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Inflammatory Fronto Nasal Polyps.

Sumitha R*, and R Hari Prasad.

Department of ENT, Sree Balaji Medical College, No:7, Works Road, Chromepet, Chennai-44, Tamil Nadu, India.

ABSTRACT

Nasal polyps are fleshy swellings, or polypoidal masses that develop in the lining of the nose and paranasal sinuses (air-filled spaces, communicating with the nasal cavity, within the bones of the skull and face). They are non-cancerous growths. Polyps vary in size; they may be yellowish brown or pink and are shaped like teardrops. As they grow they eventually look like grapes on a stem. Nasal polyps are commonly due to allergy and are bilateral. Unilateral Polyps are not common. In this study we are presenting three such cases of unilateral nasal polyp who came to our ENT department during the period May 2012 to November 2013 involving only the frontal sinus and extending to the nasal cavity which were inflammatory in origin with no evidence of allergy.

Keywords: Polyps, non-cancerous, unilateral

Corresponding author

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INTRODUCTION

Nasal polyps are the result of swelling (inflammation) in the nose or sinuses - they are not a disease. Chronic inflammation causes an accumulation of fluid in the cells of the nose and sinuses. Eventually, gravity pulls these heavy cells down, resulting in polyps. The possible triggers are bacterial or viral infection, an allergy, or an immune response to a fungus. Nasal polyps appear most frequently near the openings to the sinuses (in the nasal passage) however, they can develop anywhere throughout the nasal passages or sinuses. It's not clear why some people develop chronic inflammation or why ongoing inflammation triggers polyp formation in some people and not in others .There's some evidence that people who develop polyps have a different immune system response and different chemical markers in their mucous membranes than do those who don't develop polyps. Any condition that triggers chronic inflammation in the nasal passages or sinuses, such as infections or allergies, may increase your risk of developing nasal polyps

CASE REPORT

Case 1

45 year old man presented to our department with c/o unilateral nose block left side and left sided frontal headache for 6 months. Patient gave h/o recurrent upper respiratory tract infections. There were no other constitutional or allergic symptoms. On examination left nasal cavity was filled with single, pale, grayish polyp. On probing we were able to probe all around the mass and was not tender and not bleeding on touch. Other nasal cavity was normal. Postnasal examination revealed that the choanae was free both sides. CT scan revealed complete opacification of left frontal sinus and (L) nasal cavity with evidence of secondary sinusitis in left maxillary antrum[FIGURE 1]. Choanae was free. Patient was put on anti histamines and oral steroids for 15 days with no improvement. Surgical excision was planned and under GA polypectomy was done with right MMA. Patient became symptom free and is still on regular polyp[FIGURE 2].

Case 2

38 year old female presented to our ENT department with right sided headache for 5 months. Patient had a h/o recurrent URTI in the past. Patient had been to local physician and was on treatment for migraine for 5 month with no improvement. In ENT OPD clinical evaluation revealed polypoidal mass in the right middle meatus. Nasal endoscopy showed single, grayish, polyp in the right OMC region. CT scan revealed complete opacification of right frontal sinus extending to middle meatus right side. Since the patient has been on medical treatment with no improvement surgical removal was planned and under GA. Polypectomy done and frontal recess widened. HPE report was inflammatory nasal polyp [FIGURE 3]. Patient is relieved of her symptoms and is still on regular follow up.

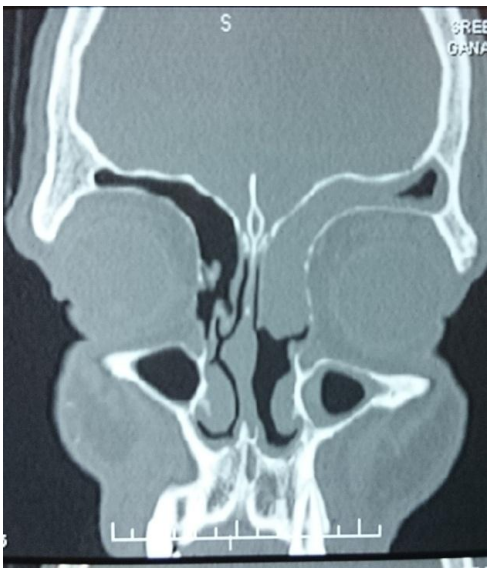

Figure 1: Pre op CT picture showing complete opacification of {L} frontal sinus extending to the nose

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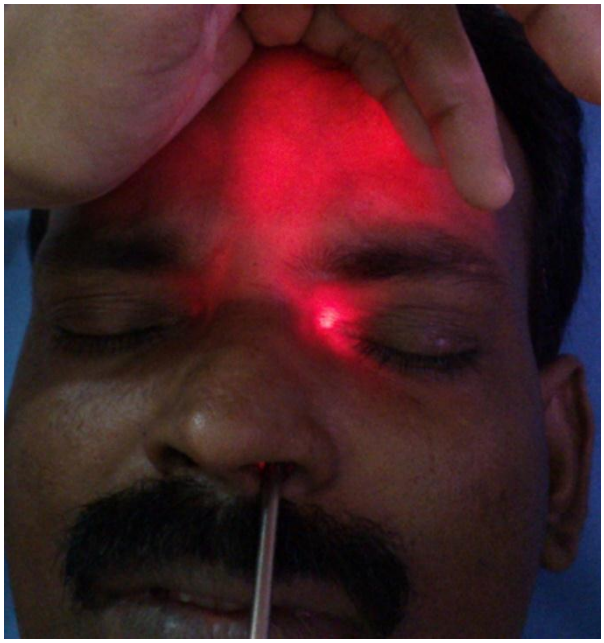

Figure 1: Post op picture showing complete transillumination of frontal sinus

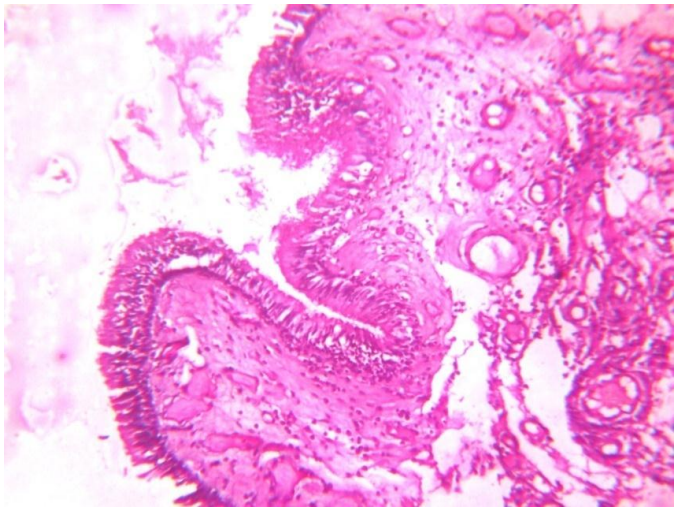

Figure 3: HPE picture showing the lesion lined with respiratory epithelium and presence of inflammatory cells

Case 3

42 year old male presented with nose block , headache Left side for 8 months. On examination he had greyish polyp in the Left nose. In DNE choanae was free. The polyp was probed all around . It was not tender and not bleeding on touch. CT revealed Left frontal haziness wit homogenous mass filling the Left nasal cavity. There were evidence of secondary ethmoid , maxillary sinusitis.Patient was put on medical treatment for 10 days .Her headache was better but nose block was persistent . Repeat Nasal endoscopy showed no change in size of polyp. Under GA, Polyp was removed and FESS done to give effective Ventilation and Drainage for all sinuses. Mass sent for HPE. The report was consistent with the other two inflammatory polyp of nose.

DISCUSSION

Nasal polyps are most common in young and middle-aged adults. Though allergy has been accepted as the commonest cause of nasal polyps ,recurrent infection can predispose as in our cases of fronto nasal polyps where all three had no history allergic symptoms Patients who have cystic fibrosis,asthma, age greater than 60 years, Churg-Strauss syndrome, or sarcoidosis, or who are male, have been shown to suffer from

increased rates of nasal polyposis [1]. Significant numbers of cases are linked to non-allergic asthma. In some cases no respiratory or allergic trigger is found. Nasal polyps have no relationship with colonic or uterine polyps. Debate continues about the exact pathophysiology of sinonasal polyps, despite much research in this area. Several studies support the idea of the development of polyps as a by-product of sinonasal inflammation. Although the source of inflammation may be variable (eg, mechanical trauma, bacteria, viruses, fungi, and environmental allergens have all been suggested), researchers theorize that these inciting events lead to disruption of the epithelial lining and initiate a resultant inflammatory cascade. If this inflammation does not subside in its normal timely fashion, stromal edema consolidates and may result in polyp formation [2]. It has been suggested that an ineffective local Th1-based immune response in these patients is associated with increased Th2-based activity, which contributes to a chronic infection as well as to an increased presence of eosinophils, which then lead to further polyp formation [3]. It has been further proposed that the weakened T1-response in these patients may be secondary to the down-regulation of some specific toll-like receptors involved in the innate immune response [4,5]. The inflammation occurs in the fluid- producing lining (mucous membrane) of your nose and sinuses. People with small nasal polyps may have no signs or symptoms..The conclusion that small polyps may lead to few symptoms is supported by a 2002 study by Larsenand Tos, which demonstrated that only a small subset of those patients with nasal polyps develop sinonasal complaints [6]. Symptoms include Persistent stuffy or blocked nose with sleep disturbances, Postnasal drip - with frequent clearing of throat, poor sense of smell and taste, headache. Nasal polyps can cause complications because they block normal airflow and fluid drainage, and also because of the chronic inflammation underlying their development. Potential complications include Obstructive sleep apnea, Orbital.complication (Spread of infection to your eye causing swelling or bulging of your eye, inability to move your eye, reduced vision or even blindness that can become permanent),Intracranial complication(Infection can also spread to the membranes and fluid surrounding your brain and spinal cord causing meningitis and brain abscess).Infection can cause problems in the veins surrounding the sinuses, interfering with the blood supply to parts of your brain and putting you at risk of a stroke. One study has had a case of frontal mucocele foll nasal polyps which is rare [7] CT characterization of sinonasal polyps has been well-elucidated by a variety of studies and includes infundibulum enlargement, bony attenuation of the ethmoid trabecula, and the presence of non enhancing soft tissue formations of a mucoid matrix density, among othertraits [8,9]. As polyps are expansile and, in some cases, may expand and erode the skullbase [10].

Microscopically, the epithelial lining of a nasal polyp is of the respiratory type unless metaplasia has occurred changing the epithelium to a squamous type. Allergic polyps are associated with large numbers of eosinophils whereas polyps which are the result of infection contain more plasma cells, lymphocytes and neutrophils. The basement membrane is thickened, sometimes greatly, especially in the case of allergic polyps. The stroma varies greatly from polyp to polyp. Usually it is edematous with an admixture of acute and chronic inflammatory cells and a few fibroblasts and small vessels. Sometimes, however, the stroma appears much more substantial with more of a granulation tissue appearance. Choanal polyps are apt to have more of a fibrous stroma than allergic polyps, which are edematous and contain eosinophils. There are mucus glands and mucus cysts in many polyps. Vascularity is variable and blood vessels often contain smooth muscle. In our study the picture showed polypoidal lesion lined by respiratory epithelium enclosing oedematous myxoid stroma with chronic inflammatory cells, infilteration and congested capillaries.

It has been suggested that up to 50% of patients who have sinonasal polyps may eventually require surgical intervention [11]. Several studies have documented the efficacy of endoscopic sinus surgery for sinonasal polyposis. One study by Batra and colleagues [12] recorded marked improvement in sinonasal symptomotology in patients with nasal polyps and asthma who underwent FESS. Another paper with a mean follow-up period of 5 years found improved functional outcomes in polyp patients who underwent sinus surgery with improvement in nasal obstruction, rhinorrhea, facial pain, and anosmia [13]. Multiple other studies have been published with similar findings supportive of the efficacy of endoscopic sinus surgery as an effective means for the treatment of symptoms secondary to sinonasal polyposis [14,15].

CONCLUSION

Sino nasal polyps have variable etiologies. Most commonly accepted etiology is allergy but our study of three cases of nasal polyp revealed different cause. Patients had no history of allergy and were not responding to anti-allergic measures. All three had isolated frontal polyps extending to the nasal cavity and were effectively managed by surgical excision.

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