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Original Research Article

A study on clinicopathological evaluation of rhinosporidiosis

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ABSTRACT

Background: Rhinosporidiosis is a chronic granulomatous disease. Aim of the study was to do a clinicopathological evaluation of the cases of rhinosporidiosis. Study design was longitudinal.
Methods: The study was undertaken in MKCG medical college. 151 cases of rhinosporidiosis were taken. Pedunculated or sessile, fleshy, polypoidal, reddish looking mass with spores on the surface were clinically diagnosed as rhinosporidiosis. Age, sex distribution, site of presentation and socioeconomic status was studied. The swellings of lacrimal sac were doughy in consistency. The conjunctival mass was excised and thermocautery applied. For the cases of lacrimal sac dacryocystectomy was done.
Results: The cases were more common in male children of low socioeconomic status. Palpebral conjunctiva is the common site of involvement. History of pond bath was present in almost all the cases. History of bleeding from nose and eye was present in many cases.
Conclusions: Rhinosporidiosis is a common condition of our locality. Treatment is simple by excising the growth and cauterising the site. Taking bath in pond water is supposed to be the cause of the disease. The disease can be prevented by avoiding pond bath.

Keywords: Conjunctival, Dacryocystectomy, Excision, Granulomatous, Histopathology, Pedunculated, Sessile, Polypoidal, Rhinosporidiosis, Thermocautery

INTRODUCTION

Rhinosporidiosis is a chronic granulomatous disease characterised by development of friable polyps usually confined to nose, eye, mouth, rarely on genitalia or other mucous membrane. The causative organism is rhinosporidium seeberi.[1] It is seen in unhygienic stagnant pond water.[2]

The disease is very common in rural areas who take pond bath. Taxonomic position of this organism is uncertain. There are doubts whether it can be a fungus.[3] The common sites of ocular affection are palpebral conjunctiva, bulbar conjunctiva, fornices and lacrimal sac.[4]

The first case of rhinosporidiosis was described as a nasal polyp by Guillermo Seber from Buenes aeris in 1900. Though sporadic cases of rhinosporidiosis are reported from all over the world, more than 90% are reported from India, Srilanka, Pakistan. Apart from human infections-cattle, buffalo, dogs, cats, horses, mules, several species of ducks and swans are also affected.

Rare sites of involvement are lips palate, uvula, maxillary antrum, epiglottis, larynx, trachea, bronchus, ear, scalp,

vulva, penis, rectum and skin.[5] Complain of the cases include, growth, irritation, frequent watering from eye. there was also combination of complain like irritation, lacrimation, congestion and swelling. there can be growth at multiple sites - nose and nasopharynx, nose and skin, nose and lacrimal sac, nose and antrum nose and eye, eye and skin. eye and larimal sac.

METHODS

A study was undertaken in MKCG medical college from January 2015 to December 2016. 151 cases of rhinospreoridiosis were taken. Pedunculated or sessile fleshy, polypoidal, reddish looking mass of conjunctiva with spores on the surface were clinically diagnosed as rhinosporidiosis. The swellings of lacrimal sac were doughy in consistency.

The conjunctival mass was examined under slit lamp. Detail anterior segment and posterior segment examination was done and visual acuity was recorded. History was taken regarding pond bath and bleeding from eye and nose. The conjunctival mass was excised under topical/local anaesthesia. Following excision heat cautery was applied. In case of rhinosporidiosis of lacrimal sac dacrycystectomy was done under local anaesthesia/GA. During the procedure bleeding was difficult to control. The mass was sent for histopathological study. Diagnosis was confirmed. In current study, the growth was confined to one site only.

RESULTS

Table 1: Age of occurrence.

Age of occurrence	No. of cases	Percentage
0-10 years	95	63
11-20 years	37	25
21-30 years	7	4
31-40 years	10	7
41-50 years	2	1

The disease is more common in children around (0-10) years of age (63%). 25% of cases occur in the age group of 11-20 years. 4% of cases occur in the age group of 21-30 years. 7% of cases in 31 to 40 years. 1% in 41 to 50 years.

Table 2: Sex ratio.

Sex	No. of cases	Percentage
Male	103	68
Female	48	32

Males are more commonly affected (68%), 32% in case of females. Rhinisporidiosis is more common in low socioeconomic status. 67% in poor socioeconomic status. 31% in average status. Only 2% in high socioeconomic status.

The disease is more common in palpebral 47% and bulbar conjunctiva 47%. Forneceal conjunctiva 3% and lacrimal sac 3%. History of pond bath was present in all the cases. In 30 cases history of bleeding from eyes and nose was present.

Table 3: Laterality.

Laterality	No. of cases	Percentage
Unilateral	148	98
Bilateral	3	2

Mostly the lesions are unilateral 98%. Only 2% cases are bilateral.

Table 4: Socioeconomic status.

Social status	No. of cases	Percentage
Poor	101	67
Average	47	31
High	3	2

Rhinisporidiosis is more common in low socioeconomic status. 67% in poor socioeconomic status. 31% in average status. Only 2% in high socioeconomic status.

Table 5: Location of the mass.

Location of mass	No. of cases	Percentage
Palpebral conj	71	47
Bulbar conj	70	47
Forneceal conj	5	3
Lacrimal sac	5	3

After 6 months 2 cases of rhinosporidiosis of lacrimal sac had recurrence. Out of the 2 cases one case had a growth from nose also. The patient was referred to ENT department. In the other case excision of the growth with betadine wash and heat cautery was applied.

DISCUSSION

Rhinosporidiosis is a common condition frequently affecting young children. The most common presentation is a red, soft, polypoidal, fleshy strawberry like granuloma.[6] The infected lacrimal sac has a soft boggy feel and is quite large, around 4 cm. the lesion lies diffusely. Pressure over the sac does not empty it. The sac feels like a bag of worms. In present study, the incidence of the disease is 0.2% 9 (out of 69000 opd patients 151 cases of rhinosporidiosis).

In the study conducted by Subramayam S, the incidence of the disease was 0.1%.[7] In a study conducted by Anand et al the incidence of the disease was 0.1%.[8] the incidence in our locality is high may be because of more pond bath habits. In present study, the common age group affected are children (63%) below 10-years age. Mostly the cases are unilateral (98%). Male children are more commonly

affected. Most of the growth are from palpebral (47%) and bulbar conjunctiva (47%).

Figure 1: Rhinosporidosis of palpebral conjunctiva.

The mature spore of the causative organism rhinosporidium seeberi is 8-9 micron in diameter. It contains sporangia which may reach the size of 300 micron. Several sporangia in different stages of evolution are seen in the lesion. On the surface of the lesion when fully formed the sporangia is seen like a pinhead sized slightly elevated yellowish pink nodular lesion. Many such on the surface give it a strawberry like lesion which is very characteristic.

Figure 2: Rhinosporidiosis of lacrimal sac.

The granulation tissue contains plasma cells, lymphocytes, focal collection of histiocytes and neutrophils. Sporangia are located predominantly in the stroma of mucosal polyp. The largest sporangia are in the subepithelial lesion. Rupture of the sporangia produces seeding of the spores into the tissues. Ruptured sporangia may induce a foreign body reaction. The size of the globular sporangia depends on the stage of maturation. They spread by lymphatics.

In india the disease is more common in southern states. A few cases are reported from Punjab and Haryana. the disease is seen to involve animals such as cows, bulls, horse, mules and dogs, where man and animals share the same infected pond.[9]

The fungus has not been grown in any other culture medium or a laboratory animal. The reservoir of infection is horse and cattle. The site of infection in animals is anterior nares. The pond water gets contaminated by infected animals. Direct man to man transmission is not known.

Figure 3: Rhinosporidiosis mass.

Hot tropical climate has been found to be most suitable environment for this organism. It is hyperendemic in Srilanka and Southern India. Trans epithelial infection, which is infection via traumatised epithelium has been proposed as a potable mode of infection.it occurs from natural aquatic environment of this organism. A detail history of bath taking in pond and occupational exposure to stagnant water help to clinch the clinical diagnosis. Histopathological examination of the excised mass confirms it.[10]

Figure 4: The mass along with lacrimal sac was removed. Wounds closed.

Rhinosporidiosis lesions may be confused with other fungal lesions in cytology as well as histology. Subrata et all, suggests that definite treatment is surgical excision combined with electrocoagulation. Antibacterial and antifungal drugs are not effective.[11]

WAE- karunaratne states the first reported case of female rhinosporidiosis in different countries. in 1924 Tirumati reported the first case of rhinosporidiosis in female in india with frequent recurrence of growth in nose. The following year Denti described a case in eye of an Italian

woman from Lombardy. in 1933 Karunaratna et all noticed 2 female cases in Ceylon. Warthin in 1930 observed an organism resembling rhinosporidium in the tonsillar crypt of a women in us. the first undisputed case of rhinosporidiosis inus was reported by Ruchman in 1939 in nose of an Austrian woman long resident there. in the same year Habibi described a case in Iran. In 1942 occurrence of the disease was reported in three different countries, in Cuba, Brazil and Argentina.

The first case in Africa was reported in a native of Uganda by Boase in 1941. In present study, the incidence of male is higher. In nasal rhinosporidiosis the common complaint was difficulty in breathing. in others, it was bleeding from nose. in a few cases it was discharge from nose. The discharge was usually blood stained, may be watery or mucous or offensive.

In ocular rhinosporidiosis the complaint was presence of growth, flow of tears, congestion. history of injury was present in some cases. In the study of Karunaratna et all the highest incidence rate was there in the age group of 10-15 years, about30% of cases. the character of bleeding was frequent and severe in 2-3 cases. slight and occasional in few cases. in few cases discharge was only blood stained. In a study conducted by CMC velore, India in 1958 reports are there from multiple sites nose and nasopharynx in 9 males, nose and lacrimal sac in three males, nose and antrum in a female.[12]

CONCLUSION

Rhinosporidiosis is a common health problem prevailing in rural areas. Persons taking bath in stagnant water reserve like ponds are most commonly affected. Excision of conjunctival mass with thermocautery surrounding the mass was effective treatment. There was no recurrence. Rhinosporidiosis of lacrimal sac were difficult cases with high recurrence rate. Avoiding pond water bath can prevent the disease.

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