



A CLINICAL AND EPIDEMIOLOGICAL STUDY OF OCULAR RHINOSPORIDIOSIS IN TERTIARY EYE CARE CENTRE

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ABSTRACT **Introduction:** Rhinosporidiosis is a rare type of chronic granulomatous polypoidal mass caused by "Rhinosporidium seeberi".

Aim: To analyze the clinical and epidemiological profiles of patients suffering from ocular rhinosporidiosis at tertiary eye care centre.

Methods And Materials: This is a retrospective study, conducted at the tertiary eye care centre. In our study we included 23 histopathologically proven cases of rhinosporidiosis. All patients managed by wide local excision with base cauterization.

Results: In our study, we found male preponderance, out of 23 patients 17 (74%) were male and 6 (26%) were female. 15(65.21%) patients belong to less than 18 years of age group. We found the most common site of the presentation was upper tarsal conjunctiva (86.95%).

Conclusion: Meticulous surgical excision and base cauterization remains the mainstay of treatment and help in prevention of recurrence. Public awareness for water hygiene and community health education stands best for the prevention of community transmission.

KEYWORDS : Ocular Rhinosporidiosis, Rhinosporidium Seeberi, Conjunctival Mass

INTRODUCTION

Rhinosporidiosis is a rare type of chronic granulomatous infection caused by *Rhinosporidium seeberi*,^[1] typically affecting the mucous membrane. In 1900 Sir Guillermo Seeber from Argentina depicted that the infectious agent for the disease was fungus, but later in 1923 Ashworth discovered the life cycle of the organism and established the nomenclature of *Rhinosporidium seeberi*.^[2] Taxonomic classification of *rhinosporidium seeberi* still unclear as on isolation and microbiological culture, it showed the morphological resemblance with both fungi and protozoa,^[3] but recently it is classified under Mesomycetozoea Class "Meso-" (in the middle of), "-myceto-" (fungi) and "-zoa" (animals), which belongs to a small group of microorganism protist and it is mostly parasites of aquatic animals.

It has more affinity towards the mucus membrane and mostly affecting the mucous membrane of nose, nasopharynx, and eye, it rarely involves lips, palate, uvula, maxillary antrum, epiglottis, larynx, trachea, bronchus, ear, scalp, vulva, penis, rectum, and skin. In more than 70% of cases of rhinosporidiosis most common site of involvement is nose and nasopharynx while approximately 15% of cases are ocular, and amongst them, the tarsal conjunctiva is the most common site of infection followed by bulbar conjunctiva, lid, the lacrimal gland, and sclera.^[4]

Ocular Rhinosporidiosis clinically presented as a polypoidal, sessile, or pedunculated mass which is granular, pink, or red. It causes a foreign body sensation, with irritation and watering from the eye, and with minimal effects on visual acuity.^[5,6,7,8] It may also present as a lacrimal sac diverticulum, recurrent Chalazion, conjunctival cyst, chronic follicular conjunctivitis and in contact lens wearer as peripheral keratitis. Rarely it may be present as scleral melting,^[9] ciliary staphyloma,^[10] or simulate a tumor of eyelid.^[11]

Infection is presumably acquired from an aquatic habitat of the organism through the traumatized epithelium. So it is supposedly more common in those who dive or swim in stagnant water, and also in those who had occupation inside or near the stagnant water.^[12]

Another mode of infection is autoinoculation which was first described by Karunaratne which explains the occurrence of satellite lesion adjacent to granulomas.^[13] Distant spread of infection in the body can be possible by lymphatic and hematogenous routes.^[12,11] It may disseminate to the respiratory tract, limbs, trunks, viscera, and

brain involvement found to be very fatal.^[12]

The disease is considered to be endemic in India, Sri Lanka, and Brazil and is very sporadic in other countries.^[14] Currently most published reports on rhinosporidiosis of the eye have been reported from Asia mainly from India, Sri Lanka, Nepal, and Bangladesh.

AIM: To analyze the clinical and epidemiological profiles of patients suffering from ocular rhinosporidiosis at a tertiary eye care center.

METHODS AND MATERIALS

This is a retrospective study, which was conducted at the ophthalmology department of the tertiary care center in Chhattisgarh state from January 2019 to December 2019. In our study, we included 23 histopathologically proven cases of rhinosporidiosis. All Patients included in this study had undergone a detailed history taking which included the presentation of symptoms, duration of symptoms, area of residence, bathing habits, and occupation. After that, detailed ocular and adnexal examination was done for the extension of mass. All data were retrieved from hospital records and personal interviews. Surgical excision of mass under local/general anesthesia followed by cauterization of the base of the lesion was done and then all samples were sent for histopathological examination for confirmation of diagnosis. One patient with adnexal extension treated in association with ENT surgeon, for that endonasal surgical excision and cauterisation of mass was done. All patients were followed up for 2 months. Those with incomplete data were excluded from the study.

RESULTS

Twenty-three patients with a diagnosis of rhinosporidiosis (through histopathological examination) were enrolled in this study. In our study, we had found male preponderance, out of 23 patients 17 (74%) were male and 6 (26%) were female, male to female ratio was 2.83:1 (Table 1)

Table 1: Gender Distribution In Ocular Rhinosporidiosis

Gender	No. of patients	Percent%	Ratio
MALE	17	74	2.83
FEMALE	6	26	1

In this study we had noticed that most of the cases 15(65.21%) belong to age group < 18 years, 7(30.43%) patients belong to 18-60 years and only 1(4.34%) belong to >60 years (Table 2).

Table 2: Age Distribution In Ocular Rhinosporidiosis

Agegroup	No. of patients	Percent%
<18yrs	15	65.21
18-60yrs	7	30.43
>60yrs	1	4.34

In this study, upper tarsal conjunctiva was the most common site of presentation found in 20(86.95%) patients, out of which 1 patient had bilateral tarsal conjunctival and nasal involvement. 3 patients out of 23 had the different site of involvement, of which first had the mass over lower palpebral conjunctiva, the second had mass over medial canthus near caruncle, and third, had lower lid area along with lacrimal sac involvement (Table 3) (Image 1).

Table 3: Site Of Involvement In Ocular Rhinosporidiosis

Site of presentation	No.of patients	Percent
Uppertarsal conjunctiva	20	86.95
Lowerpalpebral conjunctiva	1	4.34
Medialcanthus	1	4.34
Lacrimal sac	1	4.34

In our study we had noticed that 15(65.21%) patients were students, 1(4.34%) patient was farmer, 6(26.08%) patients were laborer, and 1(4.34%) patient was a homemaker. Most of the patients came with the complaint of unilateral ocular mass (n=21, 91.3%), followed by bleeding upper eyelid (n=1, 4.34%), and 1(4.34%) patient presented with bilateral ocular mass associated with nasal mass.

We found that the majority of patients lived in rural areas (n=17, 73.91%) rest of the patients lived in an urban area (n=6, 26.08%). Maximum patients of this study gave the history of the pond bath (n=20, 86.95%). Postoperatively all patients followed up for 1 week, 1 month, and 2 months. One patient showed recurrence after one month which may be due to incomplete excision of the mass, repeat excision of the mass was done.

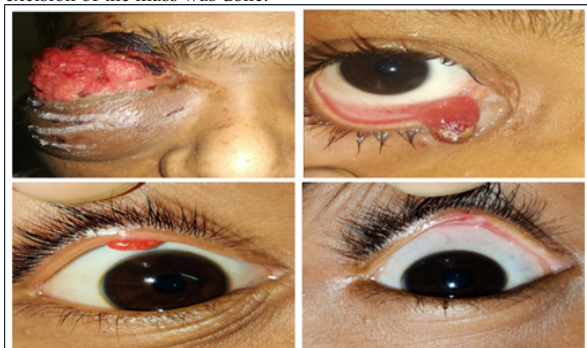


Image 1: Involvement of a) lower lid and lacrimal sac b) lower palpebral conjunctiva c) Upper tarsal conjunctiva preoperative d) postoperative

DISCUSSION

Ocular (conjunctiva) involvement of rhinosporidiosis was first described in India in 1912.^[15] It comprises 15% of all cases of rhinosporidiosis. Kuriakose in 1963 coined the term oculosporidiosis for rhinosporidiosis of the eye.^[16]

In our study, we had a high male preponderance of rhinosporidiosis like other studies.^[17,18] Most of the male in our study belonged to a young age group of <18 years and were students. Its occurrence may be because the young male age group played in stagnant water or had a history of frequent pond baths. In this study 20(86.95%) patients had the history of pond bathing,^[19,20] which corresponds with one study,^[16] which states that rhinosporidiosis was found to be very common in people living in a hot tropical climate and having a history of pond bath. Most of the patients in our study belonged to a rural area as compared to urban because the rural population depends on their daily routine activities on common water reservoirs (pond/river) where animals also bath.

In this study, we had noticed that conjunctiva (96%) was the most common site of involvement, followed by the lower eyelid associated with lacrimal sac (4%) This finding had resemblance with some studies.^[21] Most of the patients 21(91%) presented with a unilateral, polypoidal mass on the conjunctiva and only one patient

had bilateral conjunctival mass along with nasal involvement. In our study, recurrence was seen only in one out of 23 cases of rhinosporidiosis, which is found to be very less compared to other studies showing that recurrence is very common.^[16] Some study states that recurrence rate depended upon the anatomical site of infection i.e. 93% in nasal/nasopharyngeal rhinosporidiosis, 40% in the lacrimal sac, and 1% in conjunctival cases.^[22,23,24] In our study recurrence could be due to incomplete excision of the lesion, repeat surgical excision with cauterization of the base was done. So we recommend the complete surgical excision with cauterization of the base to prevent a recurrence. histopathological examination following excision biopsy should be done in every suspected case for a confirmed diagnosis.

CONCLUSION:

Although rare in other parts of India ocular rhinosporidiosis occur widely in central parts of India. In this study, we found that rhinosporidiosis is strongly associated with male gender, young and middle-aged adults, rural residential status, and history of bathing in ponds. Meticulous surgical excision and base cauterization remains the mainstay of treatment and helps in the prevention of recurrence. Public awareness for water hygiene and community health education stands best for the prevention of community transmission.

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