



Case Report

Sphenchoanal Polyp: Possible role of wide sphenoid ostium

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Choanal polyp is an isolated polyp that emerges from paranasal sinus and extends to the nasopharynx. It usually originates from the maxillary sinus, however in rare cases it could arise from other sinuses or even various nasal structures. Although its etiology remains unknown, it is a common finding in antrochoanal polyp to have a wide antrum ostium which has been suggested to play a possible role in the pathogenesis. The state of sphenoid sinus ostium in sphenochanal polyp hasn't been explored before. We herein report the case of a 14-year old boy with chronic rhinosinusitis who also had left sphenchoanal polyp with a wide sphenoid sinus ostium which successfully been managed through an endoscopic surgical approach.

Keywords: Choana, Polyp, Sphenoid, Ostium, Endoscope.

INTRODUCTION

Sphenchoanal polyp (SCP) is a benign solitary mass that originates from the sphenoid sinus and exits through the sphenoid ostium, passing across the sphenothmoidal recess to reach into the choana.⁽¹⁾

Because of the similarity in clinical presentation and commonly occurred at adolescent age group, whom detailed preoperative endoscopic examination is usually difficult, SCP may be mistaken for its more common counterpart – the antrochoanal polyp (ACP). In this paper, we present a patient with SCP, and discuss the clinical presentation, preoperative evaluation, etiology and surgical management of this relatively rare clinical condition.

CASE REPORT

A 14-year old male with persistent nasal obstruction was referred to us for evaluation. His obstruction was present for twenty month duration. Additional complaints include snoring and postnasal drip. He had tonsillectomy and adenoidectomy at age of 6 year, no other significant

positive medical history. Rigid nasal endoscopy, performed up to patient tolerance, showed congested nasal mucosa, bilateral inferior turbinate hypertrophy, no polyp or discharge could be seen in both middle meatus. The rest of the otorhinolaryngological examination was normal.

Axial, coronal and sagittal CT of the nose and paranasal sinuses demonstrated mucosal thickening in both ethmoid and maxillary sinuses, soft tissue opacity filling the left sphenoid sinus extending to the choana, (Figs. 1,2) and bilateral concha bullosa. A radioallergosorbent test was positive for grass, grain, tree and herb pollens. Other laboratory tests were within normal limits.

Patient was scheduled for endoscopic sinus surgery which was performed under general anesthesia. After nasal mucosa decongestion, endoscopic examination showed a glistening, smooth polyp nearly completely obstructed the left choana, passing across the sphenothmoid recess through a wide left sphenoid ostium (compared to the contralateral side) and attached superiorly to sphenoid sinus floor, (Figs. 3,4). The sphenoid ostium was

Sphenchoanal Polyp: Possible role of wide sphenoid ostium

measured by a small (2mm) suction tip and was around 5 mm wide.

The stalk of the polyp was grasped as proximal to ostium as possible and removed as one piece with the choanal part, then further widening of sphenoid ostium was done inferiorly and intrasinus compartment was separated from the mucosa and removed. Completer endoscopic sinus surgery was followed. The patient had uneventful postoperative recovery and discharged home at the next postoperative day. Histopathology of specimen showed inflammatory polyp with no evidence of metaplasia or malignancy.

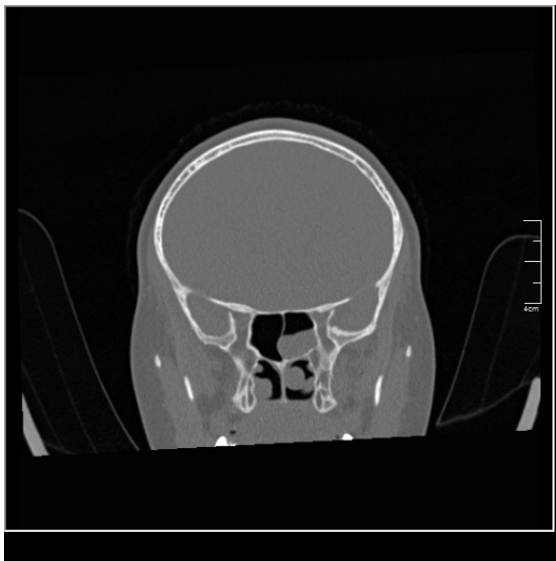


Fig 1. Coronal and Sagittal CT scan of paranasal sinus showed sphenchoanal polyp, filling the left sphenoid sinus and extending into posterior nares.

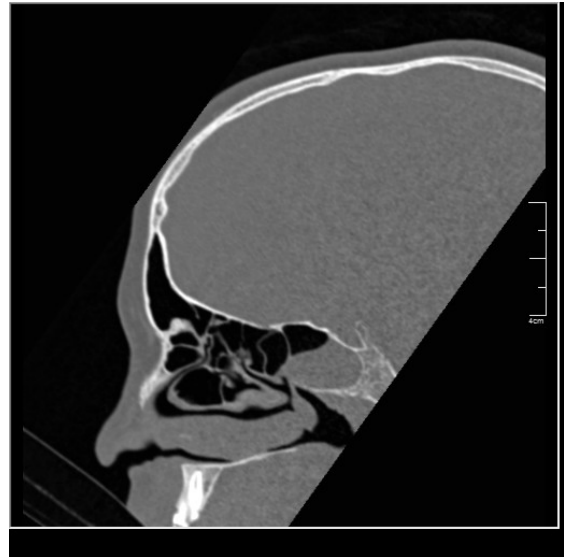


Fig 2. Coronal and Sagittal CT scan of paranasal sinus showed sphenchoanal polyp, filling the left sphenoid sinus and extending into posterior nares.

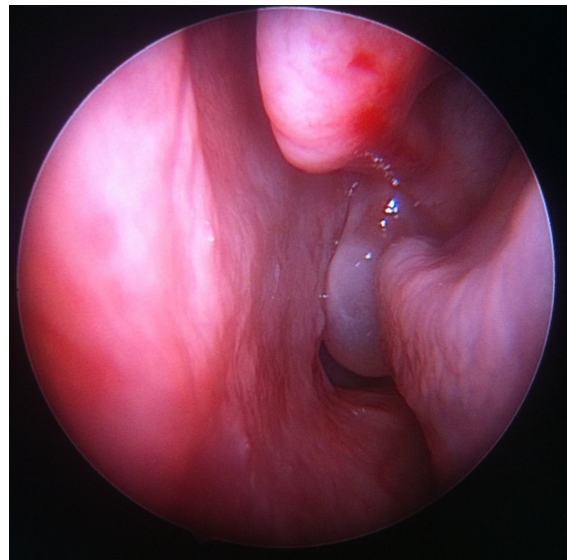


Fig 3. 4-mm 0 degree endoscopic view of choanal portion sphenchoanal polyp.



Fig 4. 4-mm 0 degree endoscopic view of large left sphenoid ostium.

DISCUSSION

Choanal polyp (CP) is a benign, relatively uncommon mucous growth that by definition protrudes through the choana and represents 3-6% of nasal polyps. It is classified based on the origin of its stalk into: antrochoanal and sphenochanal polyp.^(2,3)

Preoperative endoscopic evaluation can usually show the origin of CP. ACP exits through maxillary ostium passes laterally to the middle turbinate to reach the choana, whereas SCP emerges through the sphenoid ostium and passes through the sphenothmoidal recess medial to the middle turbinate into the choana leaving the middle meatus clear. CT examination and /or magnetic resonant images demonstrate the origin of CP and the involved sinus. It also rules out the possibility of any intracranial pathology. The differential diagnosis for CP includes hypertrophied adenoid, angiofibroma, thorwaldts cyst, inverted papilloma, nasopharyngeal tumor and lymphoma.⁽⁴⁻⁶⁾

SCP is seen mostly in adolescents and young adults without any predilection for sex. Nasal congestion, blockage, snoring and unilateral purulent discharge are the most common symptoms present.⁽⁶⁾

Although various theories have been proposed for CP etiology, its pathogenesis remains

Unclear.^(2,3,7,8) The most widely accepted theory is that it originates from a submucosal cyst secondary to thrombosis of lymphatic vessels caused by a post-infection

sinus inflammation. Al-Qudah proposed that because maxillary sinusitis is more common than sphenoid sinusitis, ACP is more commonly seen than SCP.⁽¹⁾

Based on a detailed study of 22 patients with ACP, Killian in 1906 suggested that ACP gained access to the nasal cavity through a wide antrum ostium which was measured 1.7-2 cm in diameter.⁽⁷⁾ Kelly found large accessory ostium in all his studied ACP patients.⁽⁹⁾ Similar findings were also reported in large series of different ethnicity by Chung et al,⁽⁴⁾ Aktas et al,⁽⁵⁾ Aydin et al,⁽⁶⁾ they all reported that ACP passes through larger than normal ostium, however it is still a matter of controversy whether the enlargement of the ostium is due to compression of the pedicle of the polyp or that the antral mucosa forms a prolaps into the nasal cavity and subsequent development into a polyp is due to anatomical variability of the ostium.

We found sphenoid ostium to be larger than normal in our patient. Unlike ACP, SCP had never been reported in large case series, the majority of reported SCP cases are single case reports, such conclusion may be early to apply in SCP.

Additionally sphenoid sinus had no accessory ostium and gravity could help polyp passage into choana. Given the fact that SCP is rare, cooperation between academic institutions in our region is in need to further explore this fact.

The association between CP and allergic disease is controversial and unclear. In a review of 33 cases, Cook et al reported that there was a significant association with allergic status. They also found a strong association between ACP and bronchial asthma.⁽²⁾ However, allergy rarely appears to be the cause in several other studies.⁽⁴⁻⁶⁾

Additionally, the low number of eosinophils, the high number of other inflammatory cells, the normal-appearing basement membrane, and intact and normal surface epithelium may reveal that the etiology of ACP might be chronic inflammatory processes rather than allergy.⁽⁶⁾

The advantage of endoscopic removal is obvious especially in pediatric cases where an external approach to gain access to benign sphenoid sinus is not advisable and destructive.

Endoscopic surgery allows for precise excision with minimal complications, better visualization, and leaves the healthy sphenoid mucosa intact maintaining the natural drainage pathway of sphenoid sinus.

CONCLUSION

SCP is a rare form of CP emerging from the sphenoid sinus through a wide ostium and extending into the choana causing sinusitis like symptoms. Adequate

Sphenchoanal Polyp: Possible role of wide sphenoid ostium

preoperative diagnosis can be reached through careful CT review. Endoscopic excision of SCP with its intrasinus part is a safe and effective approach.

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