

# Simultaneous antrochoanal and sphenchoanal polyps: a rare clinical entity

MUGE OZCAN, MD, SAMET OZLUGEDIK, MD, AYKUT IKINCI GULLARI, MD

## Abstract

Choanal polyps almost always appear as solitary growths and most commonly arise from the maxillary sinus. Sphenchoanal and ethmoidchoanal polyps are extremely rare. Co-existence of more than one choanal polyp is even more infrequent. We present a patient with an antrochoanal and an accompanying sphenchoanal polyp for the first time in the literature. We discuss the clinical presentation, pathogenesis and surgical management of this rare clinical entity.

**Key words:** Nasal Polyps; Maxillary Sinus; Sphenoid Sinus

## Introduction

The polyps which arise from the paranasal sinuses and pass through the sinus ostia into the nasal cavity or hang on a large pedicle into the nasopharynx are defined as choanal polyps. These polyps usually arise from the maxillary sinus;<sup>1,2</sup> however, an unusual origin such as sphenoid or ethmoid sinus has occasionally been reported.<sup>3,4,5,6</sup> Presence of more than one choanal polyp is extremely rare.<sup>7,8</sup> Simultaneous presence of antrochoanal and sphenchoanal polyps has not previously been reported in the literature. In this paper, we present a patient with simultaneous antrochoanal and sphenchoanal polyps, and discuss the clinical presentation, pathogenesis and surgical management of the case.

## Case report

A 24-year-old male was admitted with a two-year history of nasal obstruction, intermittent nasal congestion and nasal discharge. Anterior rhinoscopy showed a whitish polypoid mass in his left nasal cavity. Nasal endoscopic examination revealed that the polypoid mass was filling the left nasal cavity and running into the nasopharynx. The stalk of the polyp could be seen behind the uncinate process. Coronal paranasal sinus tomography (CT) demonstrated a left antrochoanal polyp that enlarged the maxillary ostium and extended into the nasopharynx (Figure 1a). An opacity resembling an air-fluid level was seen in the left sphenoid sinus (Figure 1b); this appearance was regarded as sinusitis. Surgical removal of the polyp was planned.

In surgery, following uncinectomy and middle meatal antrostomy, the polyp arising from the maxillary sinus was removed. After excision of the antrochoanal polyp, a second choanal polyp was seen communicating with the left sphenoid sinus through a thin pedicle. The CT results were re-evaluated in the operating room, and it was realized that the opacity seen in the left sphenoid sinus was, in fact, the cystic portion of the sphenchoanal polyp

(Figure 1b). Later, the pedicle of the sphenchoanal polyp was severed and the choanal portion was extracted. The anterior wall of the sphenoid sinus was resected in order to remove the cystic, intrasinusoidal part. The patient has no complaints and is free of disease on endoscopic examination in the 14th post-operative month.

## Discussion

Antrochoanal polyps account for four to six per cent of all nasal polyps.<sup>9</sup> Sphenchoanal polyps are extremely rare. Co-existence of more than one choanal polyp is even more infrequent. Bilateral antrochoanal polyps have been reported in only two cases.<sup>7,8</sup> To our knowledge, a patient with simultaneous antrochoanal and sphenchoanal polyps is reported here for the first time in the literature.

As demonstrated here, if there is more than one choanal polyp present in one side of the nose, the sphenchoanal polyp may be missed in nasal endoscopy since it is hidden by the larger and more anteriorly located antrochoanal polyp. The sphenchoanal polyp may be diagnosed after the excision of the antrochoanal polyp; however, accurate pre-operative diagnosis of sphenchoanal polyps is very important for planning the surgical treatment and informing the patient of the possible surgical risks.

Choanal polyps almost always occur as solitary masses, but neither the reason for this nor for the more frequent involvement of the maxillary sinus is known. Mills<sup>10</sup> suggested that antrochoanal polyps develop due to obstruction and secondary enlargement of the mucus glands during the recovery phase of sinusitis. Berg *et al.*<sup>2</sup> reported that enlarged intramural cysts protruded into the nasal cavity passing through the sinus ostium, and later became polypous. Chronic sinusitis and chronic obstruction of the sinus ostia, as well as allergy, have been suggested to play a role in the development of choanal polyps.<sup>11</sup>

The maxillary sinus is the largest of all the paranasal sinuses, and it contains a relatively greater number of acinar mucus glands. In addition, if the ostium of the



FIG. 1

(a) Coronal CT scan showing the antrochoanal polyp arising from the left maxillary sinus, (b) Coronal CT scan demonstrating opacity in the left sphenoid sinus of the same patient. Regarded as sinusitis first, this is in fact the cystic portion of the sphenochanoal polyp.

maxillary sinus is obstructed, the negative pressure created inside may be greater than in the other paranasal sinuses owing to its larger volume. However, none of these factors explain the basis for the solitary occurrence of the choanal polyps. We have not encountered any investigation of this topic in our review of the literature, possibly due to the rarity of their simultaneous occurrence.

for the treatment of our patient. In order to prevent recurrence, we removed the intrasinusoidal cystic portions of both choanal polyps completely as well as the nasal and nasopharyngeal parts. There is no recurrence in our patient 14 months after surgery.

In conclusion, simultaneous antrochoanal and sphenochanoal polyps may be present in the same nasal cavity. The presence of opacity in the sphenoid sinus in a paranasal CT scan should alert the surgeon to the presence of a sphenochanoal polyp, even if an antrochoanal polyp is seen in nasal endoscopy.

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- **This is a rare case of co-existing antrochoanal and sphenochanoal polyps**
- **Diagnosis was made by nasal endoscopy and CT scan**
- **Treatment was by surgical excision**

CT is an ideal method for the demonstration of choanal polyps. In the case of the antrochoanal polyp, the pedicle leaves the sinus through the natural or accessory ostium.<sup>6</sup> In the case of the sphenochanoal polyp, the cystic part of the polyp is located in the sphenoid sinus.<sup>4,6</sup> Usually, the involved sinus appears completely or partially opacified in the paranasal sinus CT scan, although its pedicle may not always be identified. CT demonstrated the pedicle of the antrochoanal polyp in our patient; however, the stalk of the sphenochanoal polyp was not identifiable.

Definitive diagnosis can be made in nasal endoscopy by identification of the sinus ostium that the stalk of the polyp passes through. The choanal polyps are treated surgically and endoscopic techniques are widely used for their removal.<sup>1,11</sup> We also preferred the endoscopic technique

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Address for correspondence:

Muge Ozcan,  
Yucetepe sitesi. A blok. 59/6,  
06580 Anittepe,  
Ankara, Turkey.

E-mail: mugeozcan@yahoo.com

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