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Cryptococcal iridociliary granuloma

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ABSTRACT

Cryptococcal intraocular infection is a rare disease and is usually associated with generalized systemic disease in immunocompromised patients. The diagnosis may be difficult because of the rarity of this disease and its similarities to other uveitic entities. We describe a case of culture-positive cryptococcal iridociliary granuloma diagnosed by anterior chamber tap and fine-needle aspiration biopsy in a 60-year-old immunocompetent woman with acute granulomatous uveitis. She was treated successfully with systemic amphotericin B and fluconazole and intravitreal amphotericin B, with improvement in the inflammation and visual acuity and regression of the iridociliary granuloma. We review previously reported cases of intraocular cryptococcal infection. Cryptococcal iridociliary granuloma should be considered in the differential diagnosis of an atypical iridociliary mass associated with acute uveitis.

1. Introduction

Cryptococcosis is a systemic fungal infection caused by a nonmycelial, encapsulated, saprophytic yeast fungus *Cryptococcus neoformans*. Humans are exposed to *Cryptococcus* by inhalation, which lead to an initial pulmonary infection that can be asymptomatic, subacute, or disseminated.[2,7,10,15,20] Approximately 50% of patients who develop clinical disease have some evidence of underlying immunosuppression.[4,10]

Cryptococcus has a predilection to infect the central nervous system including brain, meninges, and spinal cord[5]; however, intraocular infection is rare.[8,10] Cryptococcal iridociliary granuloma is extremely rare. Moreover, the diagnosis is challenging in such a condition as it requires isolation and identification of the organism. Treatment of choice for systemic infection is amphotericin B intravenously with or without flucytosine, whereas for intraocular infection, intravitreal amphotericin B is required as there is limited intraocular penetration.

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Herein we describe a rare case of iridociliary mass masquerading as iridociliary metastasis in an immunocompetent individual with subclinical disseminated cryptococcal infection.

2. Case report

A 60-year-old immunocompetent woman with a history of chronic obstructive pulmonary disease started to develop redness in her left eye 4 weeks before presentation. A few days later, she developed pain, photophobia, and blurry vision that led to the diagnosis of iris mass. Subsequently, she was referred to the Department of Ophthalmic Oncology at Cleveland Clinic in February, 2015, for further evaluation.

On examination, visual acuity was 20/20 in the right eye and counting fingers at 1 foot in the left eye. Intraocular pressures were 13 mm Hg and 18 mm Hg in the right eye and left eye, respectively. Ophthalmic examination of right eye was within normal limits. Slit-lamp examination of the left eye showed diffuse conjunctival injection with a clear cornea. Anterior chamber (AC) showed 3+ cells. A multilobulated yellow-white lesion measuring approximately 5 × 5 mm in basal dimension and 3 mm in thickness was noted along the peripheral iris at the 6 o'clock position (Fig. 1A). The lesion had prominent intrinsic vasculature associated with hypopyon. Diffuse iris neovascularization was present for 360° as well as posterior synechiae, precluding a detailed fundus examination other than observing a diffuse red glow and vitreous cells. Ultrasound biomicroscopy showed a circumscribed iridociliary mass measuring 8 × 6 mm in basal dimension and 4 mm in thickness (Fig. 1B).

The etiology of the lesion was uncertain but the possibility of metastasis and infection were considered in the differential diagnosis. Fine-needle aspiration biopsy (FNAB) of the lesion was done for cytology and AC tap for cultures. The preliminary results of FNAB (within 24 hours) were consistent with an infectious etiology most likely of a small yeast like organism such as *Histoplasma* or *Cryptococcus* (Fig. 1C and 1D). Vitreous tap and intravitreal injection of vancomycin 1 mg/0.1 mL, ceftazidime 2 mg/0.1 mL, and amphotericin B 10 μg/0.1 mL were done.

The patient was referred to the infectious disease clinic for systemic work up to identify the primary focus. A computed tomography scan of the chest showed diffuse lymphadenopathy including mediastinal, axillary, infraclavicular, and abdominal lymphadenopathy. In addition, multiple indeterminate nodules scattered in both lungs were observed. AC fluid culture subsequently grew *Cryptococcus neoformans*.

A diagnosis of disseminated cryptococcosis manifesting as iridociliary granuloma and diffuse lymphadenopathy was made. Lumbar puncture did not find evidence of cryptococcal

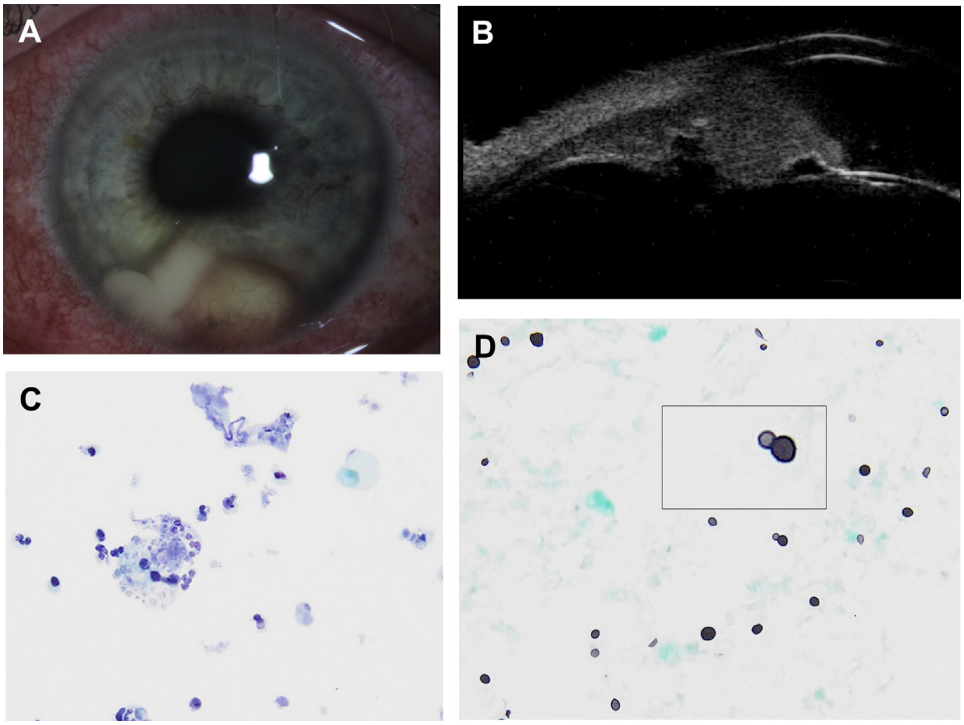

Fig. 1 – *A*: Slit-lamp photo of left eye showing severe conjunctival injection, inferior yellow or white vascularized iris mass and hypopyon nasal to lesion. Extensive iris neovascularization is noticed in temporal, superior, and nasal quadrants. *B*: Ultrasound biomicroscope showing the iridociliary body mass measuring 8 × 6 mm in basal dimension and 4 mm in thickness. *C*: The fine-needle aspirate sample contained acute and chronic inflammatory cells including histiocytes (center) containing faintly stained structures suggestive of yeast. These structures varied slightly in size and had faintly stained featureless centers (original magnification 40 X, Papanicolaou stain). *D*: The GMS stain confirmed the presence of yeast consistent with Cryptococcus species (original magnification 400 X; inset magnification 1000 X). GSM, Grocott's methenamine silver.