Original Article

To Detect the Fungal Infection in the Patients with Nasal Polyps

Fungal Infection in Nasal Polyps

1. Muhammad Shafi 2. Mushtaque Ali Memon 3. Mukhtiar Hussain Jaffery

1. Asstt. Prof. of ENT, 2. Asstt. Prof. of ENT, 3. Asstt. Prof. of Medicine, Liaquat University Hospital, Jamshoro

ABSTRACT

Objective: To determine the prevalence of fungal infection in the patients having nasal polyps at Liaquat University Hospital, Hyderabad.

Study Design: Observational and prospective study

Place and Duration of Study: This study was conducted in the Department of the ENT of Liaquat University Hospital, Jamshoro/Hyderabad from March 2012 to August 2012.

Materials and Methods: Total 50 had selected. All the cases with nasal polyp, both genders and above 18 years of the age were integrated. Routine lab investigations had completed. Radiological examination including the X-ray of paranasal sinuses and CT scan had done to diagnosis sinuses, bony erosion, orbital and intracranial extension. Surgical procedure had done according to the need of the patient. After surgery all the samples separated in 2 places under sterile process. One for histopathology and 2nd in the normal saline had sent for fungal Culture of specimen.

Results: Total 50 cases were selected in the study after diagnosis of nasal polyp, mean age of the cases was mean +SD=36.05+7.21 years, male had found in the majority 31/(62.0%). Nasal obstruction was the most common 42/(84.0%) in the clinical presentation. Majority of the cases 26.0% were under went surgical procedure of nasal polypectomy. After done histopathology frequently diagnosis found as Inflammatory polyp 43/(86.0%), while **08**/(16.0%) cases were found with fungal infection and 42/(84.0%) were without fungal infection after culture test.

Conclusion: In conclusion fungal infection is found most common in the cases having nasal polyps.

Key Words: Nasal polyp, fungal infection, Liaquat University Hospital

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INTRODUCTION

Nasal polyposis is extremely commonest ailment of the nasal hole with the occurrence of (1.4%), and commonest in adults as contrast with the children.[1] It is accepted that nasal polyps are framed as a consequence of continuous nearby swelling of nasal or sinus mucosa, that's developed by expanding sub mucosal edema and afterward open to airway. On the other hand, the fundamental development of the nasal polyp is not understand accurately.[2]

Essential symptoms of NP are nasal blockage and congestion, hyposmia or anosmia and if connected with chronic sinusitis a purulent nasal release. Supplementary symptoms involve are, post nasal drip, rhinorrhea, facial pain and aggravation in the sleeping.[3] several series considered that polyps to be extreme appearance of chronic swelling, consequently, conditions prompting chronic inflammation in cavity of nose can develop nasal polyps.[4] Nasal location of mucosal injury can cause pooling of mucus and following colonization by fungus.[5] fungal components were associated to be the causative elements of chronic rhinosinusitis and fungal etiology had found to underlie extreme NP. Fungal agents separated from paranasal sinuses incorporate Aspergillus, Mucor, Histoplasma, Coccidiodies, Candida,[6] Acremonium, Curvularia, Fonsecaea , Penicillum.[7] Aspergillus spp. is the most widely recognized colonizers of sinuses.[5] Mostly fungi find out in dust, soil, air and plants. They stick to dust elements and are breathed in and placed on the nasal and paranasal sinus mucosa. Warm, clammy environment of the URT is a perfect situation for the multiplication of this organisms,[8] though; that's infrequently pathogenic causing host resistance is high with the exception of under positive development situations in extremely responsive individuals.[2] Cause or effects of the fungal infection in the nasal polyps is hard to focus due to the omnipresent quality of fungal spores. At the same time, several studies demonstrate that these polyps might likewise be created due to fungal infection of sinunasal mucosa.[9] Hence NP arrangement and development may be start by both fungal infection and non infectious swelling.[10,11] Fungal infection and local allergic method of colonization of sinunasal mucosa had impact in NP development. Nasal fungal infection and paranasal sinuses are arranged in 2 parts as, (intrusive) and (non obtrusive). Non intrusive incorporates mycetoma and hypersensitive fungal sinusitis. Intrusive contains the unending sluggish structure, that shows gradually dynamic bone erosion, and fulminate appearance.[12] Purpose of this study to determine the number of the cases involved in fungal infection from the cases of

Correspondence: Dr. Mushtaque Ali Memom,
Asstt. Prof. of ENT, Liaquat University Hospital, Jamshoro
Cell No. 0333-2700192- 0313 2851728
Email: dr.sajidarain@yahoo.com
drmushtaqmemon@yahoo.com

nasal polyposis at Liaquat University Hospital Hyderabad.

MATERIALS AND METHODS

This observational and prospective study had done in Department of the ENT of LUH Hyderabad. With six month of duration from March 2012 to august 2012. Total 50 cases had selected. All cases having nasal polyp, both genders and above 18 years of the age were integrated. All the patients with previous surgical history of the nasal polyposis, nasal structural abnormalities, severe co morbidities and pregnant women had excluded. After taking an informed written consent, details of history, through clinical examination by the ENT surgeon. Face examination had done to see the apparent deformity "face swelling in the sinus region, cheek, and nasal deformity". Examination of Nose and throat was done to diagnose the nasal obstruction effects. Routine laboratory investigations were completed. Complete radiological diagnosis had done as paranasal sinuses X-ray and CT scan to diagnose sinuses, extension of the orbital and intracranial and bony erosion,. Surgical procedure was done according to the need of the patient. After surgery samples had separated in two places under process of sterilization. One was sent for histopathology and 2nd had been sent for fungal Culture of specimen. Data had analyzed on SPSS version 16.0.

RESULTS

Total 50 cases were selected in the study after diagnosis of nasal polyp, mean age of the cases was mean +SD=36.05+7.21 years, male had found in the majority 31/(62.0%) as compare to female 19/(38.0%), majority of the cases was multiple work performer such as labrour 17/(34.0%), while House wife, Farmer, Teacher, Driver and Shopkeeper were 11/(22.0%), 07/(14.0%), 04/(8.0%), 08/(16.0%) and 03/(6.0%). Table 1.

Nasal obstruction was the most common 42/(84.0%) in the clinical presentation, while Nasal deformity in 11/(22.0%) cases, Headache in 23/(46.0%) cases, Sneezing in 15/(30.0%), Sore Throat in 17/(34.0%), Blood discharge from nose in 05/(10.0%) and Sinus swelling in 20/(40.0%) cases, while Difficulty in speaking was found only in 01/(2.0%) of the cases. Mostly patients were found 1 to 2 years of duration illness, results shows in Table 2**.**

Majority of the cases 26.0% were under went surgical procedure of nasal polypectomy, while 18.0% patients were underwent C.W.L operation and only 6.00 of the cases were underwent lateral rhinectomy. Figure 1.

After done histopathology frequently diagnosis found as Inflammatory polyp 43/(86.0%), while **08**/(16.0%) cases were found with fungal infection and 42/(84.0%) were without fungal infection after culture test. Table 3.

Table No.1: Basic features of the cases. n= 50

Characteristics	#of Cases/%
Age	
mean +SD	36.05+7.21 years
Gender	
Male	31/(62.0%)
Female	19/(38.0%)
Ocupational Status	
House wife	11/(22.0%)
Farmer	07/(14.0%)
Teacher	04/(8.0%)
Driver	08/(16.0%)
Shopkeeper	03/(6.0%)
Multiple work performer	17/(34.0%)

Table No.2: Clinical pattern of the cases. n= 50

Features	#of cases/%
Nasal Obstruction	42/(84.0%)
Nasal deformity	11/(22.0%)
Headache	23/(46.0%)
Sneezing	15/(30.0%)
Sore Throat	17/(34.0%)
Blood discharge from nose	05/(10.0%)
Sinus swelling	20/(40.0%)
Difficulty in speaking	01/(2.0%)
Illness Duration	
> 1 year18	18/(36.0%)
1 – 2 years17	17/(34.0%)
3 - 4 years10	10/(20.0%)
< 4 years05	05/(10.0%)

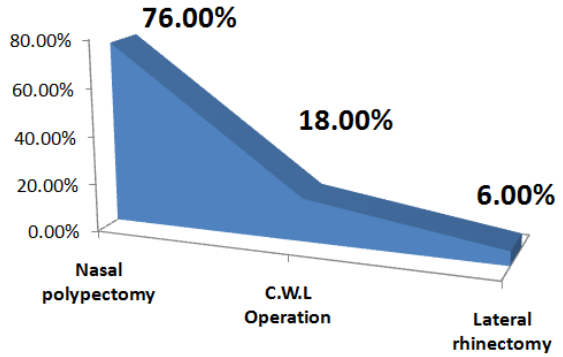

Figure No.1: Distribution of surgical procedure in the cases. n= 50

Table No.3: Histopathological and fungal culture findings. n= 50

Response	#of cases/%
Inflammatory polyp	43/(86.0%)
Stromal Atypia	02/(4.0%)
Fibrotic	02/(4.0%)
Others	03/(6.0%)
Fungus culture	
Positive	08/(16.0%)
Negative	42/(84.0%)

DISCUSSION

Nasal polyps start from respiratory mucosa cover up multiple part of ethmoidal bones. It has been proposed that NP development increments with age.[13,14] Settipane mentioned that NP incidence achieves a top in patients with age of 50 years or above,[14] besides, he mentioned that asthmatics more than 40 years old are four times more involve in NP than under the 40. Furthermore, he reports that asthmatics over 40 years of age are four times more likely to have NP than those under 40. In France, the assessed frequency of nasal polyposis expanded with age, coming to a top in the 50 to 59 year age.[15] In another study in France the mean age was 49.4 ± 17.6.[16] In this series total 50 cases were selected in the study after diagnosis of nasal polyp, mean age of the cases was mean +SD= 43.05+7.21 years, male had found in the majority 31/(62.0%) as compare to female 19/(38.0%).

Nasal polyposis has an extraordinary effect on patients' quality of life, and brings social and the limitation of occupation. It affects vitality and the general health, and mental health is more affected than physical health.[17] In this series majority of the cases was multiple work performer such as laborers 17/(34.0%).

Haro JI et al[18] reported that the main clinical manifestation was nasal obstruction in 100% of the patients, followed of nasal pruritus with 62%, sneezing in 60%, anterior rhinorrhea in 50%, posterior rhinorrhea in 32% and hyposmia/anosmia in 20% of the patients.

Meymane Jahromi A et al,[19] demonstrate that nasal polyposis affects men (60.3%) more frequently, at a mean age of 39.5 years. Nasal blockage was the commonest symptom (81.1 %) followed by rhinorrhea (37.7%). Similarly in our results nasal obstruction was the most common 42/(84.0%) in the clinical presentation, while Nasal deformity in 11/(22.0%) cases, Headache in 23/(46.0%) cases, Sneezing in 15/(30.0%), Sore Throat in 17/(34.0%), Blood discharge from nose in 05/(10.0%) and Sinus swelling in 20/(40.0%) cases, while Difficulty in speaking was found only in 01/(2.0%) of the cases. Newton JR et al.[20] suggested that the main symptoms found nasal obstruction, and obstruction is generally constant, by it may vary depending upon the size and region of the polyps

Farrukh M SH et al[21] showed that 73.3% patients with nasal polyp underwent nasal polypectomy, 20.0% cases intra nasal ethmoidectomy and 6.6% patients under went extra nasal ethmoidectmy. Similarly in this series majority of the cases 76.0% were under went surgical procedure of nasal polypectomy, while 18.0% patients were underwent C.W.L operation and only 6.05 of the cases were underwent lateral rhinectomy. The individuals who had more commonness of growths in their nasal polyps had quite a while introduction to clean at work or in their home. More incidence of fungal infection found in nasal polyps those having long time revelation to dust. Greval et al.[22] reported 10.7% patient suffering from fungal sinusitis. Dall'Igna et al.[23] (2005) reported 6.7%. Garg et al.[24] (2013) reported 26.6%. While in this series **08**/(16.0%) cases were found with fungal infection after culture test.

CONCLUSION

In conclusion fungal infection is found most common in the cases having nasal polyps, relevance of the fungi research is required and the immune system investigation is very necessary in cases having nasal polyposis, to accurate treatment.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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