Case Report

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Ear, Nose and Throat Section

A Case of Bilateral Antrochoanal Polyp: Breaking the Unilateral Norm

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ABSTRACT

Antrochoanal Polyps (ACPs) are benign lesions arising from the maxillary sinus mucosa, typically unilateral, with bilateral presentation being exceedingly rare. We present the case of a 53-year-old female with progressive bilateral nasal obstruction for three years and recent onset of right-sided facial pain. Endoscopic examination revealed large polypoidal masses originating from both middle meati, with the right-sided lesion extending into the choana. Imaging confirmed bilateral maxillary sinus opacification. The patient underwent successful endoscopic sinus surgery with bilateral uncinectomy and middle meatal antrostomy. Histopathology confirmed inflammatory polyps with side-specific differences- right-sided specimen showing eosinophilic infiltration and cholesterol clefts, and left-sided specimen exhibiting pigment-laden macrophages. Postoperative recovery was uneventful, with complete symptomatic relief. However, at the 12-month follow-up, bilateral recurrent ACPs were noted. This case adds to the limited reports of bilateral ACPs and highlights the importance of high clinical suspicion and tailored surgical management in such presentations.

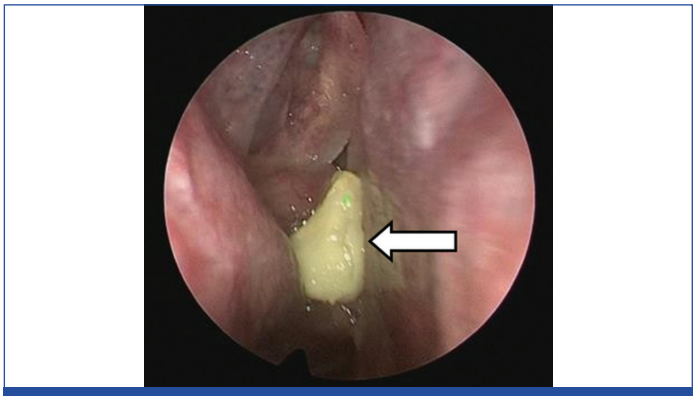
Keywords: Antrochoanal polyps, Bilateral nasal obstruction, Rare, Recurrent polyps

CASE REPORT

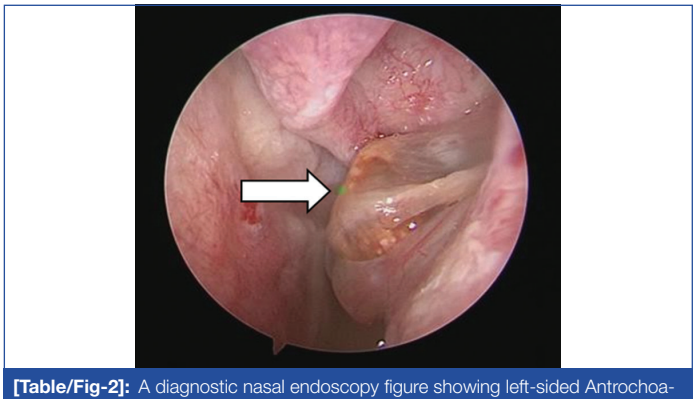
A 53-year-old female patient presented to the Ear, Nose and Throat (ENT) Outpatient Department (OPD) with a chief complaint of bilateral nasal obstruction (more severe on the right side) for three years and right-sided facial pain for 10 days. The nasal obstruction was insidious in onset and gradually progressive and aggravated during exposure to a cool climate. The patient also complained of intermittent post-nasal discharge and snoring, which were aggravated during episodes of upper respiratory tract infection for three years. The facial pain was sudden in onset, dull-aching and non-progressive. Facial pain was radiating to the right upper molars with no aggravating and relieving factors. The patient did not have any associated olfactory disturbances, recurrent bouts of sneezing or any complaints of nasal discharge. The past history and medical history were not significant. Examination on anterior rhinoscopy revealed a grade 3 polyp [1] in the right nasal cavity with a mildly deviated nasal septum to the left [Table/Fig-1]. This prompted us to perform diagnostic nasal endoscopy for further evaluation. The rest of the ear and throat examination was within normal limits. On diagnostic nasal endoscopy, a large whitish, glistening polyp was seen arising from the right middle meatus, extending into the choana, and a similar polyp of smaller size was also seen arising from the left middle meatus [Table/Fig-2].

Upon subjecting the patient to the Computed Tomography (CT) scan of the nose and paranasal sinuses, a large homogenous soft-tissue opacity was noted, filling the right maxillary sinus with widening of the ostium and extending into the nasal cavity, choana, and nasopharynx [Table/Fig-3]. A similar finding was noted on the left side involving the left maxillary sinus alone.

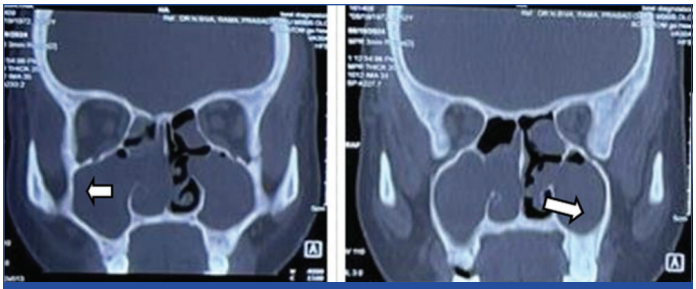
With adequate preoperative evaluation, the patient was posted for endoscopic sinus surgery under general anesthesia. Bilateral uncinectomy and wide middle meatal antrostomy joining the natural ostium and the accessory ostium was performed and the polyps were traced into the maxillary sinus for their attachment [Table/Fig-4,5]. A few bits of polyp were collected for Histopathological Examination (HPE) and the rest of the polyps were debrided with the help of a debrider, including their site of attachment. The bits sent for HPE revealed inflammatory polyps bilaterally, with the left specimen showing polypoidal tissue bits lined by pseudostratified ciliated columnar epithelium, with the sub-epithelium showing mixed inflammation with plenty of cholesterol clefts and pigment-laden macrophages [Table/Fig-6]. On the other hand, the contralateral right specimen showed the bits of polypoidal tissue lined with ciliated columnar epithelium with an edematous sub-epithelium with a mixed inflammatory cell collection comprising neutrophils, lymphocytes, a few plasma cells and eosinophils [Table/Fig-7]. None of the sides showed any evidence of a specific infection or malignancy.



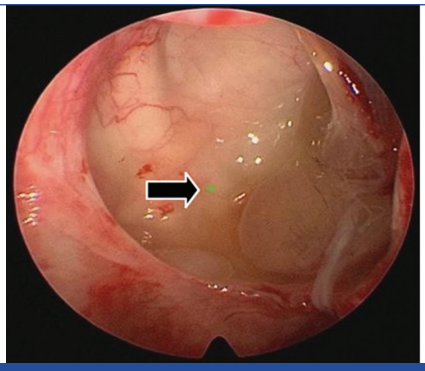
[Table/Fig-1]: A diagnostic nasal endoscopy figure showing right-sided Antrochoanal Polyp (ACP) covered with slough.



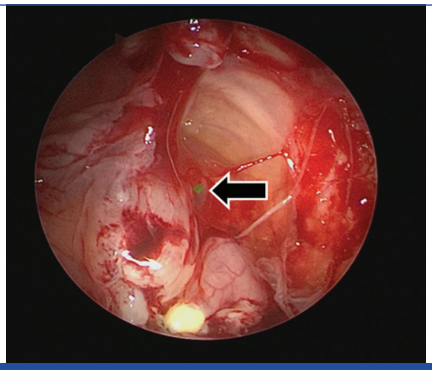
[Table/Fig-2]: A diagnostic nasal endoscopy figure showing left-sided Antrochoanal Polyp (ACP) in the left middle meatal area.



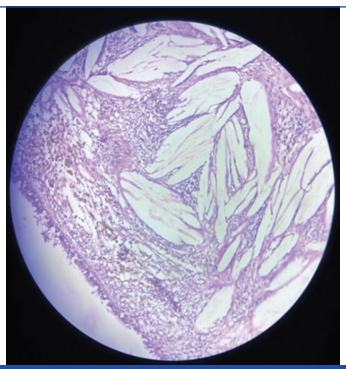
[Table/Fig-3]: A CT nose and paranasal sinus film showing soft-tissue density in bilateral maxillary sinuses.



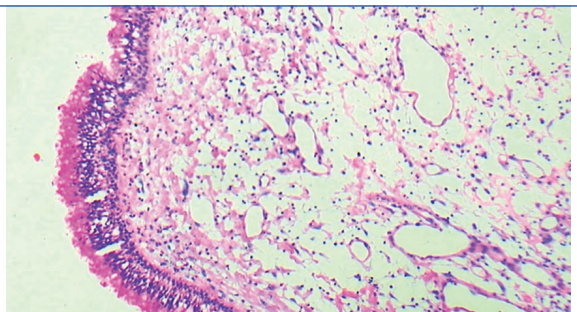
[Table/Fig-4]: Intraoperative Image showing left ACP attached to the anterolateral wall of the left maxillary sinus.



[Table/Fig-5]: Intraoperative image showing right ACP.

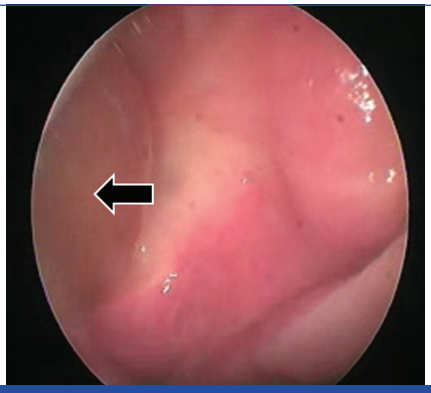


[Table/Fig-6]: A HPE slide from the left side showing polypoidal tissue interspersed with cholesterol crystals (H&E, 10x).

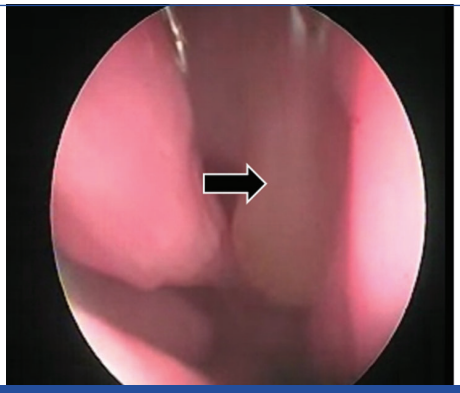


[Table/Fig-7]: A HPE from the right side showing polypoidal tissue lined by pseudostratified ciliated columnar epithelium showing pigment-laden macrophages in the sub-epithelium (H&E, 20x).

Following routine postoperative care, the patient was discharged after two days post-nasal pack removal. The patient was followed up postoperatively for a period of one year, at one month, three months, six months and at one year. The patient showed tremendous symptomatic improvement at the end of the first month, with the diagnostic nasal endoscopy showing normal mucosal healing in both maxillary sinuses. At the end of the third and sixth months, the symptomatic relief continued and both the maxillary sinuses appeared healthy without any evidence of any polypoidal changes. However, the patient at the 12th month of follow-up, though being asymptomatic, the diagnostic nasal endoscopy surprisingly revealed a recurrence in the polyps in both the maxillary sinuses, restricted within the confines of the right maxillary antrum on the right side [Table/Fig-8], and extending into the left middle meatal area on the left side [Table/Fig-9]. A revision surgery was offered for the same. The patient denied it as she was asymptomatic.



[Table/Fig-8]: Recurrent polyp in right maxillary antrum.



[Table/Fig-9]: Recurrent polyp noted in the left middle meatus.

DISCUSSION

The ACP is a specific entity among the whole polyposis [2]. An ACP is a benign lesion originating from the mucosa of the maxillary antrum, further protruding into the choana and the nasopharynx [2]. ACPs represent 4-6% of the total burden of nasal polyps in the general population [3], with a peak incidence of 33% in children [4-6]. Its bilateral origin is extremely rare. A literature review conducted by Iziki O et al., mentioned that only 11 cases of bilateral ACPs have been documented in the literature to date, of which, majority of the cases were noted in females, like in our case [7]. Many theories were mentioned in the literature for their extension into the nasal cavity and nasopharynx. Almarri FK et al., mentioned that in 70% of the cases, the accessory ostium acts as an exit pathway and that is why it grows inferiorly and posteriorly into the nasopharynx [4]. Likewise, Al-Qudah M mentioned that physical factors like nose blowing, sinus irrigation and sinus inflation could support its growth towards the nasal cavity [8]. Frosini P et al., and Sabino HA et al., in their studies, mentioned the pivotal role of the Bernoulli effect, causing its extension into the nasopharynx [2,9]. Another interesting observation noted from the existing literature, as well as this case report, is that both the ACPs are disproportional in sizes, with one being large enough to fill the nasal cavity and extend into

the nasopharynx, while on the other hand, the contralateral ACP is small and barely protrudes beyond the middle meatal confines. This can be due to the absence of significant pressure required to cause mucosal prolapse from the contralateral maxillary sinus [4,8]. A comparative analysis of the existing literature on bilateral cases of ACP has been tabulated below [Table/Fig-10] [3,4,6-15]. Despite initial surgical success, endoscopic recurrence was observed at 12 months, underscoring the need for long-term surveillance".

CONCLUSION(S)

Bilateral ACP is a rare entity and can often be masqueraded under the umbrella of an overwhelming list of differentials of bilateral nasal obstruction. Owing to the extreme rarity of this clinical entity, clinicians may usually miss the diagnosis. This entity should always be kept in mind while approaching towards diagnosing a case of bilateral nasal obstruction. Our case adds to the list of these rare and hidden treasures embedded in the literature.

S. No.	Author (Year)	Patient demographics	Symptoms at presentation	Type of intervention	Intra/post-op events	Histopathology	Recurrence status	Follow-up duration	Comments
1	Myatt HM and Cabrera M (1996) [3]	F, 12 y	Nasal blockage, nasal discharge	FESS	Uneventful	Inflammatory benign polyp	No recurrence	3 months	Short-term follow-up
2	Basu SK et al., (2001) [10]	F, 12 y	Nasal blockage, foreign body sensation in throat	Caldwell–Luc approach	Uneventful	Inflammatory benign polyp	Nil	6 months	Paediatric case operated with Caldwell–Luc operation
3	Yilmaz YF et al., (2007) [11]	F, 24 y	Nasal obstruction, discharge, foreign body sensation in throat	FESS	Uneventful	Inflammatory polyp	Absent	12 months	First adult case
4	Konstantinidis I et al., (2008) [12]	F, 49 y	Nasal blockage, rhinorrhea	FESS	Uneventful	Inflammatory benign polyp	Not seen	6 months	First case with middle-aged onset with past history of bilateral infraturbinal maxillary fenestration.
5	Al-Qudah M (2011) [8]	F, 11 y	Obstructive symptoms, mouth breathing, snoring	FESS	Uneventful	Inflammatory benign polyp	None	18 months	Second paediatriccase with good outcome
6	Sousa DW et al., (2011) [13]	M, 37 y	Nasal congestion	Caldwell–Luc surgery and FESS	Uneventful	Inflammatory benign polyp	Nil	6 months	Adult case operated with both Caldwell-Luc surgery and FESS
7	Ozdek A and Özel HE (2014) [14]	M, 27 y	Nasal blockage and rhinorrhoea	FESS	Uneventful	Not specified	None	35 months	Longest follow-up in review
8	Sabino HA et al., (2014) [9]	M, 48 y	Hyposmia, sleep disturbance, nasal symptoms	FESS	Uneventful	Inflammatory benign polyp	Nil	4 months	Only patient presented with sleep disturbance.
9	Oner F et al., (2015) [15]	M, 20 y	Headache, hyposmia, rhinorrhea	FESS	Uneventful	Inflammatory benign polyp	Absent	Not mentioned	Follow-up duration not reported
10	Aksakal C (2018) [6]	M, 11 y	Heaviness of face, nasal discharge	FESS	Uneventful	Inflammatory benign polyp	Nil	8 months	3rd pediatric case
11	Iziki O et al., (2019) [7]	F, 44 y	Headache, loss of sense of smell, nasal obstruction	FESS	Uneventful	Inflammatory benign polyp	Nil	12 months	Female in mid-life
12	Almarri FK et al., (2022) [4]	M, 44 y	Nasal obstruction, allergic rhinitis, snoring	Medical therapy	Not applicable	Inflammatory benign polyp	Not applicable	2–3 months	Only case treated non-surgically

[Table/Fig-10]: A comparative analysis of existing literature on bilateral Antrochoanal Polyps (ACP) [3,4,6-15].
FESS: Functional endoscopic sinus surgery; M: male; F: female

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