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Clinical profile of rhinosporidiosis in a tertiary care center of an endemic area

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ABSTRACT

Background: Rhinosporidiosis is a chronic granulomatous inflammation caused by *Rhinosporidium seeberi*. It is water borne disease endemic in Kanyakumari district of South India. The objective of the study was to study the clinical profile of rhinosporidiosis in an endemic area of Kanyakumari district
Methods: This is a prospective study of 50 surgically treated cases of rhinosporidiosis carried out in the department of ENT, Kanyakumari Government Medical College from January 2016 to December 2017. All were diagnosed on clinical basis and were treated by excision and electrocautery of the base. The specimens were sent for histopathological examination.
Results: The cases in this study were in the age group between 6 to 70 years. Of these 38 were males and 12 were females indicating a male preponderance. The main presenting symptom was epistaxis in about 80% cases. Nose is the common site involved. Extra nasal spread is common in recurrent cases.
Conclusions: The study reflects the endemicity of this disease in Kanyakumari district of Tamil Nadu. High incidence is noted in those bathing in ponds. Extra nasal spread is common in recurrent cases and raising health awareness will go a long way in decreasing its incidence.

Keywords: Rhinosporidiosis, Epistaxis, Recurrence

INTRODUCTION

Rhinosporidiosis is a chronic granulomatous inflammation commonly affecting the mucous membrane of nose, nasopharynx and lacrimal sac.[1] Other rare sites include lips, palate, uvula, conjunctiva, skin, larynx, trachea, bronchus, scalp, penis and vagina. The causative organism is *Rhinosporidium seebri* first described in 1900 by Gullermo Seebri. Majority of cases are reported in India and Sri Lanka. Mode of spread is from dung of infected cattle, stagnant water sources like ponds and tanks in endemic areas.[2]

In India, certain parts like Thanjavur, Madurai, Kanyakumari districts of Tamil Nadu, Allepy, Kottayam, Trivndram districts of Kerala are endemic to rhinosporidiosis. Very occasionally, the disease has been seen in Europeans who have visited India and Sri Lanka. Sporadic cases come from USA, Brazil, Africa, Uganda and Iran.

This disease is commonly seen in adult men with male female ratio of 3:1. Few attainable data shows higher incidence in subject with blood group O.[3] The presumed mode of infection from the natural aquatic habitat of *R. seebri* is through traumatized epithelium most commonly in nasal cavities.[4] In the nasal cavity septum, inferior turbinate, inferior meatus, floor are commonly involved.

Characteristically, rhinosporidial lesions in nasal cavity are polypoidal, granular and red in colour with surfaces studded with sporangia. Spillage of endospores from rhinosporidiosis mass during surgery leads to autoinoculation to adjacent epithelium causing multiple

polyp in recurrent disease.[5] There is evidence of spread to anatomically distant sites such as limbs, trunk, by development of subcutaneous granulomas without breach of overlying skin.[6] Rhinosporidiosis also affects bulbar and palpebral conjunctiva. Rhinosporidiosis of lacrimal sac and nasolacrimal duct has also been well documented probably due to autoinoculation from conjunctiva.[7]

Most cases present with epistaxis and nasal obstruction. Rhinosporidiosis is rarely fatal. Hemorrhagic and disseminated rhinosporidiosis otherwise called malignant rhinosporidiosis may lead to death. The most successful treatment reported is surgical excision with cauterization of base by diathermy.

METHODS

It was a prospective study carried out from January 2016 –December 2017 in the department of ENT in Kanyakumari Medical College. This series included 50 subjects with a clinical and histopathological diagnosis of rhinosporidiosis treated at Kanyakumari Government Medical College. Inclusion criteria incudes all clinically diagnosed and histopathologically confirmed cases of rhinosporidiosis. Exclusion criteria include patients who are not willing for surgery.

A detailed history including age, sex, duration of symptoms, personal habits and area of residence was analysed. Particular focus was placed on bathing habits. Clinical examination and diagnostic nasal endoscopy were done to localize the site and extent of lesions in each case. All cases were provisionally diagnosed on a clinical basis. History of other medical or surgical illness also recorded. All routine hematological investigation including blood group of each patient were also done. All subjects were treated endoscopically by wide surgical excision and electrocautery of the base of the lesion under general or local anesthesia. Specimen was sent for histopathological examination.

RESULTS

A total of 50 cases were treated over a period of 2 years from January 2016–December 2017.

Table 1: Age-sex distribution.

Age	Male	Female
<10	2	0
11-20	7	5
21-30	6	3
31-40	9	1
41-50	5	1
51-60	6	1
61-70	3	0
>70	-	-

There were 38 males (76%) and 12 females (24%) in the study. Age distribution varies from 8 years to 70 years with predominance in 11–20 years age group. Among males 31–40 is the common age group while in females 11–20 is the common age group as shown in Table 1.

Commonest presentation is epistaxis (80%) followed by nasal obstruction (60%), anosmia (16%), oral bleeding (8%).

Table 2: Presentation of rhinosporidiosis.

Symptoms	Percentage (%)
Epistaxis	80
Nasal obstruction	60
Anosmia	16
Oral bleeding	8

Analysis of blood group of all patients reveal O positive, B positive, AB positive, A positive and O negative in 40%, 36%, 10%, 10%, 4% respectively.

Table 3: Analysis of blood group.

Blood group	Percentage (%)
O+	40
B+	36
AB+	10
A+	10
O-	4

Among the 50 cases, 22% have multiple attachments where 78% cases have single attachment. All the cases with multiple attachments are recurrent cases.

Commonest site of attachment is left nasal cavity 18 (36%), right nasal cavity 10 (20%), nasopharynx 6 (12%), both nasal cavities 8 (16%), oropharynx 3 (6%), supraglottis 1 (2%), sphenoethmoid region 1 (2%), nasolacrimal duct (2%), nasolacrimal sac 1 (2%), larynx 1(2%). Out of 35 patients with Rhinosporidiosis in nasal cavity, common site of attachment is nasal septum 12(35%), floor 10(28%) and lateral nasal wall 13(37%).

Table 4: Site of attachment in nasal cavities.

Site of attachment	Percentage (%)
Lateral nasal wall	37
Nasal septum	35
Floor	28

DISCUSSION

Rhinosporidiosis Seeberi is a member of the phygomycetes class of fungi.[8] It was first reported by Malbran 1892 described as a protozoan by Seeberi in Argentina 1900 and is phygomycetes by Ashworth 1923.[9] In India the highest incidence is seen in coastal areas especially Tamil Nadu, West Bengal and South Kerala. In

Tamil Nadu it is common in Thanjavur and Kanyakumari districts. Comparison was done between total cases and duration of study from various authors in Table 4. Of which our study is for 2 years and the cases include 50 members. David et al reported 100 cases in 2 year study, Makannavar et al reported 34 cases in 11.5 years.[4,10]

Table 5: Frequency of disease.

Author	Total cases	Duration of study in years
Kutty et al (Kozhikode)[10]	52	10
David (Thirunelveli)[4]	100	2
Dube and Veliath (Mangalore)[11]	27	7
Das et al (West Bengal)[12]	57	12
Makannavar et al (Karnataka)[13]	34	11.5
Ahmed et al (Malapuram)[14]	54	3.5
Kalyani et al (Thiruvarur)[15]	25	1
Our study (Kanyakumari)	50	2

Table 6: Age wise distribution of cases.

Authors	0-10 yrs	11-20 yrs	21-30 yrs	31-50 yrs	Above 50 yrs	Total
Ahmed et al[14]	-	12	24	14	4	54
Guru et al[8]	10	81	91	53	7	242
Kalyani et al[15]	4	8	4	6	3	25
Our study	22	12	9	16	11	50

Table 7: Sex preponderance.

Authors	Male	Female	Total
Guru et al[8]	168	74	242
Ahmed et al[14]	39	15	54
Our study	38	12	50

In our study the common age group involved is between 11-20 years. Ahmed et al and Guru et al reported cases between 21-30 years of age group. Kalyani et al reported cases between 11-20 yrs age group.

In our study 3:1 male preponderance is seen. Ahmed et al and Guru et al also reported male preponderance.[8,14]

In our study sex ratio is 3:1, Nazia et al reported 2.6:1, Chitravel et al reported 4:1-9:1.[14,16] The fact that males have more chance of animal contact, more frequent pond baths leads to greater male prevalence. In our study 100% cases has history of bathing in ponds. Rhinosporidiosis is limited to surface epithelium of nasal mucosa but rarely wide dissemination with cutaneous or visceral involvement can occur.[17] Various authors has reported common site of attachment in nasal cavities as nasal septum. In our study common site of attachment is lateral nasal wall accounting for 37% of cases followed by35% in septum and 28% in floor. The blood group related data shows common distribution among O positive, which is concurrence with various other studies. Manonmany reported common distribution in B positive cases.[7]

In our study the common symptom is epistaxis accounting for 80% followed by nasal obstruction. The nasal lesion usually starts as a small papule that grows into a polypoidal mass causing obstruction of the nose. Cutaneous lesion often starts as a friable papilloma that become pedunculated.[18] Several modes of spread has been postulated for cutaneous rhinosporidiosis like direct inoculation or autoinoculation through traumatized epithelium and subsequent hemato-lymphoid spread. Disseminated cutaneous rhinosporidiosis with nasopharyngeal involvement has been reported by some authors. In our study one case has cutaneous spread to left upper limb with laryngeal involvement. One patient has lacrimal sac involvement and 2 cases have nasopharyngeal and 3 cases has oropharyngeal involvement. All extra nasal cases are recurrent cases. In spite of recognition, rhinosporidiosis remains high risk of recurrence and occasional wide spread with fatal complication. Surgical removal and electro dissecation remain the cornerstone of therapy.[18,19]

CONCLUSION

The study is presented to highlight the higher incidence and endemicity of rhinosporidiosis among nasal masses in Kanyakumari district of Tamil Nadu. Health awareness among common people for prevention, avoidance of bathing in ponds, early diagnosis, treatment with electrocautery, helps in decreasing the incidence of this disease. Extra nasal spread is most common in recurrent cases.

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