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Case Report

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Actinomycosis of antrochoanal polyp: a rare entity

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ABSTRACT

Antrochoanal polyp is a benign lesion, originating from the mucosa of the maxillary sinus, grow into maxillary sinus, nasal cavity and posteriorly to involve the choana. Nasal obstruction and nasal discharge are their main symptoms. Epistaxis is rare as seen in infected cases. Clinical assessment along with radiology helps in the diagnosis of antrochoanal polyp. We hereby describe a case of infected antrochoanal polyp in a 20-year-old female who presented with unilateral nasal obstruction, nasal discharge and intermittent epistaxis. Complete excision was done through endoscopic approach. On histopathology it showed secondary infection caused by actinomycosis which is extremely rare finding. This might be the first case report of actinomycosis infection in antrochoanal polyp as it was not found previously in any antrochoanal polyp case. Patient was followed till 6 month without any symptom.

Keywords: Antrochoanal polyp, Maxillary sinus, Epistaxis, Nasal endoscopy, CT scan, Actinomycosis

INTRODUCTION

Antro- choanal polyp originate mostly from the maxillary antrum and, rarely, from the sphenoid sinus. Inflammatory nasal polyps are mostly bilateral and they originate usually from anterior or posterior ethmoidal cells and less commonly, from maxillary sinus mucosa. Killian was the first to describe this disease in detail in 1906.[1] Stammberger found that antrochoanal polyps left the sinus through an accessory ostium in 70% of the cases.[3] Clinically patient present with nasal obstruction, although there are reports of cases presenting with epistaxis, purulent discharge, dyspnoea and dysphagia, obstructive sleep apnoea and hyponasal voice.[2] Antrochoanal polyps are the most common type of choanal polyps. Other sites of origin may be the sphenoid, ethmoid, (rarely) septum, and inferior turbinate.[4,5] These polyps represent 4–6% of all nasal polyps. In children the number can rise up to 33%.[6,7] They are often unilateral but may be bilateral on rare occasions.[8] large antrochoanal polyp can come out of nasal cavity and get exposed to external environment leading to secondary infection. Secondary infection can be caused by multiple organisms which is responsible for intermittent bleeding from the polyp. In our case the infective agent was actinomycosis which is extremely rare finding. This can be the first case of antrochoanal polyp which got infected by actinomycosis.

CASE REPORT

A 20-year-old female presented to ENT OPD with a 3 month history of right-sided nasal obstruction and nasal discharge with intermittent episodes of nasal bleed. It was also associated with postnasal discharge. She also had hyponasal voice since 1 month which was interfering with her speech clarity, in turn leading to low confidence and depression due to altered speech mainly during the conversations in college. She was also having headache on and off and snoring. On nasal examination, a bulge was seen involving middle third of dorsum of nose mainly on right side. Nasal cavity examination showed a reddish black polypoidal mass seen protruding from right side nasal cavity (Figure 1). Nasal Septum was pushed to

left side by the mass. Oropharynx examination revealed a polypoid mass hanging from the nasopharynx filling it completely and coming in oropharynx mainly on right side but also involving more than half of oropharynx. The mass found pushing the soft palate downwards and forwards (Figure 2).

Figure 1: Blackish red nasal mass filling right nasal cavity.

Figure 2: Bulge in oropharynx pushing the soft palate downwards and forwards.

Figure 3: Coronal non contrast computed tomography (CT) images of nose and paranasal sinus demonstrated homogenous density mass which was filling right side maxillary sinus and extending in nasal cavity, posteriorly involving the choana and whole of the nasopahrynx. CT scan also showed deviation of septum to left side due to mass effect and haziness in left sided maxillary and ethmoid sinuses.

Figure 4: Excised AC polyp of size about 10x4cm.

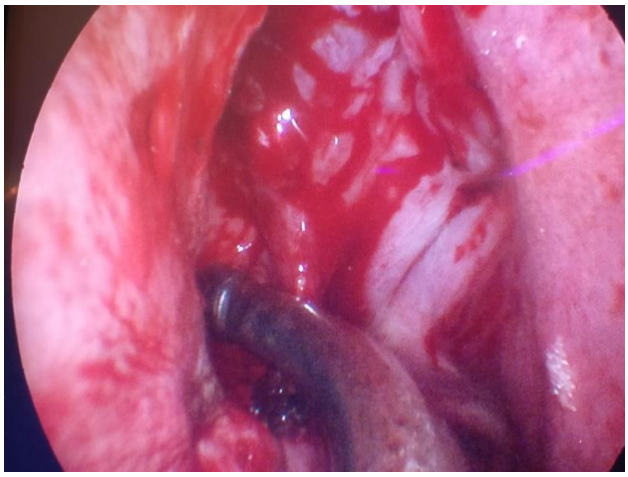

Figure 5: Disease free maxillary sinus.

Coronal and axial non contrast computed tomography (CT) images of nose and paranasal sinus demonstrated homogenous density mass which was filling right side maxillary sinus and extending in nasal cavity, posteriorly involving the choana and whole of the nasopharynx and anteriorly it was coming out of nasal cavity. CT scan also showed deviation of septum to left side due to mass effect and haziness in left sided maxillary and ethmoid sinuses (Figure 3).

The patient was taken to the operating theatre after complete pre anaesthetic work up and detailed written and informed consent under general anaesthesia for endoscopic sinus surgery. First pass Endoscopy on left side showed deviation of septum to left side because of mass effect and posterior end of polyp filling whole of the nasopharynx. Decongestant nasal packs kept in right nasal cavity which was passing mainly on medial surface of mass also suggesting origin from lateral wall of nose. The infected nasal mass was pushed slowly slowly in posterior part of nasal cavity with the help of nasal packs. Once the mass was pushed in posterior part of nasal cavity then uncinectomy was done and maxillary sinus ostia widened adequately. The stalk of origin was found filling in maxillary sinus which was cut along with extirpation of sinus mucosa to avoid recurrence. Whole large polyp was delivered in toto through oral cavity by pushing it posteriorly in nasopharynx and specimen was sent for histopathogical examination. The excised mass was about 10 cm x 4 cm (Figure 4). Re endoscopy of maxillary sinus was done with the help of 70 degree endoscope to confirm any remnant of polyp, which was satisfactory (Figure 5). Merocel pack was kept in right nostril for 48 hrs and removed after that and patient was discharged. The hyponasal quality of voice disappeared completely after excision of polyp and patient was elated on getting her normal voice back.

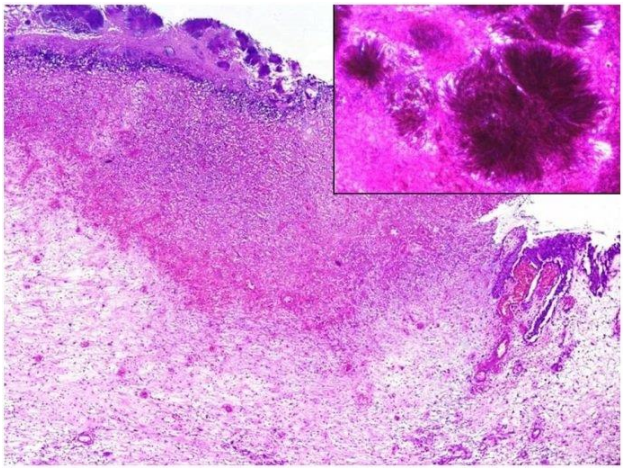

Figure 6: Histopathologic section showing the polyp lined by ulcerated mucosa covered with necrotic slough and actinomycetes with underlying submucosal mild inflammation and edema. Focally intact mucosal epithelium is also seen (H&E, x40). Inset shows actinomycetes well highlighted on Gram staining (Gram stain, x400).

Histopathology was suggestive of inflammatory polyp but along with the surprising infective pathology of actinomycotic colonies (Figure 6). On follow up, nasal obstruction was relieved and voice was normal, examination revealed a healed nasal cavity and oropharynx examination was within normal limit (Figure 7).

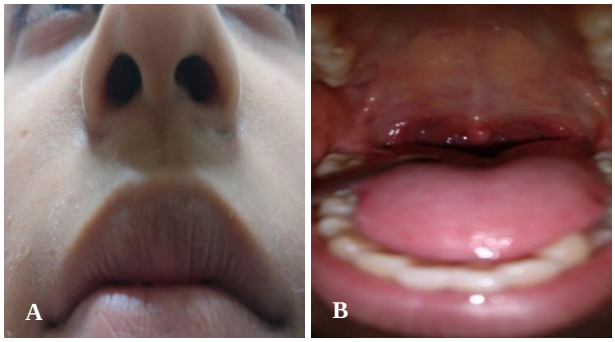

Figure 7 (A and B): 1st follow up- normal nasal cavity and oropharynx.

DISCUSSION

Antrochoanal polyps represent 4-6% of all nasal polyps.[9] The antrochoanal polyp is usually composed of an cystic antral part filling the maxillary sinus and a solid part coming out through the natural or accessory maxillary ostium into the middle meatus (nasal part) and hence to the choana (choanal part). Some authors suggest that antrochoanal polyps may actually represent expanding cysts that eventually protrude into the nasal cavity.[9] The more common manifestation is unilateral nasal obstruction (especially during the expiratory phase), but may sometimes be (20-25% of cases) bilateral, depending upon the blockage of the nasopharynx.[10] Other clinical manifestations are rhinorrhoea, bleeding, snoring, foreign body sensation, halitosis, headache, post nasal drip and loss of sense of smell. In our patient the complaints included bleeding from nose and hyponasal voice that too in a short duration of 3 months. The rapid increase in size of polyp might be due to hormonal changes in this patient. Nasal endoscopy and computed tomography (CT) represent the golden standard in the diagnosis of antro choanal polyp. During anterior rhinoscopy or nasal endoscopy, polyp appears as a bright, white, mass in the middle meatus and nasal cavity, with a stalk rising to the accessory ostium and sometimes, during the examination of the oral cavity, as a mass behind the uvula. But in our patient it was dark brown to black red in colour with multiple bleeding points which was due to secondary infection. By using CT, the diagnosis of antrochoanal polyp can be made when a mass fills the maxillary sinus growing through the accessory or natural ostium into the middle meatus and the posterior choana.[2] Differential diagnosis includes mucocele, mucopyocele, inverting papilloma, allergic fungal sinusitis, or sinonasal polyps.[11,12]

Surgery is the only feasible treatment. Several surgical techniques have been described in the literature. In the past, the Caldwell-Luc technique was used. The Caldwell-Luc approach offers good exposure and ensures complete removal of the polyp and the associated antral mucosa which is necessary to prevent recurrences.[13] Functional endoscopic sinus surgery (FESS) is, currently, the gold standard technique.[14] The use of a microdebrider

may be indicated, as complementary to endoscopic surgery.[15] The polyps usually arise from the posterior, inferior, lateral or medial walls of the maxillary antrum and only in rare cases from the anterior wall.[16] Early diagnosis and treatment of antrochoanal polyp is important as secondary rhinosinusitis can complicate the disease and surgery is more difficult.[17] Microscopically, they are similar to a maxillary cyst of the mucosa. Histological examination of antrochoanal polyps reveals lack of basement membrane thickening; stroma is less oedematous and more fibrotic than inflammatory polyps and large vascular spaces may be present.[18] In our case there were foci of ulceration and necrotic slough, congested blood vessels and plump endothelial cells. As a surprise, actinomycotic colonies were noted, a rare finding, not mentioned anywhere in the literature of antrochoanal polyp.

CONCLUSION

Though benign, early detection and prompt surgical management of antrochoanal polyp should be considered to prevent physical as well as psychological morbidity. Antrochoanal polyp can expand very fast within short time period, provisional explanation might be due to hormonal changes but it requires more studies. Large antrochoanal polyp which is coming out of nasal cavity and getting exposed to environment, can get infected. In our case, it was actinomycosis, making it a rare entity. Complete removal of antrochoanal polyp with endoscopic approach is an extremely safe and effective procedure with very less recurrence rate.

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