Case Report

Ocular Rhinosporidium granuloma masquerading as Conjunctival Hemangioma: a Case Report

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Abstract

Ocular rhinosporidiosis is a chronic granulomatous infection caused by Rhinosporidium seeberi, a protistal microorganism endemic in the hot, tropical climes of India and Sri Lanka. It often presents as a friable, vascular conjunctival polyp but may mimic other ocular conditions. We present the case of a 35 year old female with an ocular polypoid mass that resembled a conjunctival hemangioma but was proved to be Ocular rhinosporidiosis on histopathology. Thick walled sporangia of Rhinosporidium seeberi containing multiple nucleated endospores are the typical diagnostic features on histopathology. Total wide-base excision of the polyp, preferably by electro-cautery, is recommended to prevent spillage of endospores and recurrence of the lesion. This is the first reported case of ocular rhinosporidiosis from Jammu & Kashmir state of North India.

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Introduction

Rhinosporidiosis, a chronic granulomatous mucocutaneous infection, is caused by Rhinosporidium seeberi, an unusual unicellular hydrophilic pathogen, that is difficult to culture and whose taxonomic classification has been controversial. It was reported in the 1890s, first by Malbran and then by Seeber in nasal polyps. [1] Currently it is domiciled in the Mesomycetozoa class (also known as the DRIP clade, or Ichthyosporea) which is a heterogeneous group of protists at the animal-fungal boundary that are mostly parasites of fish and other animals. [2] Rhinosporidiosis affects both adults and children and is commonly seen in otolaryngology. It is endemic in India, Sri Lanka, Nepal and Bangladesh. Ocular involvement in rhinosporidiosis is a well recognized, albeit, uncommon phenomenon. The largest reported case series of rhinosporidiosis consisting of 462 cases in India found that the disease mainly occurs in the nose and nasopharynx (81.1%) while the eye was affected in 14.2%. [3] We present the case of an adult female with a left-sided polypoid ocular mass which was initially suspected to be hemangioma but histopathology proved it to be a case of ocular rhinosporidiosis. This is the first reported case of ocular rhinosporidiosis from Jammu & Kashmir state of India.

Case Report

A 35-year-old female presented to the eye clinic at Acharya Shri Chander College of Medical Sciences of Jammu city with a 3 month history of a painless lump in her left eye. There was no history of lacrimation, photophobia, obvious cutaneous lesions or lymphadenopathy. On examination, a pedunculated 6x9 mm sized, brownish fleshy mass covered by tiny yellowish specks was seen protruding through the left palpebral aperture. There was no discharge or conjunctival injection. Clinically, the mass was diagnosed as conjunctival hemangioma, surgically excised under local anaesthesia and sent for histopathological examination.

Histological analysis revealed multiple spores and thick walled sporangia (Fig 1) of Rhinosporidium seeberi in a congested fibrous stroma diffusely infiltrated by chronic inflammatory cells (lymphocytes, macrophages & plasma cells) covered by stratified squamous epithelium, showing moderate focal hyperplasia. The sporangia were lined by a well-demarcated bilamellar thick-wall and were filled with nucleated basophilic endospores (Fig 2). A diagnosis of ocular rhinosporidiosis was made. There was no recurrence till 3 months post excision.

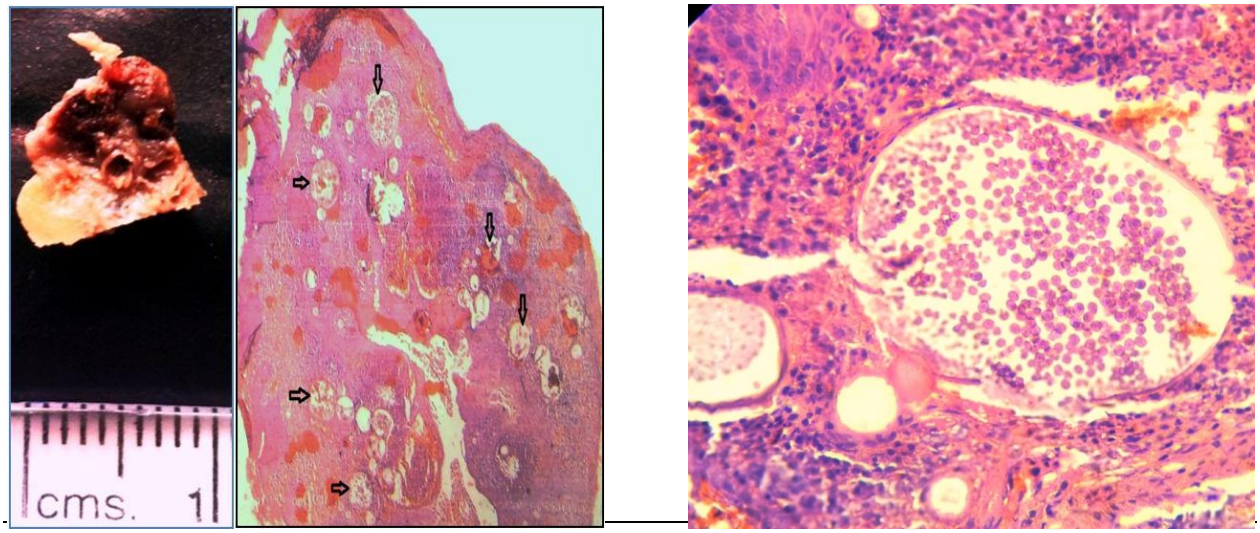

Fig 1: Gross and Photomicrograph of Ocular Rhinosporidiosis showing multiple sporangia within congested conjunctival stroma (H&E ×10); Fig 2: Sporangium filled with endospores and surrounded by a thick, refractile bilamellar wall in a congested, fibrous stroma infiltrated by lymphocytes & plasma cells (H&E x 40)

Discussion

Rhinosporidiosis usually occurs in the nose and naso-pharynx, ocular lesions coming next in frequency. [4] Systemic involvement is rare. Ocular rhinosporidiosis affecting the conjunctiva was first described in India in 1912 by Kirkpatrick. The chief ocular sites are lids and palpebral conjunctiva; bulbar conjunctiva, caruncle, limbus, and inner canthus are rarely affected. It most often presents as a polypoid mass of the palpebral conjunctiva, but may also present as a lacrimal sac diverticulum, recurrent chalazion, conjunctival cyst, chronic follicular conjunctivitis in contact lens wearers, scleral melting, ciliary staphyloma or simulate a tumour of the eyelid or periorbital skin. [5]

Clinically, ocular rhinosporidiosis presents as a soft, friable, pinkish, richly vascularized polypoid mass or grape-like clusters which may be pedunculated or sessile and may bleed on touch. The surface is studded with tiny yellowish-white specks (strawberry-like appearance) consistent with underlying mature sporangia beneath the epithelium. Histologically the lesions are essentially granulomas with chronic inflammatory cell infiltration and foreign body giant cell reaction, together with the characteristic sporangia containing the endospores.

In 1923, Ashworth described the life cycle of this organism in tissue. [6] This cycle begins with a round endospore which grows to become a thick-walled mature sporangium (100-350 µm in diameter) containing up to 12,000 endospores (7 to 15 µm in diameter). These structures are similar to the smaller endospores and spherules of *Coccidioides immitis*. The liberated endospores lodge in the host's tissue, repeating their in-vivo life cycles. The presence of Electron-dense bodies in the endospores is useful in confirmation of rhinosporidial identity[2].

R. seeberi has not been detected in the environment, and its natural host is unknown. Attempts to propagate this organism in artificial media have failed, as has its continuous co-cultivation with human cell lines. Frequent bathing in ponds and lakes filled with stagnant water in endemic areas has been considered as a major risk factor and water & soil are presumed to be the reservoir of infection. As most rhinosporidiosis lesions arise from the nose, it is feasible that ocular involvement may occur by spreading from the nose through the lacrimal sac to the plica of the conjunctiva. [4]

Conclusion

While Fine needle aspiration cytology has a role in diagnosis, the mainstay of diagnosis remains histology. It stains positive by special fungal stains like Gomori methenamine silver, Gridley's and Periodic acid-Schiff reagent. Total excision of the polyp, preferably by electro-cautery, is recommended. Pedunculated polyps permit radical removal while excision of sessile polyps with broad base of attachment to the underlying tissues is sometimes followed by recurrence due to spillage of endospores into the adjacent mucosa.

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Competing Interests

None declared.

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