Case Report

Case study of Rhinosporidiosis in tertiary care centre

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Abstract

Rhinosporidiosis is a chronic granulomatous inflammation caused by Rhinosporidium seeberi which is endemic in India but also reported in other parts of the world. A study was done at Department of Pathology, Government Thiruvarur Medical College, Thiruvarur district from Jan 2015 to Dec 2015. The case study included 65 cases of nasal mass.of these 65 cases, 25 cases were reported as rhinosporidiosis by HandE stained section. Special stains like GMS and PAS were done.

Keywords: Rhinosporidiosis, nasal mass, special stain, Thiruvarur district.

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INTRODUCTION

Rhinosporidiosis is a chronic granulomatous inflammation commonly affecting the mucous membrane of nose, nasopharynx and eye[1].other rare sites include lips, palate, uvula, conjunctiva, skin, larynx, trachea, penis, vagina and bone 2. The causative organism is Rhinosporidium seeberi, first described in 1900 by Guillermo seeberi 3. Majority of cases are reported in India and srilanka 4. Mode of spread is from dust and stagnant water sources like wells, ponds and tanks in endemic areas1. Most cases presented as nasal obstruction and epistaxis due to the friable polypoid mass in the nasal cavity 5. In our country certain parts like Thanjavur, Madurai, Kanyakumari of Tamil Nadu, Allepey, Kottayam, Trivandrum districts of kerala are endemic to rhinosporidiosis. Here we are presenting the incidence of rhinosporidiosis in Thiruvarur district.

MATERIALS AND METHODS

A retrspective study was done for one year from Jan 2015 to Dec 2015 in the Department of Pathology, Government Thiruvarur Medical College, Thiruvarur district. The biopsy samples were received from the department of surgery and ENT of the Government thiruvarur medical college. A histopathological study of 65 cases with nasal masses were done. of these 65 cases,25 cases were diagnosed as rhinosporidiosis. The cases were diagnosed on H and E stained section. special stains like GMS and PAS were also done. Relevant clinical details and laboratory investigations were collected from the hospitals.

RESULTS

During the one year of study, rhinosporidiosis accounted for 38.5 % of all nasal masses in our institution. All cases were confirmed histopathologically. Patients presented with symptoms of nasal obstruction. Age of the patients included in this study ranged from 4yrs to 60yrs. The disease presented commonly in 2nd decade 32% followed by 1st and 3rd decade with 16% each. There were 14 males 56% and 11 females 44% with M: F ratio of 1.3:1 having male preponderence.

Table 1: Nasal masses

Sr. No.	Nasal Masses	No of Cases	Percentage
1	Allergic nasal polyp	28	43.08%
2	Rhinosporidiosis	25	38.5%
3	Aspergillus infection	2	3.08%
4	Mucor	1	1.53%

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5	Lobular capillary hemangioma	1	1.53%
6	Rhinoscleroma	4	6.155
7	Hemangiopericytoma	1	1.53%
8	Inverted papilloma	2	3.08%
9	Squamous cell carcinoma	1	1.53%

Table 2: Sex distribution

Male	Female
14 [56%]	11[44%]

Table 3: Age wise distribution in decades

Decades	No of cases	Percentage
1ST	4	16%
2ND	8	32%
3RD	4	16%
4TH	3	12%
5TH	3	12%
6TH	3	12%

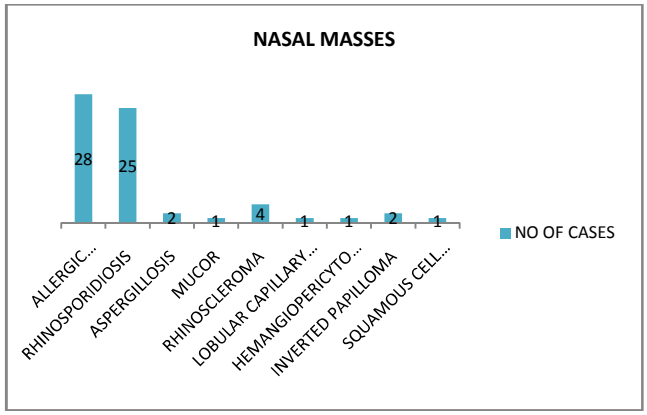


Figure 1: Nasal masses

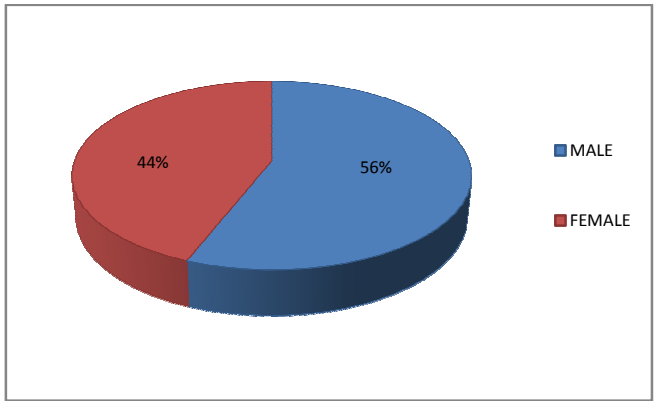


Figure 2: Sex distribution

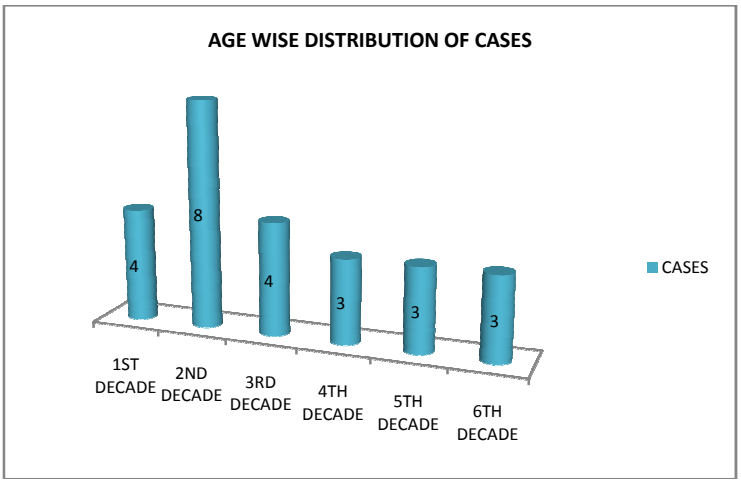


Figure 3: Age wise distribution of cases

DISCUSSION

Rhinosporidiosis seeberi is a member of the phycomycetes class of fungi2. It was first reported by Malbran 1892 described as a protozoan by Guellermo seeberi in Argentina1900 and as phycomycetes by Ashworth 1923.[6,7] Finally it was placed in mesomycetozoa(group related to fish pathogen) by Heer *et al* in 1999. [8]reconfirmed by Friedericks *et al* in 2000.[9] In India the highest incidence is seen in costal areas especially Tamilnadu and also West Bengal.[10,11] in this study, among 65 nasal masses, 25 cases (38.5%) were rhinosporodiosis. Global distribution of rhinosporidiosis in different continents was published in 1949is is in table 4. TABLE 4[12]:

Continent	cases
Africa	12
America	50
Europe	3
Asia	377
India	233
Total	**422**

Comparison done between total cases and duration of study from various authors in table 5. Of which our study is for 1 year and the cases include 25 nos. David *et al* reported 100 cases in 2 years study, Makannavar *et al* reported 34 cases in 11.5 years. Table 5.[13,14,15,16,17,1]

Author	Total cases	Duration of study in years
Kutty *et al*(Kozhikode)(1963)	52	10
David SS(Tirunelveli)(1969)	100	2
Dube and Veliath(Mangalore)(1964)	27	7
Das *et al*(West bengal)(1964)	57	12
Makannavar *et al*(Karnataka)(1998)	34	11.5
Ahmed *et al* (Malappuram)(2012)	54	3.5
Our study (Thiruvarur)(2016)	25	1

In our study the common age group involved is between 11 to 20 yrs. Ahmed *et al* and Ranjan kumar guru *et al* reported cases between 21 to 30 years of age group.

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*	-	12	24	14	4	54
Ranjan kumar guru *et al*	10	81	91	53	7	242
Our study	4	8	4	6	3	25

In this study, slight male preponderance is seen. Ahmed *et al* and Ranjan kumar guru *et al* also reported male preponderance. comparision between sex preponderance in various studies done in table 7.

Table 7:

Authors	Male	female	Total
Ranjan kumar guru *et al*	168	74	242
Ahmed *et al*	39	15	54
Our study	14	11	25

Thus the sex ratio is 1.3:1 in this study. Nazia *et al* reported 2.6:1, chitravel *et al*[18] reported 4:1 to 9:1.The fact that females have less chance of animal contact, less frequent pond baths leads to lesser female prevalence. some authors thought that effect of estrogen in female provides protection from the disease.[1] Rhinosporidiosis is limited to surface epithelium of nasal mucosa but rarely wide dissemination with cutaneous or visceral involvement can occur.[19,20] The common symptom is nasal mass and 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 start as a friable papilloma that become pedunculated.[21] Histopathologically many round thick walled cysts (sporangia) up to 0-5mm in dia with endospores (6-7µ in dia) in different stages of maturation is present. The surrounding tissue has inflammatory reaction. These spores are positive for PAS (Periodic acid Schiff) and GMS (Gomoris methanamine silver) stain. In cytology 10% KOH and pap stains are used.[22] in our study PAS and GMS stains are used to stain the spores. Several modes of spread have been postulated for cutaneous rhinosporidiosis like direct inoculation or auto innoculation through traumatized epithelium and subsequent hematolymphoid spread. [23]Disseminated cutaneous rhinosporidiosis with nasopharyngeal involvement has been reported by some authors.[19,20,23,24] Inspite of recognition, rhinosporidiosis remains high risk of recurrence and occasional widespread with fatal complications.[25]surgical removal and electrodessication remain the cornerstone of therapy.[23,26]Dapsone has been found to have antirhinosporidial effect by arresting the maturation of the sporangia and promoting fibrosis in the stroma.[27]

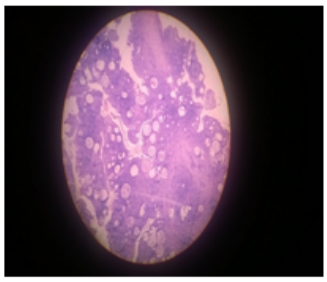
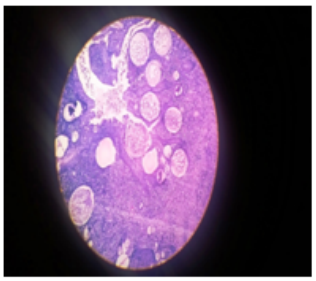


Figure 4



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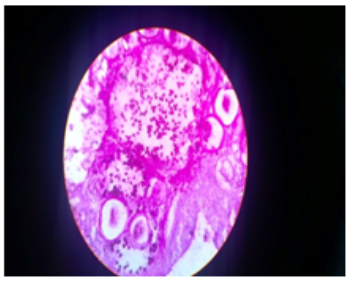

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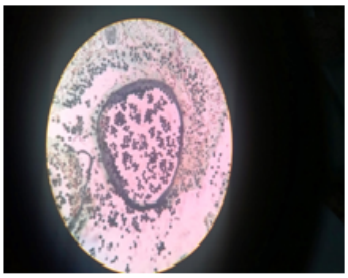

Figure 7

Legend

Figure 4: Scanner view (5x) of Rhinosporidiosis showing sporangium in the epithelium

Figure 5: Low power view (10x) of Rhinosporidiosis sporangium

Figure 6: Rhinosporidiosis sporangium stained by PAS (PERIODIC ACID SCHIFF) stain.

Figure 7: Rhinosporidiosis sporangium stained by GMS (GOMORI'S METHANAMINE SILVER) stain

CONCLUSION

The case study is presented to highlight the higher incidence and endemicity of rhinosporidiosis among nasal masses in Thiruvarur district and health awareness among common people for prevention, early diagnosis, treatment and decreasing reccurence rate after surgery of this disease.

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