Original articles

Ocular and adnexal rhinosporidiosis : the clinical profile and treatment outcomes in a tertiary eye care centre

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Abstract

Introduction: Rhinosporidiosis may mimic a burst chalazion or a simple conjunctival polyp.

Objective: To study the demography, histopathological evaluation, treatment modalities, their outcomes and recurrence rates in patients clinically and histopathologically diagnosed as ocular and adnexal rhinosporidiosis.

Patients and methods: The study was conducted in the Department of Orbit, Oculoplasty and Oncology at a tertiary eye care centre in South India. Fifty patients were included who were diagnosed with ocular and adnexal rhinosporidiosis. The conjunctival and lid mass underwent complete excision. All patients with rhinosporidiosis of the lacrimal system underwent dacryocystectomy (DCT) with care taken to avoid spilling the spores. Diagnosis was confirmed histopathologically.

Results: The mean age at presentation was 30.42 years, standard deviation(SD) being 16.89 (1 - 70 years). The mean follow-up was 14.2 months (12 months - 18 months) . The most common site was conjunctiva (n = 26 eyes, 52 %), followed by the lacrimal sac (n = 13, 26 %) and lids (n = 11, 22 %). All the cases were treated by surgical excision with cautery at the base. There was a single recurrence (2 %) involving the lacrimal sac. Endonasal polypectomy combined with exploration in the sac region was done. There were no further recurrences during subsequent follow-up.

Conclusion: Rhinosporidiosis is an ocular disorder with high recurrence rates reported. We recommend histopathological examination in every case following excision biopsy for conclusive diagnosis. Recurrence rates can be very low if a complete meticulous excision coupled with cauterization of the lesion is performed.

Key-words: ocular rhinosporidiosis, oculosporidiosis, adnexal rhinosporidiosis

Introduction

Rhinosporidiosis is a chronic and localized infection of the mucous membrane caused by ***Rhinosporidium seeberi*** which is an aquatic protistan parasite (Herr et al, 1999) though previously thought to be a fungus. It presents as a polypoidal and vascular mass, (Shrestha et al, 1998) affecting nasal cavity, eye, throat, ear and even genitalia. Conjunctiva, lacrimal sac, sclera and eyelids are the most common ocular sites involved. It is very common in hot tropical climates and endemic zones located in south India (Ratnakar et al, 1992).

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Clinically it might mimic as a granuloma/ papilloma or a burst chalazion and in the absence of correct histopathological diagnosis it continues to get treated inappropriately with frequent recurrences. We present one of the largest prospective series of fifty patients highlighting the presenting clinical features, their histopathological correlates, treatment modalities; their outcomes and the recurrence rates over a follow up period of 1.5 years. Our study emphasizes the importance of complete excision with an extremely low recurrence rate (2 %) in contrast to previous studies (Kuriakose et al, 1963).

Patients and methods

The study was conducted in the Department of Orbit, Oculoplasty and Oncology at a tertiary eye care centre in south India. We analyzed the presenting features and treatment outcomes of 50 patients who were clinically diagnosed with ocular and adnexal rhinosporidiosis presenting from March 2005 to October 2007. All the patients were followed for a minimum period of one year. Mean follow up was 14.2 months.

In our study, all cases presenting with polypoidal, soft, pink growth of conjunctiva with gray white spots studded on the surface were clinically suspected as conjunctival rhinosporidiosis and those with soft, fluctuant swelling in the region of lacrimal sac area with history of epistaxis, or blood stained discharge from puncta were suspected to have rhinosporidiosis of the lacrimal sac.

Epidemiology (age, sex), detailed clinical features, and treatment outcomes were studied and analyzed. For all conjunctival mass complete excision was done. Those involving the lids; complete excision was done along with primary closure. All patients with rhinosporidiosis of the lacrimal system underwent dacrocystectomy (DCT). Since the diagnosis was presumptive it was confirmed intraoperative by opening the lacrimal sac. Pink, vascularized growth with finger-like extension was seen. The sac was sutured and dacryocystectomy was performed. Care was taken to avoid spilling of spores during complete removal of the mass. Extension of growth in nasolacrimal duct were also removed en bloc along with the sac. The nasolacrimal duct wall was curetted after removal of growth. Diagnosis was confirmed histopathologically.

Results

Rhinosporidiosis of eye and its adnexa were unilocular in all 50 patients. Mean age at presentation was 30.42 years, standard deviation (SD) being 16.89 (1 -70 yrs). Mean follow up was 14.2 months (12months-18 months).

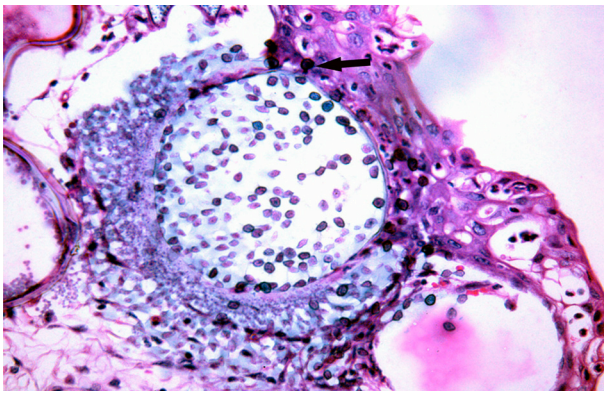

Figure 1: High power view showing sporangia filled with numerous endospores with bursting of sporangia and trans-epithelial migration of spores

Figure 2: Pre-operative lesion on the bulbar conjunctiva

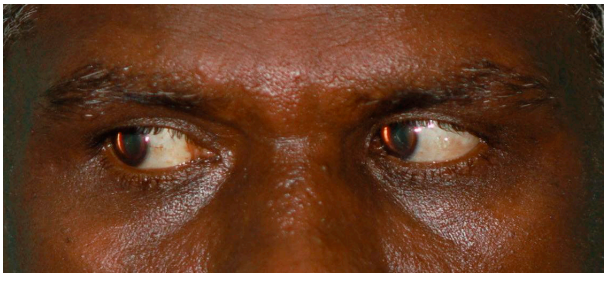

Figure 3: Post-operative picture showing complete resolution following excision

The condition was found more common in patients between 11-20 years of age (36 %). Males were affected more often than the females (41:9), probably due to more outdoor activities .Conjunctiva was the most common ocular site of involvement n= 26 eyes (52 %),lower tarsal being most common followed by lacrimal sac n= 13(26 %) and eyelids n=11(22 %). Thirteen patients presented with lacrimal sac rhinosporidiosis, the mode of presentation was mucocele n=4, fluctuant swelling n=3, blood stained discharge through puncta n=4, blood stained discharge following syringing n=2. Eleven eyes had lid involvement secondary to conjunctival involvement, upper lid (n=3), lower lid (n=7), medial canthus (n=1).

There was a single recurrence during the follow up period involving the lacrimal sac. The patient presented 6 months after the surgery with epistaxis and blood tinged tears. Endonasal polypectomy combined with exploration in the sac region was done. There were no further recurrences during subsequent follow up.

Discussion

Rhinosporidium seeberi gains entry through the mucosa and incites non granulomatous inflammation. Ocular rhinosporidiosis is a disease of tropical climate and usually suspected in children with a history of bathing in local ponds/river water presenting with conjunctival polyp and chronic dacryocystitis (Kuriakose et al, 1963). The conjunctiva is the commonest site of infection but the lacrimal gland, lid and sclera may also be affected by ocular rhinosporidiosis (Sood and Rao, 1967). Most of the lesions are vascular and they bleed on touch. In our series some cases had atypical presentation and were diagnosed to be a simple polyp/burst chalazion (upper tarsal conjunctiva) and the diagnosis was revealed only on histopathological examination. On staining with hematoxylin and eosin stain numerous sporangia at varying stages of maturation are seen in fibrovascular stroma. These sporangia are filled with endospores along with adjacent polymorphonuclear neutrophilic infiltration . Some of the sporangia show rupture of the capsule with liberation of the endospores under the epithelium (Figure 1).

The treatment of choice is complete surgical excision of the mass resulting in a very good postoperative outcome (figure2, figure 3). For cases involving the lacrimal sac dacrocystectomy is recommended (Sood and Rao, 1967). During dacrocystectomy care should be taken to avoid spilling the spores as well as complete excision of intact sac thereby minimizing the recurrence rates.

Medical therapy is still controversial since cultures of R seeberi have been unsuccessful in all artificial media thus making sensitivity determination impossible. Dapsone has been implicated to have some benefit by arresting maturation of sporangia and accelerating their degenerative changes (Vijaikumar et al, 2002). Dapsone prevents the uptake of para amino benzoic acid by the micro-organism by competitively inhibiting the enzyme, folate synthetase. This interferes with the synthesis of folic acid, which is essential for the formation of DNA. Thus, it decreases the formation and maturation of spores. It also causes fibrosis and shrinkage of the lesion, causing its regression and reducing chances of recurrence (John and Mohandas, 2005). In our study medical therapy was not instituted to any of the patients.

In our series, recurrence was seen in only one out of 50 cases of rhinosporidiosis. The result of this study does not agree with observation of earlier studies (Kuriakose et al, 1963) which states that recurrence is inevitable. Rhinosporidiosis though a rare entity should always be suspected especially in tropics with a history of bathing in local ponds/ river water. We recommend the histopathological examination following excision biopsy in every case for conclusive diagnosis. It should be considered as a strong differential diagnosis in well vascularised polypoid conjunctival lesions.

Conclusion

Recurrence rates can be very low if a complete meticulous excision is performed coupled with cauterization of the lesion.

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