

Isolated sphenchoanal polyp: report of three cases

Çeçen A¹, Kemal O², Atmaca S², Kavaz E²

¹Department of Otolaryngology, Samsun Education and Reserch Hospital

²Department of Otolaryngology, Ondokuz Mayıs University School of Medicine
Samsun, Turkey

Abstract

Background: Choanal polyps constitute 3-6 % of all nasal polyps and are lesions which usually originate from the mucosa of the maxillary sinus and have a solitary growth pattern. Polyps originating from the sphenoid sinus are rarely seen and are known as sphenchoanal polyps. Surgical treatment of the sphenchoanal polyps is its complete excision together with the pedicle and the portion inside the sphenoid sinus.

Cases report: We report the cases of three patients who were referred to the ENT outpatient department for a persistent unilateral nasal obstruction that was resistant to medical treatment. After their clinical and endoscopic examination and imaging evaluation, these patients underwent endoscopic excision of the sphenchoanal polyps which in histopathology were proven to be inflammatory polyps.

Conclusion: Although rarely seen sphenchoanal polyps must be kept in mind in the differential diagnosis of unilateral sphenoid sinus and posterior nasal cavity masses. HIPPOKRATIA 2017, 21(3): 150-153.

Keywords: Sphenchoanal polyp, nasal obstruction, nasal endoscopy, excision, computed tomography, magnetic resonance imaging

Corresponding author: Ozgur Kemal, Associate Professor, Department of Otolaryngology, Ondokuz Mayıs University School of Medicine, 19 Mayıs Üniversitesi Tıp Fakültesi Kulak Burun Boğaz ABD Atakum, Samsun, Turkey, tel: +905326843221 e-mail: drozgurkemal@gmail.com

Introduction

A choanal polyp is a benign solitary mass originating from the edematous and inflamed mucosa of the paranasal sinuses, passing through the sinus ostium, located within the nasal cavity and extending to the nasopharynx with a wide pedicle¹. According to the paranasal sinus of origin, those arising in the maxillary sinus are known as antrochoanal, those emerging from the sphenoid sinus as sphenchoanal, and those from the ethmoid sinus as ethmochoanal polyps^{2,3}. We present the cases of three patients who were diagnosed and treated for sphenchoanal polyp in our department.

Case Presentation

Case 1

A 43-year-old male patient who had undergone chemoradiotherapy two years previously for pulmonary malignancy presented with one-month complaint of a constant headache, so a cranial magnetic resonance imaging (MRI) was performed to exclude possible brain metastasis. A cystic mass lesion was identified in the left sphenoid sinus, measuring 29 x 28 mm and demonstrating peripheral contrast uptake. The lesion was extending to the nasopharynx with borders that could not be clearly distinguished from the left inferior nasal turbinate, showing heterogeneous contrast and sized 26 x 21 x 23 mm, and could not be differentiated safely from a malignancy

(Figure 1). In the nasal endoscopy, a smooth-surfaced mass was revealed filling the left nasal passage and preventing access to the nasopharynx. During the endoscopic examination under general anesthesia, performed for excisional biopsy, a sphenchoanal polyp was observed that had expanded the sphenoid sinus ostium and was filling the sphenoid sinus, extending to the nasal passage and nasopharynx with a wide pedicle from the ostium (Figure 2). The patient underwent endoscopic sinus surgery. Endoscopic sphenoidotomy was performed with enlargement of the ostium and removal of the anterior wall of the sphenoid sinus. The polyp was excised together with its pedicle and the part inside the sphenoid sinus.

Case 2

A 36-year-old male patient presented with a two-month history of nasal obstruction, was diagnosed with nasal polyposis and was given medical treatment but his complaints did not subside. On the paranasal sinus MRI, a soft tissue mass was found with dimensions 30 x 20 x 25 mm, extending from the sphenoid sinus to the posterior right nasal cavity as far as the nasopharynx (Figure 3). In the nasal endoscopic examination performed in the clinic, a polypoid mass was identified extending from the posterior right nasal passage to the nasopharynx and filling the nasopharynx. With an initial diagnosis of nasal polyposis, the patient underwent endoscopic sinus

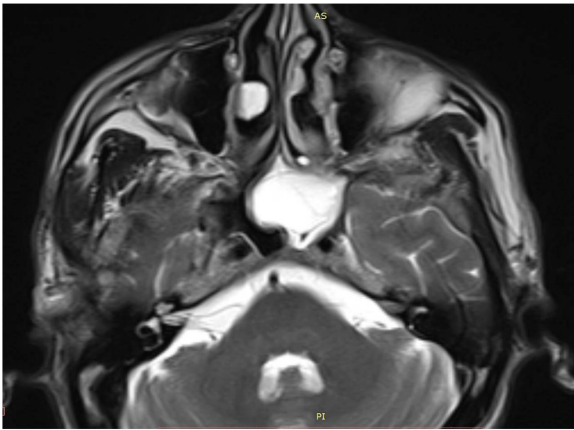


Figure 1: Preoperative axial magnetic resonance imaging showing a cystic mass in the left sphenoid sinus.



Figure 2: Intraoperative image demonstrating the enlarged sphenoid sinus ostium and the pedicle of the sphenochanal polyp which extends to the nasopharynx.

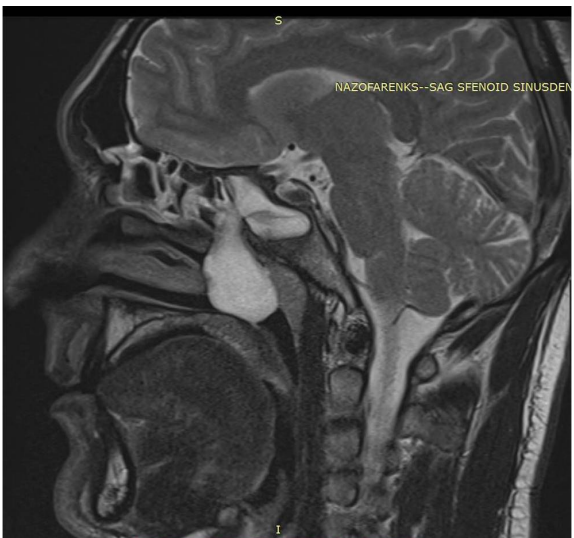


Figure 3: Preoperative sagittal magnetic resonance imaging showing a soft tissue mass extending from the right sphenoid sinus to the posterior nasal cavity and nasopharynx.

surgery under general anesthesia. The polyp was found to originate from the right sphenoid sinus, expanding the ostium and extending with a pedicle to the nasopharynx, and was completely excised with its pedicle by performing endoscopic sphenoidotomy for treatment of the disease (Figure 4).

Case 3

A 12-year-old patient presented at the clinic with complaints of nasal obstruction and inability to smell, which had not recovered despite two months of medical treatment. In the nasal endoscopic examination, shiny and smooth-surfaced polypoid tissue was observed, beginning from the mid concha level and extending posteriorly, filling almost completely the left nasal passage to the nasopharynx. On the paranasal sinus computed tomography (CT) scan, a homogenous soft tissue mass was shown which was almost filling the left sphenoid sinus cavity (Figure 5). Based on these findings, the patient was planned for endoscopic sinus surgery, and during the procedure, a polyp was seen which originated from the left sphenoid sinus and covered the choana entirely (Figure 6). Endoscopic sphenoidotomy was performed. The polyp was totally excised with its pedicle which was expanding the sphenoid sinus ostium together with the mucosa inside the sinus where the polyp originated.

All the patients were discharged the day after surgery. They are followed-up as routine endoscopic sinus surgery patients. All of them had a perfect recovery with no complications. The histopathology results of all three specimens reported inflammatory infiltration formed of fragmented leukocytes, lymphocytes, and plasma cells covered with pseudostratified epithelium and subepithelial edema. No recurrence was seen in any of the patients in a three years endoscopic follow-up period. Informed consent for reporting the cases was obtained from the patients and the parents of the pediatric patient.

Discussion

Choanal polyps are benign mucosal tumors, originating from the inflamed mucosa of the paranasal sinuses and protruding into the choana with a pedicle⁴. They constitute approximately 3-6 % of all nasal polyps. In contrast to other nasal polyps, they are solitary and contain less mucous gland and fewer eosinophils². An antrochoanal polyp is the most frequently reported while sphenochanal and ethmochoanal polyps are considered extremely rare⁵. Sphenochanal polyps are seen equally in both genders, and the majority are observed in adolescents and young adults². While choanal polyps are seen in adults at the rate of 4-6 % of all nasal polyps, this rate is as high as 33 % in children. Some clinicians have reported that small sphenochanal polyps show spontaneous regression and only polyps which significantly expand as a result of recurrent secondary infections, are symptomatic⁶.

As seen in the three reported cases, patients with a sphenochanal polyp usually present with complaints



Figure 4: Macroscopic operative image of the excised sphenochanoal polyp with its pedicle.

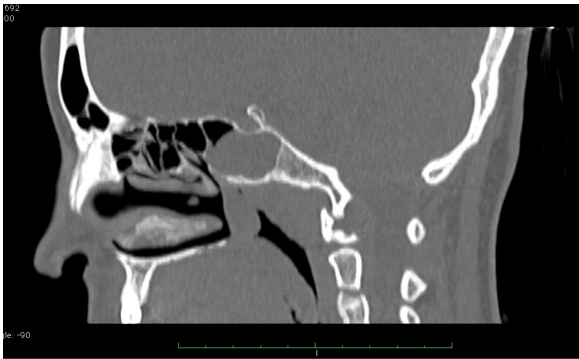


Figure 5: Coronal computed tomography scan showing a homogenous soft tissue mass almost filling the left sphenoid sinus cavity and extending in the posterior nasal cavity.

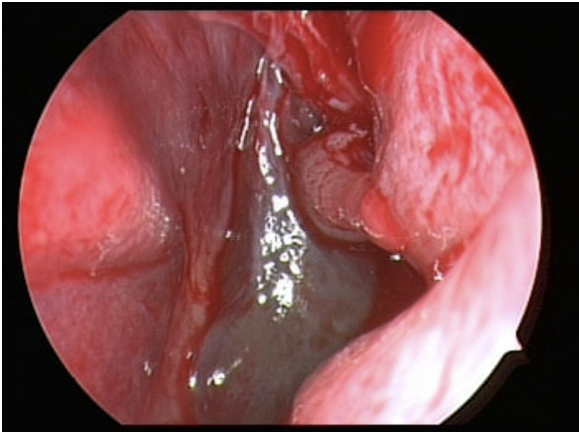


Figure 6: Intraoperative endoscopic view of the 12-year-old patient showing a sphenochanoal polyp originating from the left sphenoid sinus and obstructing the choana.

of nasal obstruction, nasal discharge, headache, snoring, nose bleeds, and ear fullness associated with eustachian tube obstruction⁷. In the endoscopic examination of the nose, a soft tissue mass is observed not permitting access from the nasal cavity to the nasopharynx. Usually the sinus from which the choanal polyp originates can be determined with a careful endoscopic examination. An antrochoanal polyp reaches the choana by progress-

ing between the middle nasal turbinate and the lateral nasal wall after emerging from the maxillary sinus ostium, while a sphenochanoal polyp reaches the choana by advancing between the septum in the sphenothmoid recess and the middle turbinate after emerging from the sphenoid sinus ostium^{2,8}.

The CT findings of the presence of a mass extending from the sphenoid sinus to the choana and nasopharynx, combined with normal ventilated ethmoid and maxillary sinuses, and expanded sphenoid sinus ostium suggest a sphenochanoal polyp. As the features of the mass regarding localization of the pedicle origin, invasion of the surrounding tissues, relation to the bone structures, mass size, and contrast dye enhancement can be adequately evaluated with CT; it is possible to make a firm preoperative diagnosis of the polyp. When the diagnosis is difficult, or another pathology is considered, an MRI can be requested as a supplementary imaging modality.

In isolated sphenoid sinus lesions, one should carefully examine the CT, especially when the mass has posterolateral and superolateral location, considering a carotid aneurysm, the proximity of the carotid artery to the optic nerve and the possibility of dehiscence and thus manipulations within the sinus must be applied carefully^{9,10}. The determination of the sinus from which the polyp originates with CT and MRI imaging avoids unnecessary and extensive surgical interventions^{1,5,7}.

In the differential diagnosis of choanal polyps, clinicians should consider adenoid hypertrophy, angiofibroma, Thornwaldt cyst, hypophysis tumor, lymphoma, inverted papilloma, inferior concha hypertrophy, glioma and nasopharynx cancer^{2,7}. MRI is a helpful assistive imaging modality in the differentiation of such mass from a malignancy. Performing a biopsy further facilitates making a definitive diagnosis in suspicious cases⁷. There are no studies in the literature showing the efficacy of medical treatment for sphenochanoal polyps like nasal or systemic steroids⁸. With endoscopic excision of these polyps, the polypoid part wrapped around the choana is totally removed together with its pedicle and the portion within the sphenoid sinus. When the polyp is not completely removed, the part left within the sphenoid sinus can cause recurrence^{1,3}. It is significant to perform large sphenoidotomy and remove the mucosa where the polyp originates in order to avoid recurrence. If possible, drilling the sphenoid bone in the site of origin can also be performed for better results.

In conclusion, although rarely seen, sphenochanoal polyps must be kept in mind in the differential diagnosis of unilateral sphenoid sinus masses and choanal polyps, and thus, unnecessary medical treatment and unrelated sinus surgery can be avoided.

Conflict of interest

The authors declare no conflict of interests. No financial support was received.

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