



## Antrochoanal Polyp of Maxillary Sinus in Adult – A Case Report

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### Abstract

*Antrochoanal polyp also called Killian Polyp is an inflammatory polyp, which arises from within the maxillary sinus, and prolapses in to the nasal cavity through the accessory ostium of the maxillary sinus. This polyp grows backwards towards the posterior choana. It is a unilateral benign lesion common in children and rare among adults.*

*Antrochoanal polyps are diagnosed clinically with diagnostic nasal endoscopy and CT scan of paranasal sinus helps in analyzing the extent of lesion and in ruling out other differential diagnosis of a unilateral nasal mass. The gold standard modality of treatment is functional endoscopic sinus surgery with complete removal of the polyp by dissecting out all the attachments of the polyp from within the maxillary sinus and widening of the obstructed ostium. The typical histological features are characterized by presence of cystic component, infiltration of inflammatory cells and edema. The choanal portion shows presence of fibrosis and squamous metaplasia. This is a case report of an adult patient with antrochoanal polyp.*

**Keywords:** Antrochoanal polyp, Unilateral, Adult.

### Introduction

In 1906 professor Gustav Killian was the first to describe antrochoanal polyp as a pear shaped mass involving maxillary sinus, nose and nasopharynx<sup>1</sup>. Antrochoanal polyp is more common in the pediatric population as compared to adults<sup>2</sup>. In the adults it is more common in males.

Antrochoanal polyp is a benign polypoidal mass which originates from the mucosa of maxillary

sinus, the cystic stalk of the polyp grows towards the nasal cavity through the accessory ostium of maxillary sinus and progresses posteriorly into the nasopharynx. The presence of accessory ostium in the medial wall of the maxillary sinus was established by Kelly<sup>3</sup>. In this paper we report a case of unilateral antrochoanal polyp in an adult female.

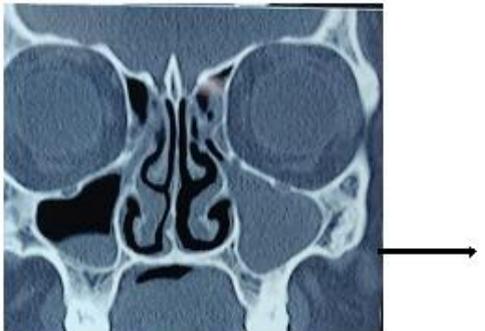
**Case Report**

A 42-year-old female presented to the otorhinolaryngology clinic with complaints of nose block which was unilateral, progressive associated with snoring, foreign body sensation in the throat. Thorough ENT examination revealed a smooth glistening polypoidal mass filling the left nasal cavity. Diagnostic nasal endoscopy showed a polypoidal mass arising from the left middle meatus completely filling left side nasal cavity and extending posteriorly to the nasopharynx. A clinical diagnosis of unilateral Antrochoanal polyp was made.

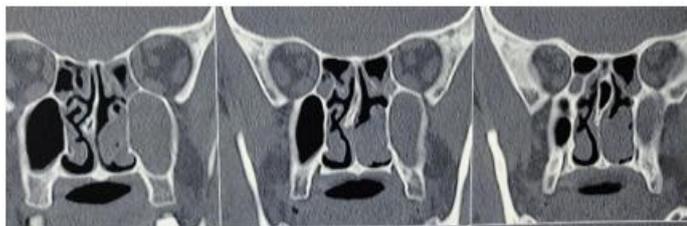


**Fig 1-** Diagnostic Nasal Endoscopy showing polypoidal mass in left nasal cavity.

CT scan of paranasal sinus was suggestive of soft tissue mass coming out of the accessory ostium into the left nasal cavity and extending posteriorly to nasopharynx. The right maxillary sinus showed presence of a mucous retention cyst.

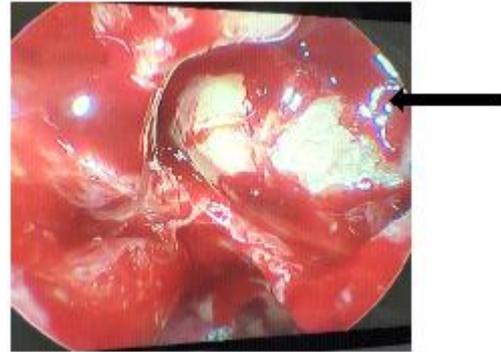


**Fig 2 –**Mucus retention cyst in right maxillary sinus, complete haziness of left maxillary sinus.



**Fig 3 –** Polypoidal lesion in left maxillary sinus extending into left nasal cavity and posterior choana.

The patient was managed surgically with functional endoscopic sinus surgery, first an uncinctomy was done and a wide middle meatal antrostomy was done by joining the natural and accessory ostium. The polyp was removed enblock and the polypoidal attachment to the anterolateral wall with in the maxillary antrum was completely dissected.

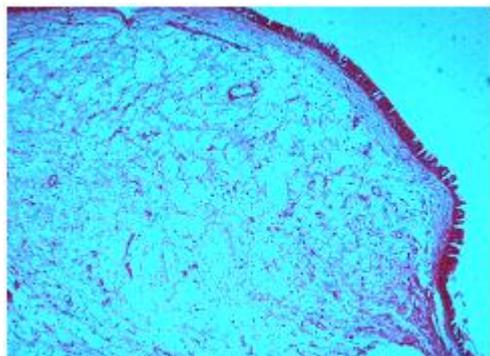


**Fig 4 –** Endoscopic picture of maxillary sinus after polyp resection.

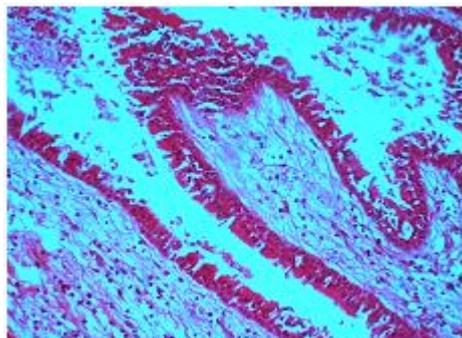


**Fig 5 -** Resected antrochoanal polyp with antral, stalk and choanal portion.

Postoperative histopathology was suggestive of benign inflammatory polyp- antrochoanal region. The antral component of the polyp had a cyst lined by flattened epithelium focally filled with mucoidal material, the rest showed polypoidal lesion lined by respiratory epithelium with presence of edema and mixed inflammatory cells composed of eosinophils, plasma cells, lymphocytes and few neutrophils. The patient is on regular follow up and there is no evidence of recurrence of lesion on routine endoscopy.



**Fig 6-** Cystic antral portion lined by flattened epithelium filled with mucoid material.



**Fig 7-** Polypoidal lesion lined by respiratory epithelium

### Discussion

Antrochoanal polyps are usually unilateral and more common in children, an incidence of 35% has been reported by N Choudhury et al<sup>4</sup>. This is a case report of an adult female with unilateral antrochoanal polyp.

The common symptoms of antrochoanal polyp are unilateral nose block, nasal discharge but Ole Lengine et al 1993 have reported unusual symptoms like polyp strangulation<sup>5</sup> and spontaneous amputation of polyp, dysphagia due to mass occupying oropharynx. Other symptoms like epistaxis, purulent nasal discharge and speech disturbance has also been reported<sup>6</sup>. Our patient complained of significant nose block on the left side which progressed to bilateral nose block and foreign body sensation in the throat.

The antrochoanal polyp was found to grow out of the maxillary sinus through the accessory ostium as reported by Stammberger and Hawke.<sup>7</sup>

Antrochoanal polyp is more commonly seen in pediatric age group as compared to adults Chen et al reported an incidence of 28%<sup>8</sup>, this is fairly

less common in the adult population and among adults it is more common among males. This is usually unilateral but few cases of bilateral antrochoanal polyp has been reported. The most common etiology of antrochoanal polyp is chronic sinusitis<sup>9</sup>. Antrochoanal polyp is classically pear shaped and has a cystic component in the antral portion.

It comprises 4 to 6 % of all sinonasal polyps<sup>10</sup>. The diagnosis of antrochoanal polyp can be confirmed by diagnostic nasal endoscopy and CT Scan of the paranasal sinus. The differential diagnosis of unilateral nasal mass that can be considered are inverted papilloma, hemangioma, hypertrophied turbinate and fungal ball.

The polyp is lined by respiratory epithelium. As per Berg et al the antrochoanal polyp is similar to maxillary sinus cyst, the fluid content with in both turn to gel at room temperature and histologically both are similar<sup>11</sup>.

The histopathological characteristics of antrochoanal polyp is that it consists of a cystic part which fills up the maxillary sinus antrum, and the part which comes out to the nasal cavity and goes towards the choana is the solid component.

### Diagnosis

The common tools used for diagnosing antrochoanal polyp are diagnostic nasal endoscopy<sup>12</sup>, Diagnostic nasal endoscopy will usually show presence of a smooth polypoidal mass in nasal cavity, the stalk occupying the middle meatus with its origin in the maxillary sinus and coming out in to the nasal cavity through the accessory ostium. Antrochoanal polyps usually grows backwards and occupies the posterior choana and nasopharynx. CT Scan of PNS will show evidence of a homogenously enhancing lesion arising from maxillary sinus and occupying middle meatus, nasal cavity extending posteriorly towards posterior choana and nasopharynx. MRI will show T2 enhanced signals, and intrasinus cystic component will show peripheral enhancement.

The CT findings have been classified by Seung Kyu Chung et al into three stages. Stage I is antrochoanal polyp not extending into the nasopharynx, Stage II is complete occlusion of the accessory ostium and stage III is partial occlusion of the accessory ostium. As per this staging our case had a stage II antrochoanal polyp with polyp extending into the nasopharynx and complete occlusion of the accessory ostium<sup>13</sup>.

During clinical evaluation associated disease of maxillary sinus has to be ruled out, DH Lee et al reported accompanying diseases of maxillary sinus like fungal ball, sinusitis and inverted papilloma<sup>14</sup>. This reported case had an associated retention cyst in the opposite maxillary sinus.

The gold standard surgical modality of treatment is functional endoscopic sinus surgery.<sup>15</sup> several techniques have been described in literature like Caldwell luc approach to the maxillary antrum<sup>16</sup>. But the disadvantage of Caldwell luc operation is disruption of growth centres of maxilla. Our patient was managed with functional endoscopic sinus surgery, a wide middle meatal antrostomy was done by joining the accessory ostium and the natural ostium, the antral part of the polyp was dissected from within the maxillary sinus, and the entire polyp was removed in toto. Joining the natural ostium with accessory ostium helps in preventing post-surgical recirculation phenomenon which can occur between the natural maxillary sinus ostium and the surgically created ostium<sup>17</sup>.

In some cases of antrochoanal polyp with attachment to anterior wall of maxillary sinus, combined endoscopic and transcanine approach is used. The advantage of functional endoscopic sinus surgery is less complication and lower recurrence rate.

The cause for formation of antrochoanal polyp is obstruction of mucous glands due to chronic phlogosis<sup>1</sup>. Inciting features like chronic inflammation of sinus mucosa, allergic rhinitis will make the antral cyst to grow towards the nasal cavity via the accessory ostium<sup>12</sup>. Our patient was on 1 year follow up and there was no

evidence of recurrence. Francis et al have suggested 2 year follow up to detect recurrence<sup>1</sup>.

### Conclusion

Antrochoanal polyp is a unilateral benign lesion arising from antrum of maxillary sinus, more common in pediatric population. This is a case report of a unilateral antrochoanal polyp in an adult female, where there were no identifiable etiological factors. The polyp was managed surgically with functional endoscopic sinus surgery. Endoscopically complete excision of the polyp was done after creating a wide surgical ostium by joining the natural and accessory ostium, postoperative histopathology was suggestive of an inflammatory polyp. The patient is on regular follow up with no recurrence.

### Conflict of Interest

There are no conflicts of interest to declare by any of the authors of this study.

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