

Rhinosporidiosis: An Everyday Affair

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Abstract: Aim: To study the clinical profile of Rhinosporidiosis. Method: This prospective study was conducted in Ophthalmology department at a tertiary eyecare center in Western Odisha from January 2014-December 2017. Out of 62,951 outdoor patients, 348 cases (0.55%) had ocular and adnexal rhinosporidiosis. Observation: Minimum age of presentation was 4 years and maximum was 63 years. Maximum cases belonged to 20-30 years (43.9%). 65.5% cases were males and 34.5% were females. 94.8% patients belonged to lower socioeconomic status, who used ponds (90%) or rivers for bath. Common sites were palpebral conjunctiva (58.6%), followed by lacrimal sac (35.1%), subcutaneous adnexal tissue (4.6%), bulbar conjunctiva (1.7%). Out of 6 cases involving bulbar conjunctiva, sclera was also involved leading to scleral staphyloma in 2 patients. Those involving lacrimal sac underwent dacryocystectomy and rest were excised with base cauterization. All cases were confirmed histopathologically. Recurrence was seen in 3.16% of sac cases. 44.5% cases presented with epistaxis. Conclusion: Majority of cases primarily affected eyes. Transmission was through contaminated pond water. Rhinosporidiosis has high recurrence rates. It can be lowered if a complete meticulous excision along with base cauterization is performed. We recommend use of filtered supply water for all household work, including bathing.

Keywords: Rhinosporidiosis, Pond bath, Dacryocystectomy

1. Introduction

Rhinosporidiosis is a chronic granulomatous infective disease affecting the mucous membranes of upper respiratory tract, skin, and eyes. The 1st case was reported from Argentina in 1900, after that it has been documented from about 70 countries.^(1,2) India, Nepal and Sri Lanka are the endemic regions for rhinosporidiosis due to temperate climate.⁽³⁾ Rhinosporidiosis is caused by Rhinosporidium seeberi, a protozoan of mesomycetozoea group.⁽¹⁾ Majority of the cases >90% occur in South East Asia.

Rhinosporidiosis typically presents as a polypoidal mass with a strawberry like appearance which is very characteristic of the lesion. Ocular rhinosporidiosis affects conjunctiva, lacrimal sac, canaliculi, lids and sclera.⁽⁴⁾ The reservoir of infection is probably horses and cattle dung. The site of lesion in them is anterior nares, where the anchoring rope produces abrasions and provides a foothold for the organism. The mode of transmission to man is still unclear. Two theories have been postulated on transmission to human being.

Demellow's theory⁽⁵⁾ of direct transmission - He proposed that the infection always occurred as a result of direct transmission of organism. Infective material transmitted through nasal mucosa while bathing in common ponds,⁽⁶⁾

Karunaratne⁽⁷⁾ accounted for satellite lesions in the skin and conjunctival mucosa as a result of auto inoculation. He postulated that Rhinosporidium existed in a dimorphic state, as a saprophyte in soil and water, and as a yeast inside the tissues. According to Arseculeratne et al., the commonest source of infection is lake water (84%) followed by rivers (11%) and domestic well water (5%).⁽⁸⁾

The definitive diagnosis of rhinosporidiosis is by histopathological examination. The lesions show polypoid fibro-connective stroma containing globular cysts. Each of

the cysts represents a thick-walled sporangium containing numerous "daughter spores" in different stages of development. R. seeberi is stained by periodic acid-Schiff (PAS), Gomori's methenamine silver, and mucicarmine.⁹

The treatment of choice is surgical, with cauterization of the base. Dapsone (4, 4-diaminodiphenyl sulphone) has some antirhinosporidial activity by arresting maturation of sporangia and promoting fibrosis in the stroma. Postoperative dapsone therapy with 100 mg once/twice daily for 3-6 months has been found to prevent recurrence. Antiseptics which have antirhinosporidial activity are cetrimide-chlorhexidine, povidone-iodine, and silver nitrate solutions.⁹ The last two can be used for topical application for eyes.¹⁰

2. Material and Method

This retrospective study was conducted in Ophthalmology department at a tertiary eye care center in Western Odisha from January 2014-December 2017. Out of 62,951 outdoor patients, 348 cases (0.55%) had ocular and adnexal rhinosporidiosis.

3. Result

Table 1

	Our study N=348	Suseela V et al study N=49	Shrestha SP et al study N=82
Maximum cases Age group	20- 30 years 43.9%	15- 25 years 44.9%	3- 10 years 51%
Minimum age (year)	4	3	1.5
Maximum age (year)	63	61	62
Male	65.5% (228)	69.38% (34)	71.95% (59)
female	34.5% (120)	30.6% (15)	28.05% (23)
h/o pond bathing	90% (314)	100 % (49)	95%
Nasal cavity involvement	44.5% (155)	14.28% (7)	-

Minimum age of presentation was 4years and maximum was 63years. Maximum cases belonged to 20-30 years (43.9%). 65.5% cases were males and 34.5% were females. 94.8% patients belonged to lower socioeconomic status, who used ponds (90%) or rivers to bathe.

In our study, 44.5% cases presented with epistaxis. Nasal cavity involvement is 14.28%.

Table 2

site	Our study	Suseela V et al study
Palpebral Conjunctiva	58.6% (204)	77.55% (38)
Lacrimal Sac	35.1% (122)	14.28% (7)
Subcutaneous & Adnexal Tissue	4.6% (16)	-
Bulbar Conjunctiva	1.7% (6)	8.16% (4)

In Our study, common sites were palpebral conjunctiva (58.6 %), followed by lacrimal sac (35.1%), subcutaneous adnexal tissue (4.6%), bulbar conjunctiva(1.7%).

Table 3

	Our study	Suseela V et al study	Shrestha SP et al study
Scleral Thinning	0.57%(2)	8.16%(4)	-
Recurrence	3.16% (11)	10.2%(5)	2.43%(2)

Out of 6 cases involving bulbar conjunctiva, sclera was also involved leading to scleral staphyloma formation in 0.57% cases. Those involving lacrimal sac underwent dacryocystectomy and rest were excised with base cauterization. All were confirmed histopathologically. Recurrence was seen in 3.16% of sac cases.



Figure 1: Shows palpebral conjunctiva and nasal cavity involvement



Figure 2 & 3: Shows subcutaneous tissue involvement



Figure 4: Shows palpebral conjunctiva involvement



Figure 5: Shows scleral thinning

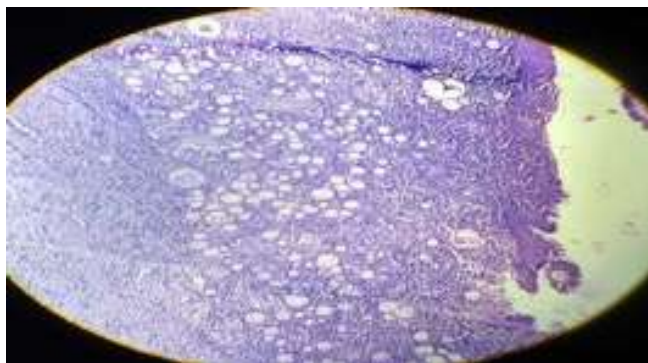


Figure 6: histopathological slide showing sporangia

4. Discussion

Minimum age of presentation was 4 years and maximum was 63 years. Similar findings are seen in Sussela V et al study¹¹ and in Shrestha et al¹² study. Maximum cases belonged to 20-30 years (43.9%). This is similar to Sussela V et al study, but in Shrestha et al study children are most commonly affected. 65.5% cases were males and 34.5% were females. Males are affected more than females in all the three studies. Men do outdoor work and women mostly are home makers in these study places thus this contribute to higher male preponderance.

94.8% patients belonged to lower socioeconomic status, who used ponds (90%) or rivers to bathe. Pond bathing is the major association in all the studies. In developing countries like India, Sri Lanka, Nepal where this disease is endemic, cattle rearing is one of the prime occupations in rural areas. In villages, pond is the most accessible large water body for cleaning cattle and performing other activities like washing clothes, taking bath, etc.

In our study, 44.5% cases presented with epistaxis. Nasal cavity involvement is more in this study as compared to Sussela V et al study (14.28%).

Out of 6 cases involving bulbar conjunctiva, sclera was also involved leading to scleral staphyloma formation in 0.57% cases which is very less as compared to Sussela V et al study (8.16%). This attributes to the less number of cases involve with bulbar conjunctiva in our study. Those involving lacrimal sac underwent dacryocystectomy and rest were excised with base cauterization. All were confirmed histopathologically. Recurrence was seen in 3.16% of sac cases. This is in comparison with Shrestha SP et al study of Nepal (2.43%). Sussela V et al study shows higher recurrence rate.

5. Conclusion

Majority of cases primarily affected eyes and involved lacrimal sac. Transmission was through contaminated pond water. Rhinosporidiosis has high recurrence rates. It can be lowered if a complete meticulous excision along with base cauterization is performed. We recommend use of filtered supply water for all household work, including bathing.

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