



Prevalence of Normal Conjunctival Myco Flora in Healthy Eyes

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ABSTRACT

Objective: To determine the prevalence of normal conjunctival fungal flora in healthy eyes.

Study design: An observational study.

Place And Duration of Study: Mata Gujri College Jabalpur Feb to April 11

Patients And Methods: This study was performed on 50 Healthy persons, aged from 18 years to 45 years with normal looking eyes. The samples of sterile swab were made on conjunctiva of patients, without touching eyelashes or lid margins. The swabs were touched with conjunctiva of both eyes and inoculated in Blood agar media and SDA media

Results: Out of 50 swabs 21 (42%) showed growth while 29 (58%) showed no fungal growth. It means 42% having normal fungal flora..

Conclusion: The normal looking eyes harbour different types of the organisms. Any trauma, accidental hurt or elective surgical procedure is not free from risk of conjunctival infection, keratitis or endophthalmitis etc.

Keywords : Conjunctival flora, culture media, growth, no growth.

Introduction

The body surfaces support the growth of a variety of bacteria and fungi which collectively are called the normal flora. viruses and parasites are not considered the members of the normal flora, although they are present in asymptomatic individuals [1]. The normal flora of conjunctiva was established in 19th century [2].

Incidence of normal fungal flora in healthy eyes shows considerable variation in reported series from 2.9% (Williamson, Gordon, Wood, Dyer and Yahya[3]) to 27.9 % (Ainley and Smith[4]). The exact microbial population of the ocular surface depends on the age of the host and geographical location of climate. Though conjunctiva & cornea have efficient defense mechanism but several risk factors like age, sex, immune status, socio-economic conditions or background determine the normal flora of the eye. Prolong use of topical antibiotic and corticosteroids may result in the change of microbial flora with implantation of fungal and antibiotic resistant bacteria. Bacteria colonizing conjunctiva sac produces bacteriocin and inhibitory product lactic acid and acetic acid helps to survive pathogenic microbes. In India surprisingly very few studies have been done. Sinha and Das[5] reported 13.4% incidence in Gujeratees of Calcutta. The need for many such surveys is obvious. The present study was planned to determine the indigenous fungal flora of the eye in both sexes at all ages.

Material and Methods

Fungal sps	No of cases	Percentage
Aspergillus sps	08	36%
Candida sps	03	15%
Fusarium sps	07	35%
Penicillium sps	03	15%

Fifty patients with no clinical evidence of ocular infections, otherwise healthy were selected. The subjects were either the Sampling were done in students, teachers, Labor and House

wife. Conjunctiva swabs were taken and streaked over the surface of blood agar medium and two slants of Sabouraud's, agar medium to culture the normal fungal flora. The cultures were incubated at 25°C and 37°C. The culture tubes were examined for growth after 48 hours and subsequently at interval of 2-3 days up to 2 weeks. The fungi were identified on the basis of colonial characters and microscopy. In addition, biochemical tests were put up particularly for yeast fungi.

Results

Examination of the conjunctival swab from 50 cases without any disease of the outer eye showed the presence of fungi in 21 cases, giving an incidence of 42 per cent. They were in the age group of 18-45 years. The number of males and females were 13 and 8 respectively. About half of the positive cases were females all were put Kajal in their eyes. Males were laborers and were doing part-time agriculture work. [Table - 1] shows the species and the frequency of fungi isolated. The species most frequently isolated were *Aspergillus*, *Penicillium* and *Candida* and *Fusarium spp*.

Table 1 Relation between age group and no of cases

Age Group	Female	Male
20-25	8	5
26-30	3	2
31-45	2	1

Table2 Occupation and no of case

Occupation	Female	Male
House wife	4	0
Student	4	2
Labor	1	6
Teacher	4	0

Table 3 No of Normal Fungal Flora Of Healthy Eye

Discussion

Since fungal residence of normal conjunctiva may influences the selection of antifungal agents following corneal infection, knowing the normal flora is very important. It has been suggested that the use of antibiotics and corticosteroids in recent years has significantly increased the incidence of mycotic infections

of the eye.¹It is well documented that corticosteroids may well potentiate these commensally fungi to pathogenicity.^{17,11} Agarawal et al,¹ submitted experimental proof of producing corneal ulcer after injection of fungi and showed that corticosteroids enhance the virulence. Mitsui and Hanabusa¹⁹ have suggested that antibiotics and or corticosteroids therapy might convert non pathogenic fungi into pathogenic types. They reported 4 cases of oculomycosis after cortisone therapy Even the fungal flora of different parts of the air and room spaces may be existence.¹³⁻¹⁷ In special conditions, this normal fungal flora can be a pathogen. Normal fungal flora can also become opportunistic pathogens when the host is immunosuppressed or has had a trauma and surgery.

Females harbor fungi more commonly than males and the ratio was observed in the present work was almost 2:1. This could be attributable to increasing use of cosmetics, mascara and other beauty aids, already contaminated by fungi. Wilson,¹¹ et al grew *C. parapsilosis* from mascara. Dalfre et al reported that incidence were higher in males (84.38% and (15.62% in female) which may be due to environmental conditions, general and personal poor hygienic condition.

Isolated filamentous fungi were much more numerous than yeast, This seems to be agreement to the previous reported work in the literature. *Fusarium*, *Penicillium*, *Aspergillus* and *Candida*, *Cladosporium*, *Geotrichum* species were common^{10,11,12}

In conclusion, conjunctival colonization by fungi was seen in half of the healthy persons. *Aspergillus* was the most common isolated fungi followed by *Fusarium* and *Candida*.

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