

Case Report

Ocular rhinosporidiosis: a case report from Delhi

Neelam Sood¹, MC Agarwal², Harish C. Gugnani³

¹Department of Pathology, Deen Dayal Upadhyay Hospital (DDUH), Delhi, India

²Department of Ophthalmology, Deen Dayal Upadhyay Hospital (DDUH), Delhi, India

³Windsor University School of Medicine, St. Kitts (WI), and Visiting Consultant in Medical Mycology, DDUH, Delhi, India

Abstract

Rhinosporidiosis caused by *Rhinosporidium seeberii*, a protistal microorganism, is endemic in several parts of India. Infection involves mucous membranes of the nose and paranasal sinuses and usually manifests as vascular friable polyps. A few cases of rhinosporidiosis have been reported from Delhi, in patients who were migrants from other states. The present case constitutes the first report of rhinosporidiosis in a Delhi resident; the lesion occurred as polypoidal mass of the palpebral conjunctiva.

Key words: ocular rhinosporidiosis; polypoidal granuloma; palpebral conjunctiva; Delhi

J Infect Dev Ctries 2012; 6(11):825-827.

(Received 14 November 2011 – Accepted 02 February 2012)

Copyright © 2012 Sood *et al.* This is an open-access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction

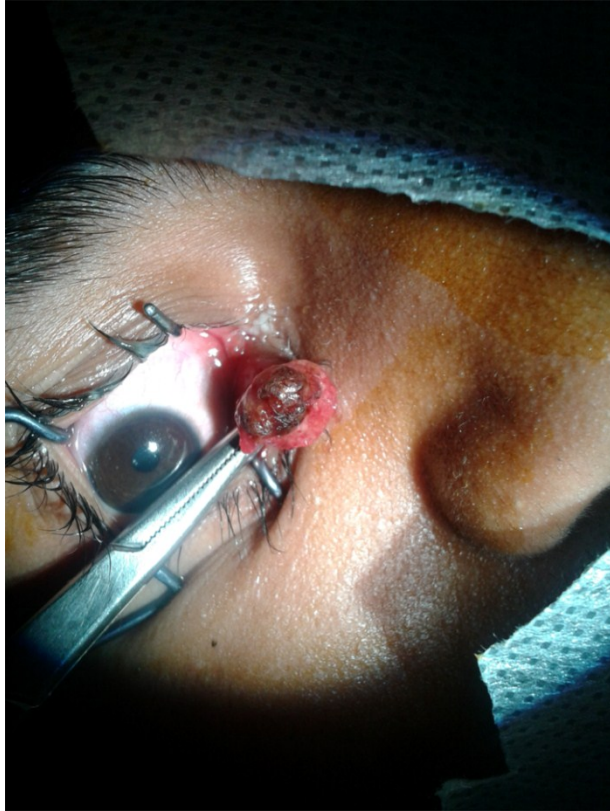
Rhinosporidiosis is a chronic localized granulomatous infection commonly involving the mucous membranes of the nose and paranasal sinuses that usually manifests as vascular friable polyps. About 15% of the cases have ocular involvement [1]. The disease is worldwide in distribution with its occurrence recorded in about 70 countries [2]. The disease is hyperendemic in Sri Lanka and India [1,2]. The causal organism, *Rhinosporidium seeberii* [3], initially thought to be a parasite for more than 50 years, was later considered to be a water mold. Molecular biological techniques have recently demonstrated that this organism is an aquatic protistan parasitic microbe, and it has been classified in a new clade, the Mesomycetozoa, along with 10 other parasitic and saprobic microbes [1,3]. Infection is presumably acquired from an aquatic habitat of the fungus through traumatized epithelium, most commonly in the nasal site. It is supposedly more common in those who dive or swim in stagnant water, and also in those who dig earth on riverbeds [1]. Infection can spread in the body by lymphatic and hematogenous routes to distant sites [1,3]. Numerous cases have been reported from southern, eastern and central parts of India [4-9]. Capoor *et al.* [10] reported from Delhi three cases of the diseases including one each with sino-nasopharyngeal, nasopharyngeal and

nasal involvement; the patients were migrants from other states. Three more cases of nasal and sino-nasopharyngeal rhinosporidiosis were reported from Delhi by Das *et al.* [11]; these patients were also migrants from other states, two from Bihar and one from Uttar Pradesh. Another case of ocular rhinosporidiosis reported from Delhi was, in fact, a 11-year-old male child, from the Western part of a neighbouring state, Uttar Pradesh [12]. The present report of ocular rhinosporidiosis constitutes the first known case of rhinosporidiosis in a resident of Delhi, with no history of travel to any of the areas endemic for the disease in India or elsewhere.

Case Report

A 15-year-old male resident of Delhi presented with complaints of irritation and a gradually increasing mass in the right eye for the past five months. No history of visual loss was elicited. On examination a polypoidal, freely mobile mass covered with slough was noted at the palpebral conjunctiva of the right eye, measuring approximately 1.5 cm (Figure 1). The lacrimal opening and duct were unremarkable and there was no ocular discharge. There was no cervical or any other lymphadenopathy. Visual acuity was also unremarkable with no photophobia. The patient tested negative for HIV and he did not have any other immunodeficiency. Also on inquiry it was found that

Figure 1. A polypoidal mass in palpebral conjunctiva of the right eye



no other member of his family or of the community in the vicinity of his residence had any lesion suggestive of the disease. The lesion in the patient was excised under local anaesthesia by snipping the pedicel without any significant bleeding, and the specimen was submitted for histopathology with presumptive clinical diagnosis of pyogenic granuloma.

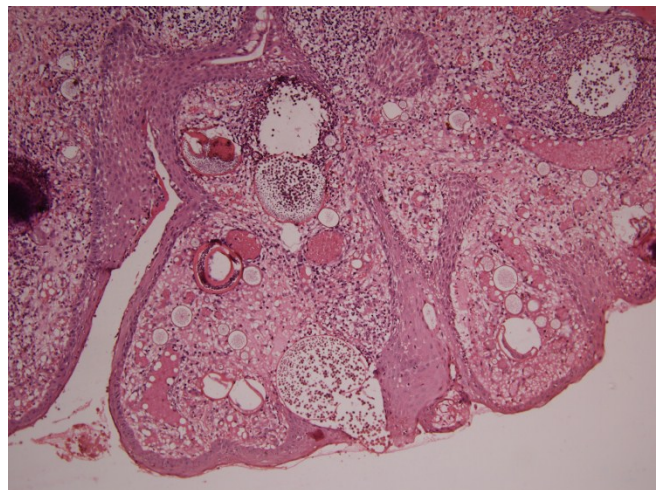
Microscopic examination of hematoxylin and eosin (H&E) stained tissue sections showed a polypoidal mass lined by keratinized squamous epithelium. The sub-epithelial zone was densely infiltrated by lymphocytes, plasma cells, and histiocytes. Numerous globular bodies ranging from young trophic forms to mature sporangia to folded empty sporangia were observed (Figure 2). Ruptured sporangia with trans-epithelial migration were also noticed. The diagnosis of ocular rhinosporidiosis was thus established.

When re-examined for any nasal/systemic involvement, the patient did not show any evidence of extraocular infection. The patient did not give any history of trauma or bathing in stagnant water nor had he travelled to any of the areas endemic for rhinosporidiosis in India or elsewhere. He has been on follow-up for the past nine months and has not shown any recurrence of the disease.

Discussion

Rhinosporidiosis is commonly found in South India with a very high incidence in Tamil Nadu [4,5], and in West Bengal [6,7] and Central India [8,9], as well as in other Asian countries, including Sri Lanka [1] and Nepal [1,2]. The disease is infrequently known in North India with only seven cases from Delhi [10-12], and these were migrants from other states. The present case is the first known indigenous case from Delhi. Nose, throat and ear are the commonest sites of involvement [1,3]. Ocular involvement has been reported in 9% to 14% of cases [1,3]. Ocular infections are seen in the lacrimal sac, conjunctiva, sclera and lids, in order of frequency. The typical lesions are soft, fleshy, vascular and polypoidal, as was observed in this case. Four unusual cases of conjunctival rhinosporidiosis with scleral melting resulting in the formation of staphyloma (a bulge or protrusion, through the tissue of the eyeball) have been recently reported from Tamil Nadu [13,14]. Systemic involvement may be seen in the form of warty friable lesions of skin, urethra, anus and penis [1]. A case of disseminated rhinosporidiosis with cutaneous, laryngeal and nasopharyngeal involvement has also been reported from India [15]. Another disseminated case of nasopharyngeal rhinosporidiosis in a 48-year-old man with a six-month history of six subcutaneous swellings on the body, and a five-year history of a pea-

Figure 2. Composite photomicrograph showing mature ruptured sporangium with spores, upper GMS x1000 spores, and wall staining black; lower right H&E x1000 showing pink chitinous wall and purple staining spores; lower left H&Ex1000 showing immature sporangiospores with bilamellar pink staining chitinous wall and bluish granules.



sized swelling on the inner aspect of the lower eyelid, a rarely known clinical presentation of the disease, has also been reported from Mumbai in Western India [16]. There are several reports of cases of ocular rhinosporidiosis from many parts of India [4,12,17-20], some of them dealing with large series of cases [17-19]. The majority of the cases of ocular rhinosporidiosis in India have involved the palpebral conjunctiva [3,11,17-19]. As many as 76 cases of ocular rhinosporidiosis have also been reported from Nepal [21]. These cases presented with polypoidal growth of the conjunctiva protruding through the palpebral aperture. An unusual mode of presentation of ocular rhinosporidiosis presenting as a huge conjunctival cystic mass has also been reported from Nepal [22]. The only known case of ocular rhinosporidiosis reported from Delhi was in fact observed in a resident of the Western part of the neighbouring state, Uttar Pradesh [12]. The present case involving palpebral conjunctiva constitutes the first indigenous case of ocular rhinosporidiosis from Delhi. Incidentally, it is also the first known case of rhinosporidiosis in Delhi.

In conclusion, this case report emphasizes that health professionals and microbiologists must have greater awareness and surveillance for cases of rhinosporidiosis even in non-endemic areas, such as Delhi. The identified cases should be adequately monitored to exclude the possibility of recurrence, and to decide the best treatment for the disease.

References

- Arseculeratne SN (2002) Recent advances in rhinosporidiosis and *Rhinosporidium seeberi*. *Indian J Med Microbiol* 20: 119-131.
- Arseculeratne SN, Sumathipala S, Eriyagama NB (2010) Patterns of rhinosporidiosis in Sri Lanka: comparison with international data. *South Asian J Trop Med Pub Hlth* 41: 175-191.
- Arseculeratne SN (2005) Rhinosporidiosis: What is the cause? *Current opinion Infect Dis* 18: 113-118.
- Moses JS, Shanmugham A, Kingsly N, Vijayan JC, Balachandran C, Venkateswaren, Albert A (1988). Epidemiological survey of rhinosporidiosis in Kanyakumari district of Tamil Nadu. *Mycopathologia* 101: 177-179.
- Ratnakar C, Madhavan M, Sankaran V, Veliath AJ, Majumder NK, Rao VA (1992) Rhinosporidiosis in Pondicherry. *J Trop Med Hyg* 95: 280-283.
- Saha SN, Mondal AR, Bhera SP, Das S, Banerjee AP (1975) Rhinosporidial infection in West Bengal—a Calcutta based hospital study. *Indian J Otolaryngol, Head & Neck Surg* 53: 100-104.
- Ghosh AK, De Sarkar A, Bhaduri G, Datta A, Das A, Bandyopadhyay A (2004) Ocular rhinosporidiosis. *J Indian Med Assoc* 102: 732-64.
- Mittal R and Vemuganti G (2008) Ocular rhinosporidiosis in Central India. *AIOC Proceedings*: 65-68.
- Sudarshan V, Goal NK, Gamine R, Krishnan C (2007) Rhinosporidiosis in Raipur, Chhatisgarh, A report of 482 cases. *Indian J Path Microbiol* 50: 718-721.
- Capoor, MR, Khanna G, Batra RK, Nair D, Venketachalalm VP, Aggarwal, P (2009) Rhinosporidiosis in Delhi, north India: case series from a non-endemic area and mini-review. *Mycopathologia* 168: 89-94.
- Das S, Kashyap B, Barua M, Gupta N, Saha R, Vaid L, Banka A (2011) Nasal rhinosporidiosis in humans: new interpretations and a review of the literature of this enigmatic disease. *Med Mycol* 49: 311-315.
- Arora R, Ramachandran V, Raina U, Mehta DK (2001) Oculosporeidiosis in Northern India. *Indian Pediatrics* 38: 540-543.
- Casteino AM, Rao SK, Biswas J, Gopal L, Madhvan HN, Kumar SK (2000) Conjunctival rhinosporidiosis associated with scleral melting and staphyloma formation: diagnosis and management. *Cornea* 19: 30-33.
- Jacob P, Rose JS, Hoshing A, Chacko G (2011) Tectonic corneal graft for conjunctivalrhinosporidiosis with scleral melt. *Indian J Ophthalmol* 59: 251-253.
- Kaushal S, Mathur SR, Mallick SR, Ramam M (2011) Disseminated cutaneous, laryngeal, nasopharyngeal, and recurrent obstructive nasal rhinosporidiosis in an immunocompetent adult: a case report and review of literature. *Int J Dermatol* 50: 340-342.
- Madke B, Mahajan S, Kharkar V, Chikhalkar S, Khopkar U (2011) Disseminated cutaneous with nasopharyngeal rhinosporidiosis: Light microscopy changes following dapsone therapy. *Australas J Dermatol* 52: e4-6.
- Moses JS, Balachandran C, Sandhanam S, Ratnasamy N, Thanappan S, Rajaswar J, Moses D (1990) Ocular rhinosporidiosis in Tamil Nadu, India. *Mycopathologia* 111: 5-8.
- Kim RU, Agarwal P, Khazei HM (2009) Ocular and Adnexal rhinosporidiosis—A prospective Study. *AIOC Proceedings*, pp 402-403.
- Chowdhary RK, Behera S, Bhuyan D, Das G (2007) Oculosporeidiosis in a tertiary care hospital of western Orissa, India: A case series. *Indian J Ophthalmol* 55: 209-301.
- Parthasarthy R, Sen S, Khan M (2003) Conjunctival rhinosporidiosis. *J Indian Med Assoc* 10: 667-668.
- Shetha MP, Henning A, Parija SC (1998) Prevalence of rhinosporidiosis of the eye and its adnexa in Nepal. *Am J Trop Med Hyg* 59: 231-234.
- Lavaju P, Arya SK, Kumar B, Upadhaya P (2010) Conjunctival rhinosporidiosis presenting as a cystic mass—an unusual presentation. *Nepal J Ophthalmol* 2: 157-159.

Corresponding author

Neelam Sood, MD
B3/337 GF Pashim Vihar
New Delhi 110063, India
Telephone: 911125253615, 919718990230
Fax: 911125494264
Email: neesu1234@hotmail.com

Conflict of interests: No conflict of interests is declared.