

# Antrochoanal polyp in pediatric age. A purpose of a clinical case

## Abstract

The antrochoanal polyp is a rare entity in the pediatric age; represents 4-6% of all nasal polyps in the general population, defined as a single, benign mass originating in the sinus maxilla, grows toward the posterior choana and may extend to the nasopharynx. Diagnosis is established by clinical findings and imaging studies; in particular, tomography. Most of the patients have a lesion visible on anterior rhinoscopy, as well as obstructive nasal symptomatology. During the early stages of development of a nasal polyp, when its size is still small, it is possible to make it disappear with corticosteroid treatment. The Surgical treatment remains the most effective and consists of surgical removal with Caldwell-Luc approach (antroostomy) or endoscopic. The objective of our work is to describe the diagnosis, therapeutic management, review the bibliography as well as the possible Differential diagnoses of a case of antrochoanal Killiam polyp.

**Keywords:** antrochoanal polyp, antrochoanal polyp, polyp killiam solitaire

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## Introduction

Palfyn was the first to describe the antrochoanal polyp in 1753, but he was not until 1906 that Killiam detailed the natural evolution of the entity and its probable origin inside the maxillary sinus; previously it was thought that his development was from the posterior portion of the choana. In 1909, Kubo describes that the lesion originates specifically from the maxillary antrum; after this publication, he other sites of origin have been mentioned in the literature, such as the ethmoid and sphenoid. Antrochoanal polyps are a very rare pathology. Incidence in the general population is estimated between 4 and 6%. The diagnosis is established by clinical findings and imaging studies; in especially tomography. Most patients have a visible lesion in the anterior rhinoscopy, as well as obstructive nasal symptoms.

The diagnosis of antrochoanal polyp (ACP) is very suggestive when in the Waters and lateral radiographs of the nasopharynx show opacification without expansion of the maxillary sinus, which coexists with a nasopharyngeal mass. The CT findings include the presence of a hypo dense tumour that occupies the maxillary antrum and extends through the natural or accessory ostium of the maxillary sinus towards the nasal cavity lengthening while respecting the infundibulum ethmoid, which passes between the middle turbinate and the lateral nasal wall without erode or expand bony structures; can be extended later until reaching the choana and nasopharynx.<sup>1,2</sup> There are many theories that investigate about the cause of nasal polyps. In the seventeenth century Runge posits that they were constituted by the strangulation of proliferated epithelia. saw them as a prolapse of the lips of the ostium or mucosa of the sinus. Others suggested that its formation was due to infectious lymphangitis, vascular changes or local disturbances of the immunity of the nasal mucosa. However,

many agree to include allergic factors among the causes of nasal polyps and attach special interest to the factor constitutional within the genesis of these.<sup>2</sup> Two Nasal polyposis has been associated with other entities such as asthma, rhinitis allergy, cystic fibrosis, and intolerance to nonsteroidal anti-inflammatory drugs (NSAIDs), which can lead to nasosinus polyposis, causing 20% of the chronic rhino sinusitis. Its etiology is still a matter of controversy, and the currently studied theories are: allergic, infectious, and genetic and inflammatory.<sup>2</sup> There are various classifications of nasal polyps. If they order in isolation or in groups, pedunculated, senile, unilateral; bilateral with or without invasion of the paranasal sinuses.

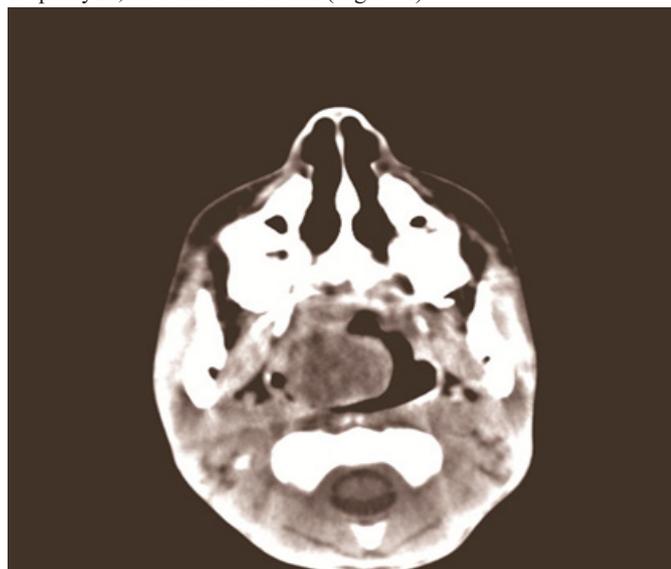
According to its location, classified as nasal or antrochoanal; depending on the cause, in inflammatory or allergic; and attending to the anatomopathological changes that occur in the nasal mucosa, they are divided into edematous, fibrous, angiectatic, glandular and cystic. From the clinical point of view, the polyp is mentioned choanal or solitary Killian polyp, nasal polyp with allergic syndrome, polyp relapsing and deforming of young people (Woakes syndrome) and the banal polyp.<sup>1,3</sup>

The common symptom of all of them is nasal obstruction, generally of the nasal type. Progressive, with the sensation of the existence of a valve in the third posterior nostril<sup>4</sup> the antrochoanal polyp in a pathological entity singular benign nose and sinus syndrome described by The antrochoanal polyp is uncommon, usually solitary, benign, growing slow, arising from the antrum and directed to the choanae through the ostium. Presents predominantly in men between 30 and 50 years its etiology and risk factors for its development have not been well defined. Is a pathology more frequent in adults (4%) than in children (0.1%), however it is much more common in children with cystic fibrosis (6-48%). When it comes to a single polyp, it can

be of benign origin or malignant, and in the case of children it may be a congenital lesion.<sup>5</sup> They have not been extensively studied due to their rare occurrence and represents 4–6% of all nasal polyps in the general population, in the pediatric group this proportion increases to 33%.<sup>4,5</sup>

### Clinical case presentation

This is a 13-year-old male patient from Songo la Maya, a rural area of Santiago de Cuba, with a history of chronic adenoiditis pending surgical treatment due to low hemoglobin levels, which goes to the emergency room for frequent vomiting general malaise weight loss weakness fatigue. On physical examination, yellowish discoloration of the skin and mucous membranes, in the anterior rhinoscopy patent nostrils are observed a pharyngoscopy reveals a tumour mass that bulges the soft palate, displaces the right tonsil and is seen behind the uvula Admission is made to our service for the corresponding study verifying hemoglobin figures of 90g /l, a breast X-ray is performed paranasal water view, where veiling of the maxillary sinus is observed right, is evaluated by the nutritional support group and is indicated a nutritional supplement for the patient's malnutrition and anemia, with the objective of improving preoperative nutritional status. Fluoroscopy is performed because the patient referred difficulty swallowing that caused vomiting and made it impossible to eat correctly, which was normal and the passage of contrast through the esophagus. CT and MRI are performed on both Images show a tumor that extends from the right nostril occupies the entire nasopharynx and descends to the oropharynx, no bone destruction (Figure 1).



**Figure 1** Computerized axial tomography, shows a tumour image in the nasopharynx.

After having studied it, it is decided to operate and it is visualized in the act surgical large tumor mass descending through the nasopharynx Performs touch finding a hard consistency tumor with a pinkish coloration

The tumour is removed and the sample is taken for biopsy, the size and macroscopic characteristics. Observing a polyp large, multilobed, smooth, pink in color with colored areas yellowish and vascularized areas (Figure 2 &3)

He is discharged 48 hours after surgery. The diagnosis of polyp by biopsy result.



**Figure 2** Forced posterior rhinoscopy shows an image of the Killian polyp.



**Figure 3** Solitary Killian polyp, anatomical piece for biopsy.

### Discussion

This constitutes a case of interest for being a patient who clinically had a very deteriorated general condition, malnourished, with moderate anemia, with a visible tumor mass, in which all those entities that could be in correspondence with the patient's picture. The diagnostic means that were believed pertinent were used, since everything It led us to suspect a malignant tumour of the nasopharynx. Fortunately for the patient and thanks to medical expertise and the scientific thought of the ENT medical service, it was possible to diagnose and extract this large tumor mass, which caused the patient all this picture general, turning out to be a Killian's antrochoanal polyp, which is a tumor benign but due to its growth it sometimes behaves as malignant, as it was in this case. Biopsies are important for unilateral lesions since there are many pathologies, both benign and (nasopharyngeal angiofibroma, inverted papilloma, antrochoanal polyp...) such as malignant (squamous cell carcinoma...) that we can find. In the case of children, the presence of nasal polyps should make us think about the possibility of cystic fibrosis in bilateral cases and meningoencephalocele in cases unilateral.<sup>4</sup> the bases of the diagnosis are the clinical history and the findings to exploration. Examination with the rhino scope allows to observe directly the internal structures of the nose. Tomography is more detailed when demonstrating the

total or partial occupation of the sinus, the continuity with endonasal and choanal formation, dimension and relationship with structures neighbors, important information for surgical planning.<sup>5</sup>

In the cases that are necessary, a CT scan of the paranasal sinuses will be requested, since it is the most useful test, especially when planning a surgical treatment. Also an MRI of the skull and paranasal sinuses can be necessary when you want to study the origin and extension of a mass polypoid in the nostrils.<sup>1,3-5</sup>

Imaging tests such as CT provide us with additional information, such as is the extension of the lesion as well as other associated pathologies, complications and as a pre-surgical study of the lesion. In the tac we have to identify structures of vital importance such as the nasal septum, the middle turbinate and the bony walls of the sinuses. We can see bone expansion or erosion. You can also see air-fluid levels and the complete breast opacification.<sup>6</sup>

During the early stages of nasal polyp development, when your size is still small, it is possible to make it disappear with a treatment of corticosteroids. These are used through nebulizations in the nostrils or orally. Along with corticosteroid treatment, they could also be used antibiotics and antihistamines, especially when infections are present.<sup>4-6</sup> when it reaches a large size that interferes with breathing or causes discomfort to the patient the treatment of choice is always surgical.<sup>6-8</sup>

Treatment consists of surgical removal using the Caldwell- Luc (antroostomy) or endoscopic, with no significant differences between them regarding the long-term outcome 4,8. Endoscopic surgery is a less invasive technique, more expensive and not available in all hospitals. If it is removed through the nostril as if it were a nasal polyp without resecting the antral stalk, 20-30% will recur at 2 years.<sup>9,10</sup>

## Conclusions

Although its etiology is still a matter of controversy, the theories studied at present are: allergic, infectious, genetic and inflammatory. Advances in imaging techniques, such as endoscopy and computed tomography (CAT), have influenced the improvement of its diagnosis. During the early stages of development of a nasal polyp, when its size is still small, it is possible to make it disappear with a corticosteroid treatment. Surgical treatment remains the most effective consists of surgical removal with Caldwell-Luc approach (antroostomy) or endoscopic.

## Conflicts of interest

No conflicts of interest.

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