

Nasal Rhinosporidiosis- An experience in our institution

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Abstract

Background: Rhinosporidiosis is a rare chronic granulomatous disease caused by *Rhinosporidium seeberi* belonging to a novel group of fish parasites Mesomycetozoa. Rhinosporidiosis is an age old endemic source which has affected various parts of the world, most notably India and Sri Lanka. It commonly affects nose and nasopharynx. **Methods:** This is a prospective study of distribution pattern and management of 8 cases of Rhinosporidiosis in department of otorhinolaryngology A. J. Institute of medical science, Mangalore over a period of 1 year (2016-2017) and the behavioural pattern of the disease, its epidemiology, rate of recurrence and outcomes of surgical management were analysed. **Results:** Our study of 8 patients showed a slightly farmer male preponderance, with a clear cut history of having Bath in rivers and ponds were found to be strongly associated with Rhinosporidiosis. Nasal obstruction and epistaxis were the most common presenting complaints. The majority of cases had been excised endoscopically with partial inferior turbinectomy and cauterization of base under general anesthesia with less bleeding and no recurrence rate. **Conclusions:** Rhinosporidiosis is strongly associated with male gender, a history of bathing in ponds and rivers. Post-surgical recurrence of rhinosporidial masses can be avoided with careful and complete clearance of the mass and cauterization of the base.

Key Word: Rhinosporidiumseeberi, Granulomatous, endoscopic excision, Recurrence.

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INTRODUCTION

Rhinosporidiosis is a rare chronic, granulomatous disease caused by an aquatic parasite. *Rhinosporidium seeberi* belonging to a novel group of fish parasite *Mesomycetozoa*.¹ Rhinosporidiosis is characterized by reddish polypoidal masses with hyperplastic and friable which may be pedunculated or sessile. It is known to commonly affect the mucous membranes of the nasal cavity and nasopharynx, mainly the anterior nasal septum

and vestibule. Occasionally, conjunctiva, lacrimal sac, maxillary antrum, larynx, trachea, bronchi, urethra, and skin are affected. Disseminated type affects deep viscera and is known as malignant rhinosporidiosis.² This disease is endemic in India and Srilanka³ and few parts of Africa, South America, etc. In India, majority of the cases are from southern states of Tamil Nadu, Kerala, and Andhra Pradesh. Hot tropical climates have been found to be the most suitable environment for this organism to harbour, being hyperendemic in Sri Lanka and Southern India. This disease has been reported from about 70 countries including Europe, North and South America, Brazil, Argentina, Mexico with scattered reports from Columbia, Venezuela, Uganda, Madagascar, Ghana, Iran, Russia and South East Asia.⁴ Rhinosporidiosis was first described by Guillermo Seeber in Buenos Aires, Argentina, who proposed the infective aetiology for this disease to be a fungus, which was later isolated by Ashworth in 1923, who in turn described the life cycle of the organism and established the nomenclature *Rhinosporidium seeberi*.⁵ Most proposed mode of infection is through traumatized

epithelium by transepithelial infection. A detailed history of bathing habits and occupational exposure to stagnant water helps to clinch the clinical diagnosis, while histopathological examination of the excised mass confirms it.⁶⁻⁹ Most successful treatment is endoscopic excision with cauterization of base.¹⁰ Incomplete excision leads to recurrences.

MATERIALS AND METHOD

The current study is a prospective study involving 8 cases who presented to our outpatient Department of Otorhinolaryngology and Head and Neck Surgery in A. J. Institute of medical science, Mangalore during a one year period between November 2016 to November 2017. Consent was obtained from all patients. Detailed history was obtained which included history of nasal obstruction, epistaxis and nasal mass, duration of symptoms was also noted together with personal habits, area of residence, bathing habits and work profile of the patient. All patients have undergone complete ear, nose, throat (ENT), and head and neck examination including pre-operative diagnostic nasal endoscopy to assess the site and extension and number of lesions. All patients underwent complete hemogram and blood grouping and typing before being taken up for surgery. Computed tomography scan of nose and paranasal sinuses was undertaken to know the extent and site of origin of disease. The diagnosis is confirmed with histopathological examination. All the patients were subjected to partial

inferior turbinectomy with endoscopic excision and cauterization of the base. Excised mass was then sent for histopathological study. Diagnosed patients were put on Dapsone on the third post operative week, for a month. All patients had been followed up for a period of 12 months and were subjected to clinical examination and diagnostic nasal endoscopy at regular intervals; 2 weeks, 3 months, 6 months, 9 months and at the end of 1 year respectively.

RESULTS

This was a prospective study conducted for one year in our hospital. 8 patients presented to us with history of nasal obstruction, epistaxis and nasal mass. Duration of the symptoms varied from 3 months to 3 years. In our study 6(75%) were males and 2(25%) were females. Age of the patients varied from 25 to 60 years, with the most common symptom being nasal obstruction and epistaxis. Out of 8 patients, 5(62.5%) patients had unilateral disease and 3(37.5) patients had bilateral involvement. 7 patients presented for the first time and only one patient had recurrent disease in the period of 3 years and patient had undergone repeated excision about 3 times in the past. All patients had excessive intra operative bleeding and underwent partial inferior turbinectomy with endoscopic excision and cauterization of the base. Nasal pack was removed after 48 hours following surgery. Excised mass was sent for histopathological study. Postoperatively one patient was transfused with one bottle of blood.



Figure 1: Diagnostic nasal endoscopy



Figure 2: Computed tomography of paranasal sinuses showing soft tissue density in nasal cavity

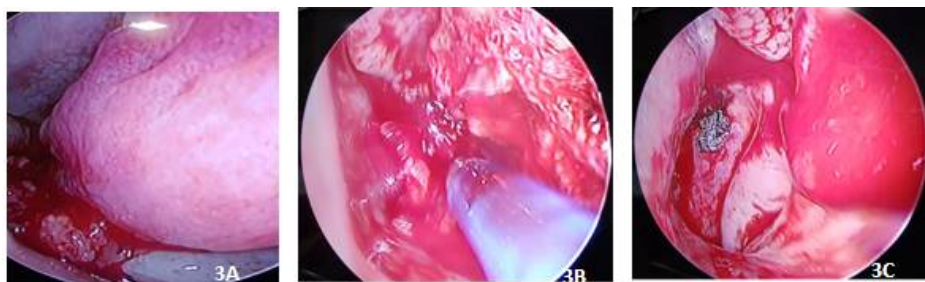


Figure 3a, 3b, 3c: Intraoperative Images



Figure 4A:

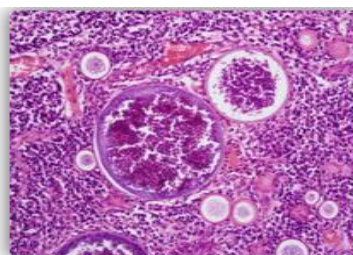


Figure 4B:

Figure 4A: Specimen of rhinosporidiosis attached to inferior turbinate Figure 4B: Rhinosporidiosis-showing sporangia with endospores

DISCUSSION

Rhinosporidiosis is thought to be caused *R. seeberi* belonging to a class of Mesomycetozoa. All our cases came from rural areas surrounding Mangalore district. All cases had a preceding history of bathing in ponds and swimming in contaminated ponds and rivers in their respective villages, indicating the most common mode of transmission.¹¹ The disease is found to mostly involve the lateral wall followed by septum, floor, and nasopharynx. Predominant symptoms were nasal obstruction and nasal bleeding. They present clinically as papillomatous and polypoid lesions. The lesions are soft, highly vascular, sessile or pedunculated with greyish undersurface resembling strawberry studded lesion with white dots representing sporangia. This study showed a higher prevalence of rhinosporidiosis among males. This finding is in accordance with those of other authors, namely Arsecularatne *et al.*, and Grover *et al.*, showing a higher male preponderance in their respective studies.^{6,12} Females have a lesser chance of animal contact and less frequent pond baths, thus accounting for the lower female prevalence. Some authors also opined that the effect of estrogen in females may provide some protection from the disease.¹³ Arsecularatne also found similar findings in his study, and found that people from rural areas engaged in agricultural work and who bathed in ponds with animals were at risk of developing rhinosporidiosis.⁶ He also found that people taking bath in lakes or reservoirs suffer more from rhinosporidiosis of the upper respiratory tract and eye as compared to people taking bath in wells. Arsecularatne also found in their respective studies a correlation between low socioeconomic status and

occurrence of rhinosporidiosis.⁶ The probable reason for this may be the poorer standards of hygiene among people of low socioeconomic status. Patients in this study most commonly presented with complaints of nasal obstruction, followed by epistaxis, nasal discharge and nasal mass. Guru and Pradhan found most of their patients presented with epistaxis, followed by nasal discharge, nasal obstruction, sneezing and anosmia.⁹ Guru and Pradhan in their study found a greater number of cases with nasal involvement than those with extra-nasal involvement.⁹ Of those with extra nasal involvement, they found that nasopharyngeal region to be the most common region followed by ocular, dermal and laryngeal region. Of those with nasal involvement, they found the most common site of attachment to be the lateral wall of nose, followed by the septum and floor, and the area of least occurrence to be the roof of the nose. All cases of nasal and nasopharyngeal rhinosporidiosis were treated by wide endoscopic excision and cauterization of the base by diathermy. Other lesions in the nose, nasopharynx and skin were excised with cauterization of the base. Rhinosporidiosis is an age old endemic disease affecting various parts of the world, most notably India and Sri Lanka. Although a large body of literature exists regarding this problem, postoperative recurrence rates continue to vary. The effect of public health education in the eradication of this disease is yet to be taken into account. This study confirms the body of evidence regarding the epidemiology, treatment and prognosis of rhinosporidiosis.

CONCLUSION

Rhinospordiosis is a chronic granulomatous disease of the nose and nasopharynx with a male preponderance, more commonly seen in young and middle aged adults. Bathing in contaminated ponds and river is the main mode of transmission. Patients most commonly present with complaints of nasal obstruction and epistaxis. Diagnosis, proper assessment and a combined modality of treatment chiefly comprising of partial inferior turbinectomy with endoscopic Surgical excision and cauterly of the base and medical management with dapson therapy is the treatment of choice. Endoscopic identification of stalk is mandatory before excising the lesion. A strong system of public health education may help to reduce the incidence of this disease, eventually leading to the eradication of this menace as highlighted in our study.

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