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 Otorhinolaryngology

ETHMOCHOANAL POLYP ARISING FROM AGGER NASI CELL – A RARE CLINICAL PRESENTATION
 KEY WORDS:

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ABSTRACT	<p>Introduction: Ethmochoanal polyps are uncommon and the most frequent types are ethmochoanal polyps arising from posterior ethmoidal cells. Here is a rare case of ethmochoanal polyp arising from the anterior ethmoidal cell. Clinical Case: A 42-year-old male patient presented with complaints of right-sided nasal block for three years, with a running nose, sneezing, and occasional headache. On anterior rhinoscopy examination, mild deviation of the septum to the right with bilateral inferior turbinate hypertrophy was noted. On diagnostic nasal endoscopic examination, a Greyish pale polyp arising from the right middle meatus extending to the right choana was noted, which can be probed all around, insensitive to touch, and does not bleed on touch. CT PNS showed a polyp seen anterior to the attachment of the middle turbinate, arising from the right anterior ethmoidal cell, seen extending to the right choana. Right OMC obstruction is seen. The right maxillary sinus was found to be free. Intraoperatively Polyp traced upward from the choana to the axilla of the middle turbinate and noted arising just anterior to the attachment of the middle turbinate. Uncinectomy was done followed by middle meatal antrostomy, polyp was traced superiorly and found to be arising from the anterior ethmoidal cell. Anterior ethmoidectomy was done and Polyp was noted arising from agger nasi cell. Conclusion: choanal polyps are single benign lesion that develops in the sinuses and spread to the choana via the sinus's natural ostium. Most commonly involved is the maxillary sinus. Here after correlating radiological and intraoperative findings an ethmochoanal polyp was noted arising from the anterior ethmoidal cells. Here, we provide our experience in diagnosing and successfully performing surgery on ethmochoanal polyps arising from anterior ethmoidal cells.</p>
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<p>INTRODUCTION</p> <p>Nasal polyps are edematous grape-like protrusions most often originating in the upper part of the nose around the osteomeatal complex on the lateral wall. The surface epithelium tends to be smooth and consists of pale translucent tissue which distinguishes them from the more vascular mucosa of the nasal cavity[1]. Polyps arise in the presence of inflammation that may be initiated by a number of factors, resulting in dysregulated interaction between the sinus epithelium and the lymphoid system. Histologically they consist of loose connective tissues, inflammatory cells, and fluids, and are usually covered by pseudostratified columnar, ciliated epithelium. Polyps form when oedematous connective tissue stroma ruptures and herniates through the basement membrane.</p> <p>Choanal polyps are conventionally divided into two groups, antrochoanal and sphenchoanal. In 1906, the initial report of a choanal polyp was made by Killian [2]. For many years since that time, choanal polyps have been considered to be a large solitary polyp originating from the mucosa of the maxillary sinus or from the posterior edge of the maxillary ostium and protruding in the backward direction to the choana and nasopharynx. It has been claimed that choanal polyps always grow through the accessory ostium of the maxillary sinus and extend into the posterior part of the nasal cavity because of peculiar anatomical conditions[3]. Later on, cases of choanal polyps originating from sphenoid sinus and sphenothmoidal recess and even from frontal sinus were reported.</p> <p>Ethmochoanal polyps are a rare but clinically important type of sinonasal polyp that originates from the ethmoid sinuses. These polyps typically extend into the posterior nasal cavity and can even reach the choana, creating symptoms such as nasal obstruction, postnasal drip, and, in some cases, even respiratory distress. Ethmochoanal polyps are rare and in that</p>	<p>too ethmochoanal polyps arising from posterior ethmoidal cells are common. Ethmochoanal polyps that arise specifically from the agger nasi cells pose unique diagnostic and therapeutic challenges, given their anatomic location and potential for recurrence. This article will discuss a rare presentation of ethmochoanal polyp arising from anterior ethmoidal cell successfully diagnosing and performing surgery.</p> <p>Case Report</p> <p>A 42-year-old male patient presented to ENT OPD with complaints of right-sided nasal obstruction for 3 years, difficulty in perception of smell for 1 year, and heaviness of face for the past 1 week. He also gives a history of frequent sneezing. Known case of T2DM. History of smoking and alcohol intake present.</p> <p>On nasal examination deviated nasal septum to right with bilateral inferior turbinate hypertrophy noted. On diagnostic nasal endoscopy high DNS to right with spur to left, greyish pale polyp was noted in the right nasal cavity arising from middle meatus, (Figure 1) does not bleed on touch, can be probed all around except lateral attachment, inferior to middle turbinate was pale. polyp was traced downwards to the choana and the nasopharynx was free (Figure 2).</p>
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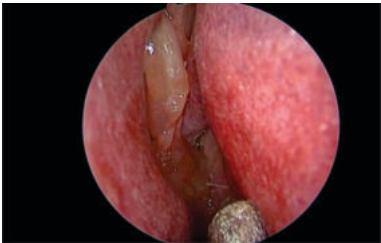


Figure 1 Polyp Seen Arising From The Middle Meatus

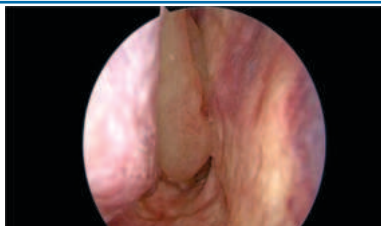


Figure 2 Polyp Seen Approaching Towards Choana

CT PNS showed a Polyp noted just anterior to the attachment of the middle turbinate arising from the right anterior ethmoidal cell seen extending to the right choana. Mucosal thickening was noted in the anterior group of sinuses. The osteomeatal complex was found to be patent. The patient was taken up for Functional Endoscopic Sinus Surgery under general anesthesia. Both nasal cavities were packed with a decongestant-soaked nasal pack and removed. The nasal cavity was visualised using 0 degree endoscope. A single polyp was noted emerging between the uncinate process and bulla ethmoidalis. uncinectomy and middle meatal antrostomy done. polyp was traced superiorly and found to be arising from agger nasi cells. Anterior ethmoidectomy was done and the polyp was sent for histopathological examination.



Figure 3 Showing The Involvement Of Agger Nasi Cell.

Histopathological examination section studies showed polypoid tissue lined by pseudo-stratified ciliated columnar epithelium. Underlying areas show edematous stroma infiltrated by mixed inflammatory infiltrates. Focal area showed myxoid changes. No evidence of atypia was seen. Features suggestive of inflammatory (allergic) sinonasal polyp



Figure 4 Debridement Of Polyp Superiorly

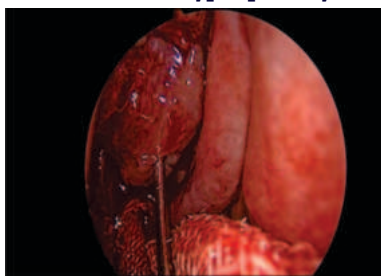


Figure 5 Anterior Ethmoids Open And Polyp Noted Arising From Agger Nasi Cell

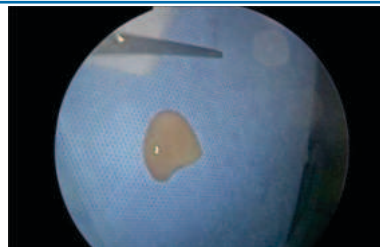


Figure 6 Polyp Sent For Histopathological Examination

Post-operatively patient was treated with IV antibiotics, analgesics, steroidal nasal sprays, and saline nasal irrigation. Post-operative DNE done. The patient is kept under regular follow-up. Regular follow-ups are often recommended to prevent recurrence.

DISCUSSION

A nasal polyp is a chronic inflammatory lesion that develops from the lining of the nasal sinus mucosa. The agger nasi cell, an anterior ethmoidal air cell located anterior to the attachment of the middle turbinate, plays a crucial role in the drainage of the frontal sinus. Pathologies in this area can lead to significant sinonasal issues. Lopatin et al. [4] defined three major types of Choanal polyps: antrochoanal, sphenochoanal, and ethmochoanal. A case report by Nihon Bika Gakkai Kaishi et al showed choanal polyps arising from posterior ethmoidal cells and in all these cases polyps were approaching the choana through the superior nasal meatus.

Moreover, several studies have reported that ethmochoanal polyps are rare. Kizil et al. [5] found that only 1% of 98 participants had choanal polyps originating from the ethmoid sinus. In a study by Aydin et al. [6] that included 53 patients, only one choanal polyp had an ethmoid origin. Andrey Lopatin et al. (4) reported that out of 20 cases studied 5 cases had maxillary sinus origin, 3 cases had sphenoid sinus origin, 4 cases had posterior ethmoid origin, 1 from anterior ethmoid, and one from head of the middle turbinate. Hong et al. (7) reported three cases of ethmochoanal polyps in South Korea. In a study conducted by David Virós Porcuna et al (8) choanal polyps originated in the maxillary sinus in 46 cases, in the ethmoidal sinus of 5 patients, and only 1 in the sphenoid sinus. Antrochoanal and ethmoidochoanal polyps were simultaneously found in 1 patient. Peter et al (9) reported a case of choanal polyp that actually originated from the mucosa of the superior turbinate which was mimicking an antrochoanal polyp.

The difference between an antrochoanal polyp (ACP) and ethmoid polyps lies in their origin, characteristics, and clinical presentation. Antrochoanal polyps arise from the maxillary sinus, which extends from the maxillary sinus through the ostium into the nasal cavity and choana, they are almost always unilateral more commonly in children and young adults. Ethmoidal polyps arise from ethmoid sinuses, and tend to remain within the nasal cavity, typically bilateral most common in adults, especially with chronic rhinosinusitis or allergic rhinitis. Nasal polyps are usually multiple and bilateral. According to Stammberger, (10) they usually originate much more frequently in fissures and narrow spaces of the ethmoid than from ethmoidal cells themselves.

Typically, polyps originating from ethmoid sinuses are multiple masses. In our case, a single nasal polyp was observed completely occupying the left nasal cavity, which was initially misdiagnosed as antrochoanal polyp. In our case, CT and endoscopic findings didn't help to determine the exact location of the site of the polyp, after doing uncinectomy with middle meatal antrostomy, anterior ethmoidectomy, and proceeding further only we could identify the exact location of the polyp.

In this case single polyp was seen extending to choana, and

the origin of the polyp could not be exactly identified. Uncinectomy and middle meatal antrostomy were done and the maxillary sinus was found to be free, so we proceeded with anterior ethmoidectomy and the polyp was noted to be arising from anterior ethmoid cell exactly from the agger nasi cell which was extending to choana as a single mass. Clinically patient was diagnosed as antrochoanal polyp because of the finding of a single polyp extending to the nasal cavity to choana but the usual clinical history associated with antrochoanal polyps like repeated upper airway infection was absent on the contrary patient had history of allergic symptoms which was in supportive of ethmoidal polyps. Clinically this case was misdiagnosed at first as antrochoanal polyp but later after correlating the endoscopic, imaging, and intraoperative findings, only exact diagnosis was made. postoperatively patient was followed up for one year without any recurrence and found to be symptomatically better.

CONCLUSION

Ethmochoanal polyp arising from agger nasi cell is a rare clinical entity. In most cases, endoscopic examination and radiological imaging provide an accurate diagnosis. However, in this instance, the exact diagnosis could only be determined during surgery, necessitating an intraoperative adjustment of the surgical approach. Maintaining knowledge of this uncommon clinical manifestation can help surgeons diagnose patients accurately and treat them effectively.

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