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Intraocular tuberculosis presenting as a large anterior chamber mass

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On rare occasions, ocular tuberculosis (TB) can present as a mass that mimics an intraocular tumor.^{1,2} We report the case of a patient with a large intraocular mass, presumed to be a tuberculous granuloma, filling the anterior chamber.

A 63-year-old Filipino female presented to our clinic with a 1-year history of decreased vision, mild pain, and redness in her right eye. Her past ocular history was notable for cataract surgery in the right eye in the Philippines approximately 4 months after the onset of her symptoms. No records of her perioperative care were available for review.

Postoperatively, she noticed a continued, gradual decline in vision, and 4 months after cataract surgery, she noted leukocoria in the affected eye.

Initial examination demonstrated visual acuity of light perception in the right eye and 20/35 in the left eye. A large, white intraocular mass filled the anterior chamber of the right eye, such that the entire corneal endothelium was in contact with atrophic iris tissue or the mass itself, with associated diffuse corneal edema (Figure 1). A small portion of a three-piece intraocular lens haptic was visible through an area of atrophic iris inferotemporally. There was no view of the posterior segment. B-scan ultrasonography displayed dense vitreous opacities, a shallow ciliochoroidal detachment temporally, and diffuse thickening of the ocular coats. The asymptomatic left eye had mutton fat keratic precipitates with 2+ anterior chamber cell, no vitreous inflammation, and mild optic disc swelling.

MRI of the brain and orbits was unremarkable. A chest x-ray was normal. Tuberculin skin testing (TST) was markedly positive with 20mm of induration, and interferon-gamma release assay (IGRA) testing was also positive. Syphilis and HIV screening were negative.

She was treated with topical prednisolone acetate 1% in the left eye, with resolution of her intraocular inflammation. Anti-tuberculosis therapy (ATT) was initiated with a 2-month course of isoniazid, rifampin, and pyrazinamide, followed by a 7-month course of isoniazid and rifampin. Topical steroids were tapered after initiation of ATT, and she had no recurrent inflammation in the left eye. After 4 months of ATT, the clinical appearance of the right eye

remained unchanged, and the patient elected to undergo enucleation due to pain and blindness.

Pathologic examination revealed necrotizing granulomatous inflammation and fibrovascular tissue in the anterior segment adjacent to the intraocular lens, with scattered nonnecrotizing choroidal and scleral granulomas (Figure 1). No acid-fast organisms were identified by staining or culture. TB polymerase chain reaction (PCR) testing of tissue sections from the anterior chamber mass was likewise negative. A diagnosis of intraocular TB was supported by positive TST and IGRA, bilateral ocular inflammation, absence of other identifiable etiologies, clinical improvement and stability with ATT, and consistent histopathologic features.³ We suspect the negative cultures and PCR testing were a result of the ATT that she received for the 4 months prior to enucleation.

The majority of reported tuberculous intraocular masses have originated from the choroid.¹ Reports of presumed or definitive intraocular tuberculomas originating in the anterior chamber are much less common.^{1,4–6} To our knowledge, the presentation of intraocular tuberculosis as a solid mass filling the anterior chamber has not been previously reported. Current methods for diagnosis of intraocular tuberculosis may have limited sensitivity,^{6,7} and we believe that the diverse manifestations and insidious nature of this disease continue to necessitate a high level of clinical suspicion, particularly in high-risk populations.

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FIGURE 1.

Histopathology of the enucleation specimen. (A) A large white, vascularized mass completely fills the pupil and anterior chamber, causing diffuse corneal decompensation. (B) Anterior segment section with hematoxylin and eosin stain demonstrates fibrovascular tissue and chronic inflammation in the anterior chamber (original magnification $\times 20$). *Inset:* Necrotizing granuloma posterior to intraocular lens optic (C, original magnification $\times 100$).