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NASAL POLYPS;
IN FUNGAL NASAL POLYPS DETERMINE INVOLVEMENT OF FUNGUS TYPE

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ABSTRACT… Background: Nasal polyposis is a provocative situation of indefinite etiology that involve nasal as well as sinus mucous membrane. Quality of life of a person can damage by nasal impediment due to these nasal polyps. Further, it can cause of persistent postnasal drainage, hyposmia, sinusitis, taste sense change even bony demolition. It shows that inflammation reason a reactive hyperplasia of intra-nasal mucosal membrane resulted in the polyp formation. **Objectives:** To discover the kind of fungus concerned in nasal polyps fungal. **Study Design:** Descriptive study. **Setting:** ENT department of Sir Ganga Ram Hospital Lahore. **Period:** 1st January 2017 to 30th June 2017. **Materials and Methods:** In microbiology department, these collected samples were processed to check the involvement of fungal. Out of all, 118 cases were included in this study which culture was positive. Increase for microscopic assessment, mycological culture to determine the involvement of fungal and fungus kind, these samples were processed for diagnosis by potassium hydroxide (KOH). By using seaboard dextrose agar at 25ºC and 37ºC the fungal culture was done. Periodically it was identified through culture characteristics & microscopy if growth was present. **Results:** In this study, 118 culture positive samples were included. In 82 cases Aspergillus Spp. was observed among positive specimens; In 32 samples Aspergillus flavus was observed while in 10 samples Aspergillus fumigates was found and species was not cleared in 40 samples. The fungal element was isolated in 36 samples but genus was not determined. **Conclusion:** In fungal nasal polyposis, Aspergillus Spp. is very general pathogen and we observed in our study that Aspergillus flavus is very common agent.

Key words: Aspergillus Fumigates, Aspergillus Flavus, Aspergillus Species, Fungal Infections, Fungal Culture, Nasal Polyposis, Potassium Hydroxide (KOH) Mount.

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INTRODUCTION

Paranasal sinuses and nose fungal infection was firstly reported fungal sinusitis in 1791. Some cases of fungal sinusitis were reported evaluated with mycotic ailment at other sites but now it has been gradually more familiar.[1,2] Since a long period of time, Paranasal sinuses as well as nose aspergillus infection has been well-known but deviant allergic aspergillus sinusitis has now been recognized and identified since previous thirty years.[3,4] In 1983, Katzenstein found it as a form of non-invasive fungal sinusitis[5,6] the sinus are found fill with white tan mucoid.[7] During surgery it was observed that all have various sinuses, thickly packed with grimy black congeal mucin.[8] This rebellious substance contains fungal hyphae, eosinophil and charcotleden histologically (a study of microscopic anatomy of cell and tissues).[9]

A group of spore forming omnipresent fungi which is known as Aspergillus, affects lower and upper respiratory portions.[10,11] Aspergillus is most general fungal infection of Paranasal sinuses and commonly appear as a persistent illness.[12] The leading fungal pathogen appear to differ in dissimilar geographic territory and associated to individual host circumstances. In some patients immunoglobulin-E intercedes allergic reaction to mold appears to be linked with illness. Immunoglobulin-E mediated allergic reaction to mold notice to be linked with illness in some patients.[13]

MATERIALS AND METHODS

This descriptive study was carried out at ENT Department of Sir Ganga Ram Hospital Lahore from 1st January 2017 to 30th June 2017. These specimens were processed in microbiology laboratory for involvement of fungi. 118 culture positive cases were included in study out of these samples. In microbiology department, these collected samples were processed to check involvement of fungi. Increase for microscopic assessment, mycological culture to determine the involvement of fungi and fungus type, these samples were processed for diagnosis by potassium hydroxide (KOH). By using seaboard dextrose agar at 25ºC and 37ºC fungal culture was done to observe dimorphism. Periodically it was observed for growth for four weeks. Pathogen was identified by characteristics of culture if the growth was present and microscopic characteristics isolate was notices through lactophenol blue stain.

RESULTS

There were 60 females (50.85%) and 58 males (49.15%) with age range between <18 years to 70 years (Tables-I to II). In this study, 118 samples were included which were culture positive. Aspergillus Spp. was noticed in 82 cases out of these selected samples. In 32 samples Aspergillus flavus was observed whereas, in 10 samples Aspergillus fumigates and in 40 samples the class was not identified. Fungal element was isolated in 36 samples but genus was determined (Tables-III to IV).

Gender	Cases	Percentage
Female	60	50.85
Male	58	49.15

Table-I. Sex distribution (n = 118)

Age	No.	%
<18 years	2	1.69
18-20 years	6	5.08
21-30 years	56	47.46
31-40 years	26	22.04
41-50 years	24	20.35
51-60 years	2	1.69
61-70 years	2	1.69

Table-II. Age distribution of the cases (n = 118)

Fungal Culture	No.	%
Aspergillus Spp.	82	69.50
Genus not identified (fungal element)	36	30.50

Table-III. Frequency of fungal culture where (N=118)

Aspergillus	Cases (n=82)	Percentage
Aspergillus Flavus	32	39.02
Aspergillus Fumigate	10	12.20
Aspergillus Species not identified	40	48.78

Table-IV. Frequency of aspergillus Spp (n=82)

DISCUSSION

We conducted our study on four hundred and fifty eight patients in all patients on the basis of anterior and posterior rhinoscopy who have clinically diagnosis nasal polyposis with or without fungal infection. In 180 samples fungal element was found. In these positive fungal element samples, 62 samples on microscopy were positive. Culture positive were 118 samples and these samples were included in study.

In these 118 patients, only two patients (1.69%) were in age <18 years, two (1.69%) patients between 51 years to 60 years and 02 (1.69%) were between age group of 61 years to 70 years, twenty six (22.04%) patients in the age group of 31 to 40 years. Majority patients, 56 (47.46%) belong to the age group of 21-30 years who were culture positive, range of age was 10 years to 62 years.

In these 118 positive samples, 60 were female and 58 patients were male almost reflect the equal involvement of gender. As shown in Table-I, in our study there was no sex preponderance in fungal nasal polyposis.

In this study 58 patients were male whereas 60 patients were female. In this study proporation 58:60 was according to a study by Mansoor Basir Pal, Taimoor Malik, there was equal involvement of male and femal (25:25) in fungal nasal polyposis.[14] The study of Karthikeyan and Nirmal[15] shows a marginal male preponderance 35:32. In a study by Siddqui[16] conducted in 2014, observed female

preponderance and found 45.13% male involved in fungal infection and female patients were 54.86%. Kordbacheh[17] reported that 35% female and 65% were male preponderance found.

Culture positive samples were 118 and were included in this study. Aspergillus Spp. was observed in 82 cases among these culture positive samples. In 32 samples aspergillus flavus was observed whereas, in 10 samples Aspergillus fumigates was found and species not identified in 40 samples. Fungal element in 36 samples was isolated but genus was not determined.

Out of 118 culture positive samples, Aspergillus species was isolated in 82 cases in our study which is according to Kardbacheh[17] and Razmpa[18] studies. Rafi et al[19] found Aspergillus species in his study conducted in 1996 as the most general pathogen in nasal polyposis which is also according to our study where most general pathogen isolated was aspergillus. Study of Farrukh and Rafique[20] also observed Aspergillus as most common organism which is also according to our study.

In this study, Aspergillus Flavus was found in 32 cases in a total of 82 positive Aspergillus cases which consistent with Razmpa & Kordbacheh studies.

In India, 79.7% Aspergillus Flavus was found by Panda at el[21] while study in another region of India conducted by Chhabara et al observe isolated Aspergillus Flavus in nine (9) cases out of eleven (11) cases which also in accordance with our study.

Aspergillus flavus as a causative agent observed by Kaneswaran[22] during his study conducted at Saudi Arabia and his study consistent with our study while study of Daghistani[23] at Saudi Arabia, found Aspergillus fumigates as pathogen which is not according to our study.

CONCLUSION

In conclusion, Aspergillus Flavus was common pathogen and in fungal nasal polyposis, Aspergillus Spp. is very general pathogen observed in this study.

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When you're good at something, you'll tell everyone.
When you're great at something, They'll tell you.

– Walter payton –

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Waseem Ahmad	Writing of manuscript and compiling results	
2	Muhammad Iqbal	Data analysis	
3	Gohar Amin	Guidance in writing the manuscript	