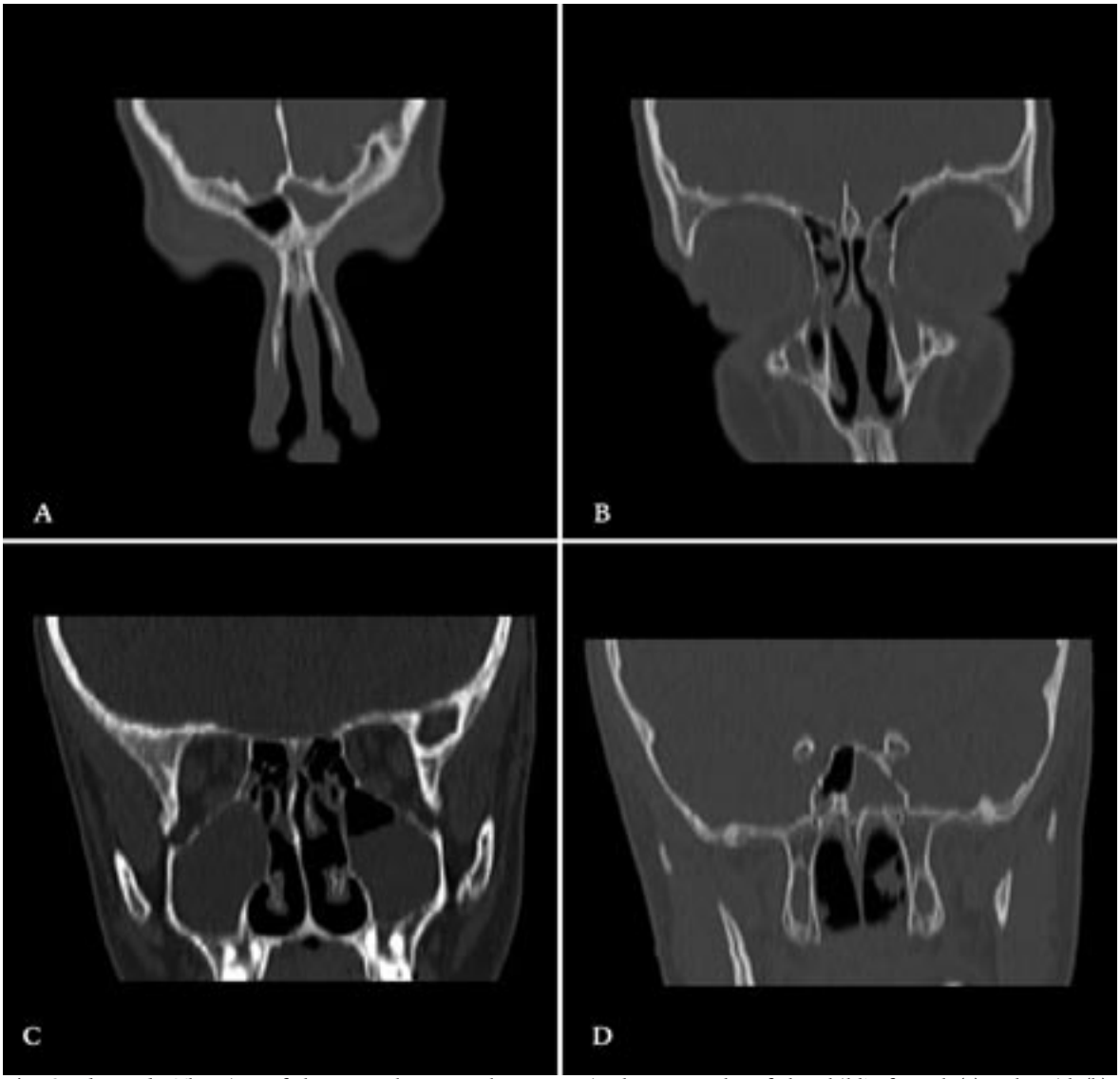

Fig. 2a, b, c, d.: The view of the coronal paranasal computerized tomography of the child's frontal (a), ethmoid (b), maxillary (c), and sphenoid (d) sinuses.

symptoms. On CT, bony erosion of contiguous structures is seen. Strong enhancement is shown in the MRI studies[3]. The most common malignant tumors of the nasopharynx in childhood are lymphoma, rhabdomyosarcoma, lymphoepithelioma, olfactory neuroblastoma, and chordoma. These neoplasms may cause difficulty in the differential diagnosis. These usually cannot be differentiated by radiographic means.

The more common manifestation of ACP is unilateral nasal obstruction, but it may sometimes be bilateral, depending upon the blockage of the nasopharynx[11]. In our patient, there was complaint of nasal obstruction, which his family presumed to be due to adenoid hypertrophy.

Anterior rhinoscopy usually shows a polypoidal mass. A larger polyp may extend into the nasopharynx. In our case, anterior rhinoscopy was normal.

Nasal endoscopy is the gold standard in the diagnosis of ACP. During nasal anterior rhinoscopy or nasal endoscopy, the ACP appears as a bright, white mass in the middle meatus and nasal cavity[4]. In our case, the ACP arose from the accessory ostium, which was at the left posterior-medial corner of the maxillary

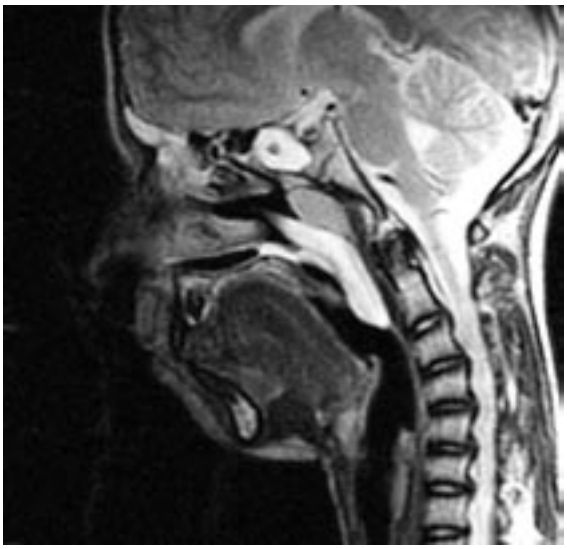

Fig. 3. Magnetic resonance imaging of the mass.

sinus. The pedicle was very thin, most likely due to the hanging solid part of the ACP's weight. We could not see this on the endoscopic examination.

Computerized tomography (CT) is the radiological choice for evaluation of nasopharyngeal masses. Classically, ACPs demonstrate a hypodense mass arising from an opacified maxillary sinus extending through the middle meatus into the nasal cavity. As the polyp enlarges, it may extend posteriorly toward the choana into the nasopharynx. In our case, there was pansinusitis on the paranasal sinus CT, but there was no mass in the nasal cavity.

Surgery is the usual treatment for ACPs. Several surgical techniques have been described in the literature. The primary aim of treatment of ACPs must be complete removal of polyps (both nasal and cystic parts)[4,5,12].

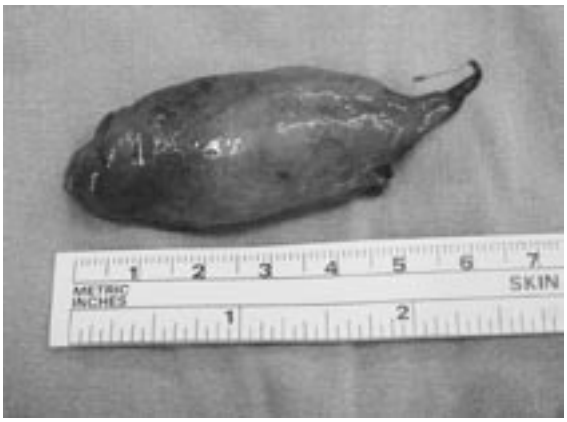

Fig. 4. The choanal portion of the polyp.

In the past, the Caldwell-Luc technique was used. The sequelae after Caldwell-Luc operations, such as facial paresthesia, the risks of injuring tooth buds or tooth roots and the infra-orbital nerve, and facial growth encroachment, have made it less favorable than the endoscopic surgeries[1,9,11].

Functional endoscopic sinus surgery is currently the gold standard technique. It has been shown to be a safe and effective method in the treatment of ACPs. There is a shorter recovery time and fewer side effects. However, the success rate of this approach is 76.9%[11]. In our patient, no recurrence was seen one year after surgery. Identifying and removing the origin of the polyp in the maxillary antrum are the cornerstones of successful treatment of ACPs.

Recently, endoscopic middle meatal surgery and transcanine sinuscopy have been described in management of ACPs. The success rate was found as 100% in the combined endoscopic and transcanine approach[4].

REFERENCES

1. Lee TJ, Huang SF. Endoscopic sinus surgery for antrochoanal polyps in children. Otolaryngol Head Neck Surg 2006; 135: 688-692.
2. Salib RJ, Sadek SA, Dutt SN, Pearman K. Antrochoanal polyp presenting with obstructive sleep apnoea and cachexia. Int J Pediatr Otorhinolaryngol 2000; 54: 163-166.
3. Towbin R, Dunbar JS, Bove K. Antrochoanal polyps. AJR 1979; 132: 27-31.
4. Frosini P, Picarella G, De Campora E. Antrochoanal polyp: analysis of 200 cases. Acta Otorhinolaryngol Ital 2011; 29: 21-26.
5. Al-Mazrou KA, Bukhari M, Al-Fayez A. Characteristics of antrochoanal polyps in the pediatric age group. Ann Thor Med 2011; 4: 133-136.
6. de Freitas MR, Giesta RP, Pinheiro SD, da Silva VC. Antrochoanal polyp: a review of sixteen cases. Braz J Otorhinolaryngol 2006; 72: 831-835.
7. Cetinkaya EA. Giant antrochoanal polyp in an elderly patient: case report. Acta Otorhinolaryngol Ital 2008; 28: 147-149.
8. Sayed RH, Rashad UM. Atypical presentations of antrochoanal polyps. Int Congr Ser 2003; 1240: 569-577.
9. Özdek A, Samim E, Bayiz Ü, et al. Antrochoanal polyps in children. Int J Pediatr Otorhinolaryngol 2002; 65: 213-218.

10. Sharma HS, Davud AR. Antrochoanal polyp-a rare paediatric emergency. Int J Pediatr Otorhinolaryngol 1997; 41: 65-70.

11. Frosini P, Picarella G, Casucci A. An unusual case of antrochoanal polyp with sudden laryngeal dyspnoea and stridor onset. Acta Otorhinolaryngol Ital 2008; 298: 212-214.

12. Ozer F, Ozer C, Cagici CA, Canbolat T, Yilmazer C, Akkuzu B. Surgical approaches for antrochoanal polyp: a comparative analysis. B-ENT 2008; 4: 93-99.