Rhinobsporidiosis of the tarsal conjunctiva

Akshay Gopinathan Nair, Mohammad Javed Ali, Swathi Kaliki, Milind N Naik

Rhinobsporidiosis is a rare infection caused by Rhinosporidium seeberi, an organism classified in its own class, mesomycetozoea. It commonly affects mucus membranes namely the nasal mucosa, pharynx and the conjunctiva. We present the case of an 8-year-old female who presented with a flat, red, vascular, fleshy, pedunculated mass arising from the tarsal conjunctiva of the right upper eyelid. The mass was completely excised. On histopathological examination, multiple sporangia were seen in various stages of degeneration, consistent with rhinosporidiosis. The diagnosis of rhinosporidiosis is based solely on its microscopic features, and the treatment is surgical excision. This condition is endemic in the temperate regions of the Indian subcontinent, but it has been known to occur even in the colder regions of North America and Eastern Europe. Although a rare clinical entity, the possibility of rhinosporidiosis must be borne in mind when evaluating any polypoidal conjunctival mass.

Key words: Conjunctiva, conjunctivosporidiosis, rhinosporidiosis, tarsus, tumor

Rhinosporidiosis is a chronic granulomatous disease caused by Rhinosporidium seeberi,[1] an endosporulating microorganism, which has recently been placed in a taxonomical group, mesomyectozoea, which is a heterogeneous group of microorganisms which are at the boundary between animals and fungi.[2] The disease is endemic in India and Sri Lanka.[3] Its most common presentation is like a soft polypoidal pedunculated mass. While the nose and nasopharynx are the most common sites, other sites of infection include the conjunctiva, maxillary sinuses, penis, urethra.[4] In addition to the conjunctiva, ocular rhinosporidiosis can affect the eyelids, limbus, caruncle, canthi, lacrimal sac and nasolacrimal duct.[1,5] Rarely scleral ectasia, staphyloma formation, and the scleral melt have also been reported.[6,7] In this communication, we report an unusual location of the focus of rhinosporidiosis: The tarsal conjunctiva in a child and also highlight the typical microscopic findings seen.

Case Report

An 8-year-old female presented to our clinic with a history of foreign body sensation, irritation and occasional epiphora in the right eye of 8 months duration. Visual acuity in both eyes was 20/20 N6. On examination, the lids, bulbar conjunctiva, cornea, and sclera were normal. Ocular motility was normal, as were intraocular pressures and dilated fundus examination. On eversion of the right upper eyelid, a flat, red, vascular, fleshy pedunculated mass was seen arising from the tarsal conjunctiva. Large feeder vessels were seen at the base of the mass, which had multiple small, pale yellow nodules on the surface [Fig. 1a and b]. The patient had no prior history of any ophthalmic surgery or ocular trauma. A clinical diagnosis of a pyogenic granuloma was made, and the mass was completely excised with application of electro-cautery to the base of the lesion.

Histopathological examination of the mass showed squamous mucosa with subjacent moderate lymphocyte and plasma cell infiltration. Epithelial hyperplasia was noted, and multiple...
configuration

mass as the lids over the conjunctiva exert a flattening force.

is no space for the oculosporidium to grow out as a polypoid

when the infection arises from the bulbar conjunctiva, there

mature sporangia on the surface. It has been hypothesized that

The typical conjunctival lesion in oculosporidiosis is a red,

Discussion

sought to rule out additional lesions, which was normal.

no recurrence, and the conjunctiva had healed well with

drop was prescribed for 1-week. At 6

by degenerating cells admixed with a few dilated blood

The degenerating sporangia were surrounded by inflammatory
cells admixed with a few dilated blood vessels (black arrows)
(H and E, ×10) (a). Stage I or the early trophic stage in the life cycle of
rhinosporidiosis: A large single centrally situated nucleus is surrounded
by a finely granular cytoplasm. The three surrounding layers can be
distinctly identified (black arrow): The outer chitinous layer, the middle
cellulose-like layer and the thin mucoid layer. (Gomori’s Methanamine
silver stain, 40×) (b)

sporangia were seen in various stages of degeneration including
the early trophic stage, which is characterized by a large single
centrally situated nucleus surrounded by a finely granular
cytoplasm.[1] The degenerating sporangia were surrounded by
degenerating cells admixed with a few dilated blood
vessels. The picture was consistent with rhinosporidiosis
[Fig. 2a and b]. Postoperatively, topical Tobramycin 0.3% eye
drop was prescribed for 1-week. At 6 monthly follow-up, there
was no recurrence, and the conjunctiva had healed well with
no residual lesion [Fig. 1c]. A rhinology consultation was also
sought to rule out additional lesions, which was normal.

![Figure 2: Epithelial hyperplasia of the conjunctiva is noted here. Multiple round sporangia were seen in various stages of degeneration. The degenerating sporangia were surrounded by inflammatory cells admixed with a few dilated blood vessels (black arrows) (H and E, ×10) (a). Stage I or the early trophic stage in the life cycle of rhinosporidiosis: A large single centrally situated nucleus is surrounded by a finely granular cytoplasm. The three surrounding layers can be distinctly identified (black arrow): The outer chitinous layer, the middle cellulose-like layer and the thin mucoid layer. (Gomori’s Methanamine silver stain, 40×) (b) ](image)

The degenerating sporangia were surrounded by inflammatory
cells admixed with a few dilated blood vessels (black arrows)
(H and E, ×10) (a). Stage I or the early trophic stage in the life cycle of
rhinosporidiosis: A large single centrally situated nucleus is surrounded
by a finely granular cytoplasm. The three surrounding layers can be
distinctly identified (black arrow): The outer chitinous layer, the middle
cellulose-like layer and the thin mucoid layer. (Gomori’s Methanamine
silver stain, 40×) (b)

The mass was seen arising from the tarsal conjunctiva, but
owing to the lack of space to grow outward, it assumed a flat
configuration [Fig. 1b].

The presumed mode of human infection is due to contact
of traumatized epithelium with contaminated water. Highest
incidence of cases is reported among river-sand workers in
India and in Sri Lanka; this is particularly relevant to such a
mode of infection, through abrasions caused by sand particles
with the pathogen in the putative habitat such as ground
water.[9] Another mode of infection is inhalation of field dust
contaminated by the spore bearing feces of infected animals.[1]

Clinically, on examination of the mass, the presence of
yellowish pin head-sized spots on the surface, which represent
underlying mature sporangia, may help in pointing toward a
possible diagnosis of rhinosporidiosis. The definitive diagnosis
of rhinosporidiosis, however, is by histopathological examination
of biopsied or resected tissues, with the identification of the
pathogen in its diverse stages, rather than the stromal and
cellular responses of the host. Final diagnosis is achieved by
demonstration of thick-walled sporangia containing numerous
endospores in a background of fibrovascular stroma.[4]

Although cases of spontaneous regression have been
recorded, they are rare, and the most effective mode of treatment
remains surgical. Rhinosporidial lesions may recur years
after primary excision. Total excision of the mass preferably
by electro-cautery is recommended to reduce the chance of
reurrence. Postoperatively, oral Dapsone is recommended by
some authors as a measure to prevent recurrence.[3]

Differential diagnosis in such cases must include conjunctival
papilloma, hemangioma, arteriovenous malformation and
pyogenic granuloma. Close examination will reveal the small
pale yellow spheres typical of rhinosporidiosis.[11] Although
endemic in tropical regions, rhinosporidiosis requires a high
degree of clinical suspicion to clinically diagnose it. While
the Indian subcontinent accounts for the majority of the cases in
literature; sporadic cases from Europe and North America also
have been reported. Therefore, regardless of the geographic
location, rhinosporidiosis must be considered as a differential
when encountered with a polypoidal conjunctival mass.[1]

References

1. Reidy JJ, Sudesh S, Klafter AB, Olivia C. Infection of the conjunctiva
2. Mendoza L, Taylor JW, Ajello L. The class mesomyctozoea: A
   heterogeneous group of microorganisms at the animal-fungal
3. John SS, Mohandas SG. Conjunctival oculosporidiosis with scleral
   Mondal RK, et al. Clinicopathological study of rhinosporidiosis
5. Mithal C, Agarwal P, Mithal N. Ocular and adnexal rhinosporidiosis:
   The clinical profile and treatment outcomes in a tertiary eye care centre.
6. Jacob P, Rose JS, Hoshing A, Chacko G. Tectonic corneal graft
   for conjunctival rhinosporidiosis with scleral melt. Indian J
7. Castellano AM, Rao SK, Biswas J, Gopal L, Madhavan HN,
   Kumar SK. Conjunctival rhinosporidiosis associated with scleral
   melting and staphyloma formation: Diagnosis and management.
   Cornea 2000;19:30-3.
   Ocular rhinosporidiosis presenting as chronic follicular conjunctivitis
9. Arseculeratne SN. Recent advances in rhinosporidiosis and

Cite this article as: Nair AG, Ali MJ, Kaliki S, Naik MN. Rhinosporidiosis of

Source of Support: Nil. Conflict of Interest: None declared.