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Nasal Rhinosporidiosis: A Case Report

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Abstract:
Rhinosporidiosis is a chronic granulomatous disease affecting the mucous membrane of mostly the nasopharynx and oropharynx and less commonly the conjunctiva and external genitalia. It is caused by Rhinosporidium seeberi which was previously considered to be a fungus. However, recent molecular studies have placed it in a novel group of aquatic parasites of the class Mesomycetozoea.We reported a 55 year old, agriculturist who suffered with chronic nasal obstruction and epistaxis since 1 yr. On diagnostic nasal endoscopy, a strawberry like friable mass in left nostril, attached to the septum was seen. A 10% KOH under 40 x magnifications showed several sporangia of various sizes containing numerous sporangiospores suggestive of rhinosporidiosis.

Key words*: Rhinosporidium seeberi, sporangiospores, Mesomycetozoea*

1. Aim and Objectives
To study the granulomatous infection of the nose and its pathology.

2. Materials and Methods
The biopsy sample was obtained from the nasal polyp and staining was done. Different stains as Gomori methenamine silver (GMS), Periodic acid-Schiff (PAS), as well as standard haematoxylin and eosin (H&E) staining were used. 10% KOH mount was made and was observed under 10x and 40x magnifications in light microscope.

3. Introduction
Rhinosporidiosis is a chronic mucocutaneous granulomatous infection which is characterised as large wart like tumours highly vascularised, pedunculate, friable which bleedson touch.(Thankmani V & Lipin Dev M.S, 2012.).It is caused by Rhinosporidium seeberi which is now taxonomically endosporulating protist and now after molecular studies it has been considered to be a hydrophilic protistan parasite of class Mesomycetozoea.It is endemic in India, Sri Lanka, Bangladesh, South America and Africa. Cases from United States and Southeast Asia as well as scattered occurrences throughout the world, have also been reported. Most cases of rhinosporidiosis occur in persons residing in the Indian subcontinent or Sri Lanka.
The commonest route of infection is water borne transmission,occurring mostly in farmersand country dwellers and is thought to be due to bathing in infected ponds which are used to bathe animals like cattle, horses etc. There is no barrier for any race. Men are affected more commonly than women with a ratio of 4:1(Jadish Chandra 3rd edition, 2009)
The disease is associated with hyperplastic growth of host tissue and a localized immune response. Infection of the nose and nasopharynx is seen in 70% cases of rhinosporidiosis whereas the infection of palpebral conjunctiva or associated structures is seen in 15% cases.Rhinosporidiosis can cause prolonged painless disease with limited morbidity. Larynx, trachea, skin and lung are less frequently involved. Osteolytic bone infiltration is another clinical presentation. Generalized rhinosporidiosis with skin and visceral involvement is extremely rare (Duane R Hospenthal, 2012)
The biological agent has a mature stage that consists of large, thick-walled spherical structures called as sporangia containing smaller "daughter cells", called as “sporangiospores” and it can be visualized with fungal stains as Gomori methenamine silver (GMS) and Periodic acid-Schiff (PAS), as well as with standard haematoxylin and eosin (H&E) staining. (Kumari R et al, 2005).

The only curative approach of rhinosporidiosis is surgical excision combined with electro cauterisation. There is no demonstrated efficacy in using antifungal or antimicrobial drugs. Recurrence, dissemination in anatomical close sites and local secondary bacterial infections are the most frequent complications.

4. Case Report

A 55 year old male patient came with the complaints of chronic nasal obstruction and occasional epistaxis since 1 year to the outpatient department of Shadan Hospital. The patient is a farmer by profession, residing in the rural outskirts of the city.He bathes in the pond nearhis house.He has no co-morbid conditions.

On examination a mass was noticed in the left nostril. A single reddish coloured pedunculated polyp was seen. On diagnostic nasal endoscopy showed a strawberry like friable vascular mass in the left nostril, attached to the septum.

A CT scan showed an anterior mass, with clearly demarcated borders. There was no invasion of surrounding tissues.

On histopathological examination the section of tissue biopsy showed polypoidal mucosal folds lined by stratified squamous epithelium. There were extensive inflammatory infiltrates with patchy stromal edema. There were many spherical sporangia of varying sizes in different stages of development containing granular debris and many spores (fig. 1 and 2). They showed thick hyaline cell wall. A focal ulceration covered by neutrophilic exudate was also seen.

A wet mount was prepared in 10%KOH (Fig. 3) and observed under 40 x magnifications. It revealed the presence of several spherical sporangia of various sizes containing numerous sporangiospores, suggestive of rhinosporidiosis.

Complete local surgical excision of the mass with electro cauterisation was done.

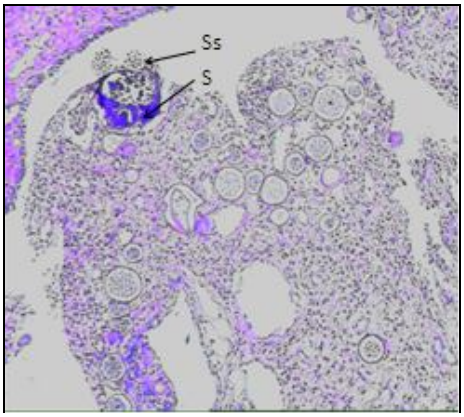

Figure 1: Haematoxylin and eosin stained slide showing Sporangia(S) with numerous sporangiospores(Ss).(magnification : 10x)

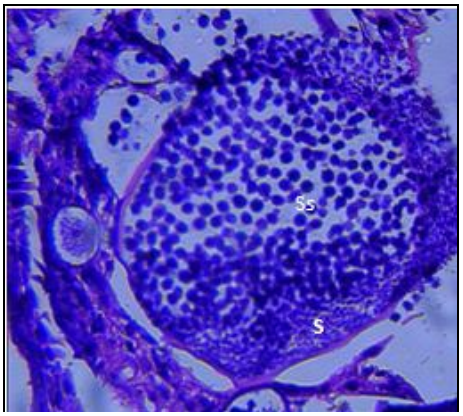

Figure 2: Haematoxylin and eosin stained slide showing Sporangia(S) with numerous sporangiospores(Ss).(magnification : 40x)

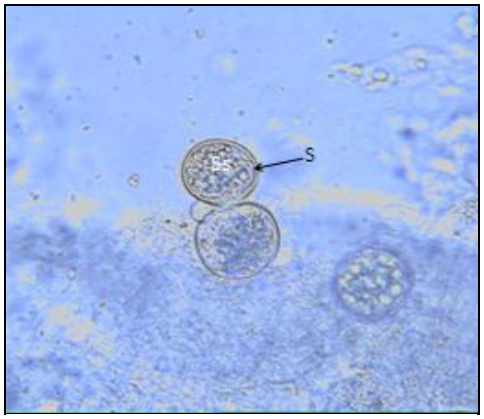

Figure 3: 10% KOH showing Sporangia (S) Containing numerous sporangiospores

5. Discussion

A case reported by Luca Morelli et al showed that a 26 year old male patient from India with nasal obstruction since 3 months had an erythematous, papillomatous mass obstructing right nasal cavity. On histopathological examination lesion showed a polypoidal fibro connective stroma with double layered stratified squamous epithelium containing many globular cysts. These cysts had a thick walled sporangium containing many sporangia in different developmental stages, suggestive of rhinosporidiosis.(Luca Morelli et al 2006)

Another study done by Thankamani V et al isolated rhinosporidium from biopsies taken from clinically diagnosed and histopathologically confirmed rhinosporidiosis as on using special stains the microscopic picture showed small spore like bodies, sporangia, germination and formation of spores, multi-layered walls around sporangia are seen.(Thankamani V 2005)

The present study revealed in a 55 yr old male patient with complaints of nasal obstruction and occasional epistaxis. His histopathological examination revealedthe section of tissue biopsy showed polypoidal mucosal folds lined by stratified squamous epithelium. There were many spherical sporangia of varying sizes in different stages of development containing granular debris and many spores. They showed thick hyaline cell wall and a focal ulceration covered by neutrophilic exudate was seen. A wet mount was prepared in 10%KOH and observed under 40 x magnifications. It revealed the presence of several spherical sporangia of various sizes containing numerous sporangiospores, suggestive of rhinosporidiosis.

Rhinosporidiosis remains largely endemic in the Indian sub-continent. The mode of transmission is direct contact with spores through dust, soil or prolonged exposure to stagnant water. Our patient has a history of bathing in ponds, his probable source of infection.Patient presented with a history of gradually growing nasal mass, occasional epistaxis, nasal itching, and sneezing and even post nasal drip.

6. Conclusion

Nasal rhinosporidiosis continues to be a seldom suspected and seldom diagnosed disease in India. However,with reports of sporadic cases from all over the country. It is now imperative for clinicians and pathologists to consider rhinosporidiosis as a differential diagnosis when evaluating patients presenting with nasal growth and chronic epistaxis from endemic areas. Even the patient should be followed up after the surgery in order to trace an eventual recurrence of the lesion.

7. References

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