Isolated conjunctival histoplasmosis in an elderly patient: a rare but important scenario

Histoplasmosis is a granulomatous infection caused by the dimorphic fungus *Histoplasma capsulatum*. It has two variants which are known to cause human infection: *Histoplasma capsulatum* var *capsulatum* and *Histoplasma capsulatum* var *duboisii*. Ocular manifestations are known in the form of involvement of the choroid and retina.[1] Here, we describe the clinical features, diagnosis, and management of an isolated conjunctival histoplasmosis infection as a primary manifestation in an immunocompromised individual.

Case Description

A 60-year-old male patient was referred to us for a gradually increasing, painless, light pink, conjunctival mass in the left eye over four months (Fig. 1). Examination revealed a visual acuity of 20/20 in both eyes. Right eye anterior segment examination was essentially within normal limits, whereas the left eye showed a diffuse conjunctival mass extending from the limbus till the fornices without any corneal or orbital involvement. Extra ocular movements were normal in all the gazes. Dilated fundus evaluation revealed a healthy optic nerve and retina in both eyes.

The deduced differential diagnoses were lymphoma, angiomyxoma, myxoma, lipodermoid, and/or amyloidosis. The B scan ultrasound performed over closed eyelids revealed a temporal ocular coat thickening along the anterior aspect with an underlying hypo echoic muscle tendon; however, ocular coats appeared intact in absence of any orbital extension. Subsequently, the contrast-enhanced MRI of the orbit revealed a variably enhancing diffuse mass along the left epibulbar region, which collaborated with the ultrasound findings. Under local anesthesia, complete excision biopsy of the lesion was performed, with grafting of the residual bed using an amniotic membrane. The light microscopy examination of the specimen revealed sheets of subconjunctival histiocytes with round intracytoplasmic and extracellular organisms measuring approximately 2–4 microns (Fig. 2A). The silver methamine stain demonstrated the black capsule (Fig. 2B) and Periodic Acid Schiff (PAS) stain highlighted the cell wall (Fig. 2C). Based on the findings, a diagnosis of conjunctival histoplasmosis capsulatum var capsulatum was made and the patient underwent thorough dermatological and pulmonary evaluation, which revealed findings suggestive of systemic histoplasmosis. Serology showed reactivity for HIV along with very low CD4 counts. The patient was started on anti-retroviral therapy along with intravenous liposomal Amphotericin B, but, due to a severely compromised immune status, the patient did not survive for more than a few weeks after the clinical diagnosis was established.

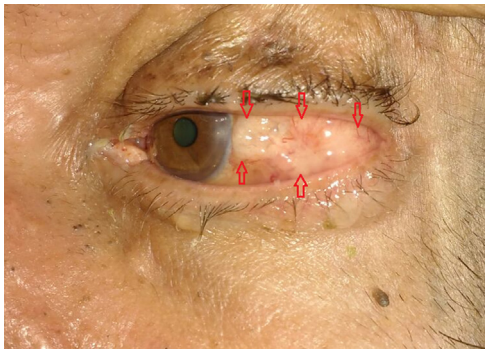

Fig. 1—Left-sided temporal conjunctival thickening extending till the fornices (red arrows).

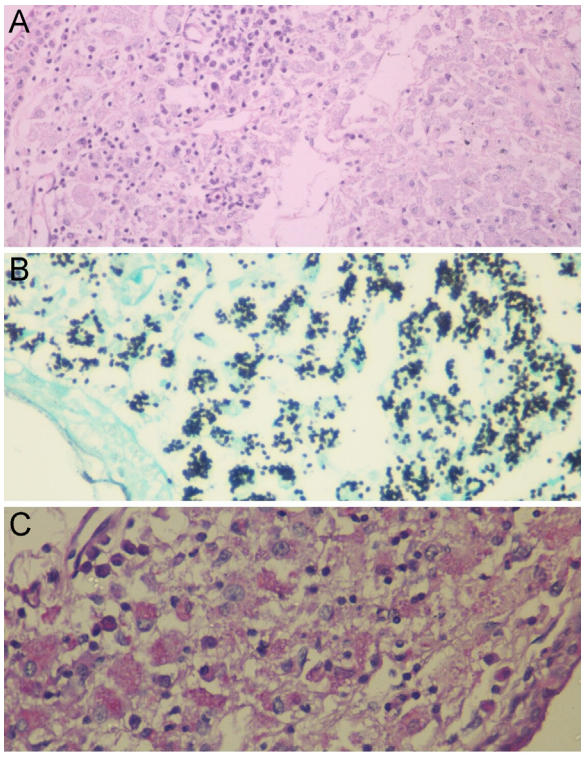

Fig. 2—(A) Incisional biopsy specimen under light microscopy revealed sheets of subconjunctival histiocytes containing round intracytoplasmic as well as extracellular 2–4 micron organisms (10X). (B) Silver methamine staining the capsule (black) (20X). (C) Periodic Acid Schiff (PAS) stain highlights the organisms (20X).

Discussion

Conjunctival involvement due to *Histoplasma capsulatum* is very unusual in clinical practice. Human infection mainly affects the lungs due to the inhalation of spores which reside in soil with high nitrogen content. Histoplasmosis due to *Histoplasma capsulatum* var *capsulatum*, which is mainly found in the United States along the sides of the Ohio and Mississippi river valleys.[2,3] Symptoms include acute or chronic pulmonary histoplasmosis,

progressive disseminated histoplasmosis, ocular histoplasmosis, and cutaneous histoplasmosis. The pulmonary manifestations can be asymptomatic in healthy individuals, but, in patients who are immunocompromised, it can be devastating. The second variant is *Histoplasma capsulatum* var *duboisii*, also known as African histoplasmosis, as it is mainly prevalent in West Africa. It can be localized to the skin or the disseminated form involving the lymph nodes, bone, and other visceral organs.[4]

Conjunctival involvement is rare and it has been noted previously on two occasions; Knox et al. noted isolated histoplasmosis presenting as an isolated conjunctival granuloma, which was small and successfully managed surgically.[5] Similarly, Shirali et al. described conjunctival involvement associated with diffuse nodular skin lesions in an HIV-infected patient with disseminated histoplasmosis, who was managed initially with intravenous Amphotericin B followed by oral itraconazole 200 mg for life.[2]

Histopathological assessment by an experienced ocular pathologist is of paramount importance to make a final diagnosis. These fungal infections mainly show granulomatous inflammation along with necrosis. Under the microscope, the *Histoplasma capsulatum* var *capsulatum* variant shows oval yeasts, measuring 2–4 microns, and their cell walls are usually identified by Gomori Methamine Silver and Periodic Acid Schiff stains. Because these yeasts are ingested by macrophages, they can also be visualized inside the macrophages in a clustered manner.[6] *Histoplasma capsulatum* var *duboisii* shows similar clustering inside the macrophages, and it can be differentiated from the former based on the size of the yeasts, which are larger (8 to 15 μm in diameter) than the former. Other modalities to differentiate include lysis centrifugation method, culture, and detection of the antigen in urine.[6]

To conclude, isolated conjunctival histoplasmosis was the primary clinical manifestation of a severely compromised immune status in an elderly patient. Thus, cases with unusual conjunctival masses in elderly patients must undergo detailed ocular and systemic evaluation for optimal results.

Disclosure(s):

The authors have no proprietary or commercial interest in any materials discussed in this article

Supplementary Data

Supplementary data associated with this article can be found in the online version at https://doi.org/10.1016/j.jcjo.2018.04.003.

Amar Pujari, MD, Vaishali Rakheja, MBBS, Mandeep S. Bajaj, MD, Seema Sen, MD, Bhupendra Yadav, MBBS
Dr. Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, New Delhi, India.

Correspondence to:
Amar Pujari, MD, Dr. Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, Room no. 212, Second floor, RPC-1, New Delhi 110029, India: dramarpujari@gmail.com

References

1. Diaz RI, Sigler EJ, Rafieetary MR, Calzada JI. Ocular histoplasmosis syndrome. *Surv Ophthalmol*. 2015;60:279-95.
2. Shirali A, Kini J, Vupputuri A, Kuruvila M, Venkatraya Prabhu M. Disseminated histoplasmosis with conjunctival involvement in an immunocompromised patient. *Indian J Sex Transm Dis*. 2010;31:35-8.
3. Krakauer M, Prendes MA, Wilkes B, Lee HBH, Fraig M, Nunery WR. A case of orbital histoplasmosis. *Ophthal Plast Reconstr Surg*. 2016;32:71-2.
4. Ravindran S, Sobhanakumari K, Celine M, Palakkai S. African histoplasmosis: the first report of an indigenous case in India. *Int J Dermatol*. 2015;54:451-5.
5. Knox DL, O'Brien TP, Green WR. Histoplasma granuloma of the conjunctiva. *Ophthalmology*. 2003;110:2051-3.
6. Guarner J, Brandt ME. Histopathologic diagnosis of fungal infections in the 21st century. *Clin Microbiol Rev*. 2011;24:247-80.

Can J Ophthalmol 2019;54:e15–e16

https://doi.org/10.1016/j.jcjo.2018.04.003

Relapsing periorbital polychondritis: a great ophthalmic masquerader

Case Report

A 73-year-old male presented to emergency eye clinic with a 1-week history of left upper lid swelling, erythema, and diplopia. Past ocular history was significant for a recent admission to another hospital for presumed periocular cellulitis of the right eye. The patient was treated with intravenous (IV) antibiotics and the presumed right periocular cellulitis had fully resolved with the patient discharged 2 weeks prior to this presentation.

Examination demonstrated marked chemosis, proptosis, and severe restriction of extraocular movements of the left eye (Fig. 1). Intraocular pressure was raised at 35mmHg and mild flare in the anterior chamber was noted. There was no evidence of optic nerve compromise and dilated fundal examination was unremarkable. An ophthalmic ultrasound scan was normal. The right eye was unremarkable. VA was 0.0 logmar in both eyes.

Blood tests showed CRP 166 and WBC 11.7 with neutrophila. The patient was admitted and initially treated for presumed orbital cellulitis with IV antibiotics. CT orbit demonstrated pre-septal soft tissue swelling and fat stranding but no orbital mass or abscess.