

ENDEMIC OF RHINOSPORIDIOSIS: A CLINICOPATHOLOGICAL PROFILE OF 38 CASES IN A SMALL VILLAGENarayanaswamy G. N¹, Rajendraprasad H. M²**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: Rhinosporidiosis is endemic in various parts of India and Srilanka. We report a total of 38 cases in a single locality from Pavagada situated in northeastern part of Karnataka in South India. All patients presented with nasal mass and nasal obstruction. The whole cluster of cases were treated by excision and electrocautery of base of lesion. We are hereby reporting this case series for its endemic nature and to highlight the importance of creating health awareness among general public about the disease. The endemic nature of rhinosporidiosis was not documented anytime previously in this part of the country.

KEYWORDS: Rhinosporidiosis, nose, Endemic, sporanjia.

INTRODUCTION: Rhinosporidiosis is a chronic granulomatous disorder of nose caused by *Rhinosporidium seeberi* and is endemic in India and Srilanka but has also been sporadically reported from United states, South America and Iran.¹ Seeber in 1900 described the organism as protozoa, Ashworth in 1923 described the life cycle of *Rhinosporidium* and thought it to be a phycomycete and named it *Rhinosporidium seeberi*.² The history and lifecycle was described in detail by Karunaratne.³ Rhinosporidiosis frequently involves the nasopharynx (70%) presenting as painless, friable, polypoidal growth which may hang anteriorly into the nares or posteriorly into the pharynx.⁴ Since the etiological agent *Rhinosporidium seeberi* is intractable to isolation and microbiological culture the taxonomy has been debated.⁵ Moreover it shows morphological features resembling those of fungi and protozoa.⁶ Rhinosporidiosis is a condition which both clinicians and microbiologists should keep in mind when managing patients with nasal masses.

Nasal rhinosporidiosis usually affects males (70-80%) and the incidence is greater in those between 20 and 40 years.⁷ The exact mode of transmission is not clear. The infection may be acquired through contaminated water, dust, infected clothing or finger.⁸ Common pond bathing with animals has also been blamed for its acquisition.⁹ Paddy cultivators seem to be more prone to this infection.¹⁰ Auto inoculation was considered by Karunaratne in his classical monograph on rhinosporidiosis to be the explanation for the occurrence of satellite lesions adjacent to granulomas especially in the upper respiratory sites and for local spread. Spillage of endospores from polyps after trauma or surgery is thought to be followed by autoinoculation through the adjacent epithelium.¹¹

MATERIALS AND METHODS: We are hereby reporting 38 cases of rhinosporidiosis who presented to us in the Department of ENT, Shree Siddhartha Medical College, Tumkur during the period of five years from august 2008 to September 2013. The present study delineated the clinicopathological aspects of rhinosporidiosis in this part of India.

All the 38 cases presented with nasal mass of varying size, smallest measuring 1cm to largest 10cms in its dimension. Clinically the mass appeared as pink, fleshy, polypoidal mass with the surface

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studded with white spots. 36 cases were pedunculated and arising from the caudal end of the septum while 2 cases had their origin in anterior end of inferior turbinate. Age of the patients ranged from 16 years to 45 years. Males dominated the picture with 34 cases and only 4 were females. The primary complaint of all these patients was nasal obstruction and epistaxis of varying degree. It was surprising to note that all patients had disease limited to nose unlike other studies wherein disease was more so in nasopharynx.

Out of the 38 cases, 36 were from a single place called Pavgada in Karnataka and the rest 4 were from other places around Tumkur. All the patients underwent endoscopic excision of the nasal mass with electrocoagulation of the base of lesion to prevent chance of recurrence. Postoperatively the patients were treated with parenteral antibiotics for two days followed by oral antibiotics for five days. Out of 38 patients, 36 are under regular follow up and none have had relapse. The specimens were subjected for histopathological examination. Haematoxylin and eosin staining showed Sporangia with double layered eosinophilic wall of approximately 5 microns thick filled with round basophilic sporangiospores. Epithelium was thinned out at places where a ripe sporangiosporum was situated at the surface.

Since a large chunk of patients were from a single area we decided to conduct a field study in that area of Pavgada to know more about the disease and if possible find out the cause of this endemicity. With the active cooperation of our operated patients we found some interesting facts. All 36 patients were from the same community and had the ritual of taking bath in a small pond located adjacent to their place of worship. A corroborative inference was thus drawn that taking bath in that pond might be the reason for so many people getting infected. Hence a health education programme was conducted to discourage people from taking bath in that particular pond and also a public notice was put up informing the people about the hazards of taking bath in that pond.

There were some previously quoted references which showed relationship between blood groups and occurrence of rhinosporidiosis. We did a similar study and found that 70% of our patients were O Rh positive group and 30% were AB Rh positive. No conclusions were drawn from this but can be useful for future references.

DISCUSSION: The great majority of rhinosporidiosis occur in upper respiratory tract, notably the anterior nares, nasal cavity, inferior turbinate, caudal end of septum and floor of nose. Other sites of occurrence of the disease are conjunctiva, lacrimal sac, external urethral meatus.¹¹ In our study all the lesions were arising from the caudal end of septum. Characteristically the rhinosporidial lesions in the nasal passages are polypoidal red due to pronounced vascularity with surface studded with yellowish pin head spots which represent mature sporangia.¹¹

The definitive diagnosis of rhinosporidiosis is by histopathology on biopsied or resected tissues with the identification of the pathogen in its diverse stages, rather than the stromal and cellular response of the host. Histological differential diagnosis includes pyogenic granuloma, coccidioidomycosis and myospherulosis (an iatrogenic condition related to application of nasal substances).¹² Total excision of the polyp, preferably by electrocautery is recommended. Pedunculated polyps permit radical removal while excision of sessile polyps with broad base of attachment to the underlying tissue is sometimes followed by recurrence due to spillage of endospores onto the adjacent raw mucosa.¹¹ however none of the cases in our series had recurrence.

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While several antibacterial and antifungal drugs have been tested clinically, but none were successful. The only drug which was found to have some antirhinospordial effect is Dapsone (4, 4-diaminodiphenyl sulphone).^{13,14} No drugs were given in our study.

CONCLUSION: This is one of the largest case series where so many patients of nasal rhinosporidiosis were documented and treated from a small area. The fact to be emphasized here is that by creating awareness among the general public, we were able to pass on the information about this particular disease, as a result of which we were able to not only treat so many people suffering from rhinosporidiosis but also localize the causation of the disease with the lifestyle activities of these people.

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