

Clinical Profile and Treatment Outcome of Ocular and Adenexal Rhinosporidiosis - A 10 year Retrospective Study in a Tertiary Hospital in Western Odisha

Nisha Jha¹, Sharmistha Behera², Deepak Choudhury³

¹PG Resident, Department of Ophthalmology, Veer Surendra Sai Institute of Medical Sciences and Research, Burla, Sambalpur, Odisha-768017

²Associate Professor, Department of Ophthalmology, Veer Surendra Sai Institute of Medical Sciences and Research, Burla, Sambalpur, Odisha-768017

³PG Resident, Department of Ophthalmology, Veer Surendra Sai Institute of Medical Sciences and Research, Burla, Sambalpur, Odisha-768017

Running Title: Clinical profile and treatment outcome of ocular and adenexal rhinosporidiosis - A 10 year retrospective study in a tertiary hospital in Western Odisha

Abstract: ***Aim:** To study the clinical profile and treatment outcome of ocular and adenexal rhinosporidiosis in a tertiary hospital of Odisha over 10 year period. **Material and methods:** This is a retrospective study done in a tertiary hospital of Western Odisha. 266 patients with ocular and adenexal rhinosporidiosis were included in the study. The clinical features, epidemiology, bathing habits, histology results, therapy received and recurrence of growth were analysed. **Results:** Males were affected 3 times more than females. The most common age group being 11-20 years among both the sexes. History of pond bathing is present 91% of patients. The most common site of ocular involvement is the conjunctiva. Surgical excision of the polyp was done and histopathological examination was done. Patients with lacrimal sac polyps underwent dacryocystectomy with caution to prevent spillage of spores and prevent recurrence. Selected patients were also given dapsone postoperatively to prevent recurrence. Recurrence was seen in only 4 patients. **Conclusion:** Ocular rhinosporidiosis is frequently associated with pond bathing so people should be educated to avoid this especially in this endemic zone. Every case of polyp in the conjunctiva should be sent for histopathological examination to confirm the diagnosis. . Recurrence rates can be very low if a complete meticulous excision coupled with cauterization of the lesion is performed.*

Keywords: rhinosporidiosis, conjunctiva, lacrimal sac, dacryocystectomy, dapsone

1. Introduction

Rhinosporidiosis is a chronic mucocutaneous granulomatous infection caused by lower aquatic protistan parasite *Rhinosporidium seeberi*¹. It is a part of Mesomycetozoa or DRIP clade according to latest classification by Herr et al². The common sites of infection are nose, eye, throat, ear, genitals and osteolytic lesions. About 15% of cases present in ocular location. In eye the common sites are conjunctiva, lacrimal sac, lid and sclera³. It presents as wart like tumours that are highly vascularised, pedunculated, friable and bleed to touch. The organism dwells in hot tropical climate and 90% of the cases are reported from Sri Lanka and South India⁴. Cases have also been reported from South America and Africa. Diagnosis is made by clinical observations and is confirmed by histopathology.

The presentation in eye can be polypoidal conjunctival growth, swelling in the lacrimal region, a mass of lid or rarely a sclera mass leading to scleral melting⁵. It might look similar to papilloma, granuloma or a burst chalazion. So a proper histopathological diagnosis is a must to prevent recurrences.

Here we present a 10 year case study on clinical profile and treatment outcome of cases of ocular and adenexal rhinosporidiosis in a tertiary care hospital of Western Odisha. In this study we emphasise on the case burden of this disease in our region and also the importance of complete excision and follow up in preventing recurrences.

2. Materials and methods

Case records of all ocular ocular sporidiosis cases presenting to ophthalmology department of a tertiary hospital of Odisha in the 10 year study period of January 2005 to December 2015 were analysed retrospectively. 266 patients were included in the study. The clinical features, epidemiology, bathing habits, histology results, therapy received and recurrence of growth were analysed. All the patients were sent to the ENT department to undergo a complete examination of nasal cavity. Surgical excision was done followed by thermal cautery in all cases. In cases of lacrimal sac rhinosporidiosis complete excision of sac with subcutaneous tissue was done followed by copious irrigation with 5% betadine solution. Post operative Dapsone 100 mg twice for 3-6 months was given to prevent recurrence in patients with lacrimal sac involvement. Diagnosis was confirmed histopathologically.

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3. Results

266 patients were included in the study, out of which 210 were males and 75 were females. In 94.36% (251) cases there was unilateral involvement and there was not much significant difference on laterality of eye involved. According to table no.1 it was more common in age group of 11 to 20 years. History of pond bath was present in 91% (243) cases. The duration of symptoms varied from 2-6 months in most of the cases. 4 cases presented with a recurrence of growth after a surgery before. According to table no. 2 the most common site of involvement was conjunctiva followed by lacrimal sac and then the lids. In conjunctiva the most common site was lower palpebral conjunctiva followed by upper palpebral conjunctiva. Most common symptom in conjunctiva was presence of polypoidal pink polyp often seen to be protruding through palpebral aperture mostly pedunculated. The polyps were soft and pink and showed numerous gray white spots on the surface. The patient with lacrimal sac swelling presented with watering with boggy, fluctuant swelling in the sac region or blood stained discharge from punctum on syringing. Out of the 4 recurrences 3 had recurrence in the sac out of which one developed lacrimal fistula because some part of the sac was left behind and 1 case had recurrence of conjunctival polyp at the same site. They were again taken up for surgery with more precaution.

Table 1: Patient Profile

Age group	male	female
0-10 yrs	76	22
11-20 yrs	93	37
21-30 yrs	21	11
31-40 yrs	14	4
>40 yrs	6	1
total	210	75

Table 2: Site of ocular involvement

Site	Patients
Conjunctiva-	
upper palpebral	72
Lower palpebral	103
Bulbar and forniceal	6
Lacrimal sac	67
eyelids	18

4. Discussion

Ocular rhinosporidiosis is commonly associated with a habit of pond bathing as stagnant water acts as a reservoir of this pathogen. The presumed mode of human infection is due to contact of traumatized epithelium with contaminated water⁶. There is a higher prevalence of this disease in young males because of more outdoor activity which has been also seen in Kuriakose study⁷. Though mostly it is easy to diagnose it clinically but still histopathological examination is recommended in every case following excision for conclusive diagnosis. Microscopically a number of sporangia of varying sizes may be seen in the oedematous subepithelial tissue. The surrounding tissue may show granulomatous reaction with a number of giant cells⁸. Attempts to culture the organism has not yet been successful. The conjunctiva is the most common site of infection in our

study which is consistent with the studies done earlier. Mostly conjunctival polyps were excised and thermal cautery was applied at the base. Excision of lacrimal sac polyps has been reported to be unsatisfactory by Kuriakose⁶. Extra caution was taken at the time of surgery of lacrimal sac because of high friability of sac and brisk intraoperative bleeding. In most of the cases sac could not be removed in toto. Dense adhesion of the sac was seen to the surrounding tissues. So all local extensions of the growth were removed meticulously with a combination of sharp and blunt dissection. After excision, the lacrimal fossa was curetted and the surrounding tissue was irrigated with 5% betadine solution. In few cases even heat cautery was done in the surrounding tissues. Bleeding at the site that occurred during the procedure usually stopped on its own after complete removal of the polypoidal growth. This was a good indication that dissection and removal of the growth is complete. Dapsone was given postoperatively to prevent recurrence as it can arrest maturation of sporangia and promotes fibrosis in stroma⁹. So recurrence was less in our study.

5. Conclusion

Ocular rhinosporidiosis is frequently associated with pond bathing so people should be educated to avoid this especially in this endemic zone. Every case of polyp in the conjunctiva should be sent for histopathological examination to confirm the diagnosis. During any surgery of sac with rhinosporidiosis the surgeon should always do a dacryocystectomy and pre-operative nasal cavity examination should be done to rule out any rhinospores of the nasal cavity as both of them co-exist in most of the cases. Recurrence rates can be very low if a complete meticulous excision coupled with cauterization of the lesion is performed.

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