• Letter to the Editor •

Choroidal and ciliary body tubercle: a case report

Bing Li, Jun-Jie Ye, Chan Zhao

Department of Ophthalmology, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100730, China

Correspondence to: Jun-Jie Ye. Department of Ophthalmology, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences, Beijing 100730, China. yejunjie_xh@163.com

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Dear Editor,

I am Bing Li from the Department of Ophthalmology, Peking Union Medical College Hospital in Beijing, China, and I write to present a case report of choroidal and ciliary body tubercles.

Ocular tuberculosis (TB) is an extrapulmonary tuberculous condition with variable manifestations[1]. Tuberculous granulomas are a type of intraocular TB that occurs on the ciliary body[2]. However, few studies have comprehensively evaluated infection of the ciliary body by TB, including its diagnosis and management. Here, we report a rare case of a ciliary body tubercle with no sign of active systemic TB infection.

This study was approved by the Review Board of Peking Union Medical College Hospital. Written informed consent to participate and publication was obtained from the patient.

A 45-year-old man presented in the eye clinic with a 5-month history of pain, red eye, exorbitism, and visual decrease in his right eye. He was previously diagnosed with panuveitis and received intravenous methylprednisolone pulse therapy (1000 mg for 3d) followed by oral prednisolone with slow tapering. However, his symptoms worsened during the treatment, and an ultrasound B-scan showed that his right eye exhibited a new-onset space-occupying lesion in the temporal peripheral site of the fundus. His best-corrected visual acuity (BCVA) was 20/40 in the right eye and 20/20 in the left eye. Exophthalmos was 20 mm in the right eye and 14 mm in the left eye. The outer orbital distance was 106 mm. His right eye showed apparent conjunctival congestion and episcleral vessel dilation (Figure 1A) as well as significant inflammation in the anterior chamber. Fundus examination showed a yellow-white lesion at the periphery of the fundus (Figure 1B). Ultrasound B scans and ultrasound biomicroscopy (UBM) showed a homogeneous lesion and swelling of the superotemporal quadrant of the ciliary body in the right eye (Figure 1C, 1D). The left eye was normal. Orbital magnetic resonance imaging (MRI) showed low signal lesions in both T1 and T2 models within the ocular lesion and an impressed vitreous cavity (Figure 1E, 1F).

After a thorough review of the patient's systemic medical history, we were informed that he had been diagnosed with pulmonary TB 20y prior. During the process of the eye disease, he also had irregular low-grade fevers and feebleness. In view of the strong positive results obtained in a tuberculin skin test (TST) and interferon gamma release assay (IGRA), we confirmed the diagnosis of choroidal and ciliary body tubercles. However, chest computed tomography did not indicate any recurrence of TB in the lung.

After 6mo of orbital and systemic anti-TB therapy, his symptoms in the right eye had completely resolved and remained stable. BCVA had recovered to 20/30 in the right eye. A fundus photograph showed that the peripheral choroidal lesion had recessed, and UBM indicated that the ciliary tubercle had resolved, although the sclera was thinned at the lesion (Figure 2).

TB infection is common worldwide, especially in developing countries, immigrant populations and immunocompromised patients in developed nations[3]. Estimates indicate that approximately 1.13 million new cases of TB occur in China per year. TB granuloma of the ciliary body was first reported by Wadsworth[4] in 1883 and remains limited to rare case reports[5-6]. In this case, the patient's unresponsiveness to steroid pulse therapy strongly pointed to an infectious etiology. Combined with his previous TB infection and positive results for TST and IGRA, a diagnosis of choroidal and ciliary body TB was highly suspected.

We ordered chest high-resolution computerized tomography and held a consultation with internal physicians of the Department of Infection regarding screening for systemic TB. No other positive results supported active systemic TB. While

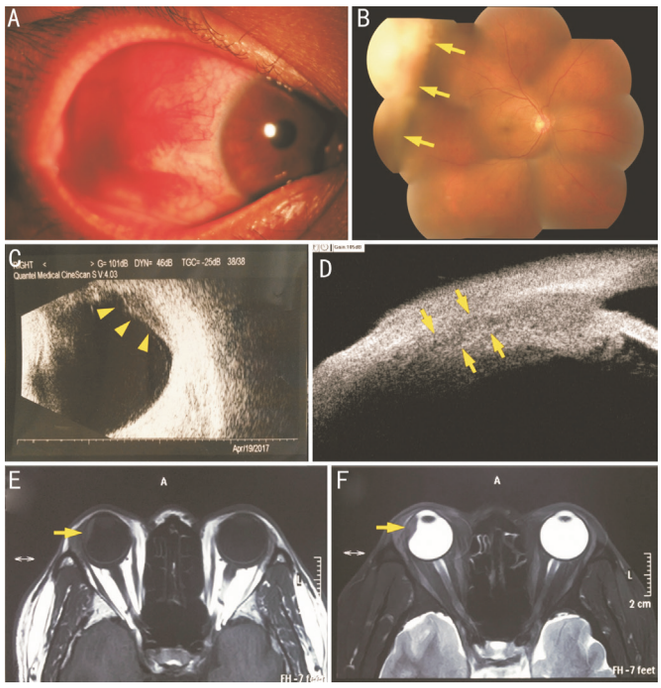

Figure 1 The imaging examination of the patient at his first consultation A: Anterior segment photograph showing apparent conjunctival congestion and sclerotic venectasia in the temporal side of right eye; B: Fundus examination showing a yellow-white mass with an unclear border on the peripheral temporal fundus (yellow arrows); C: Ultrasonic B-scan showing a solid mass at the peripheral site beneath the retina with choroid involvement (arrowheads); D: UBM showing the lesion in the ciliary body; E, F: T1 and T2 models on orbital MRI showing the mass within the ocular space pushing the vitreous cavity to ingress.

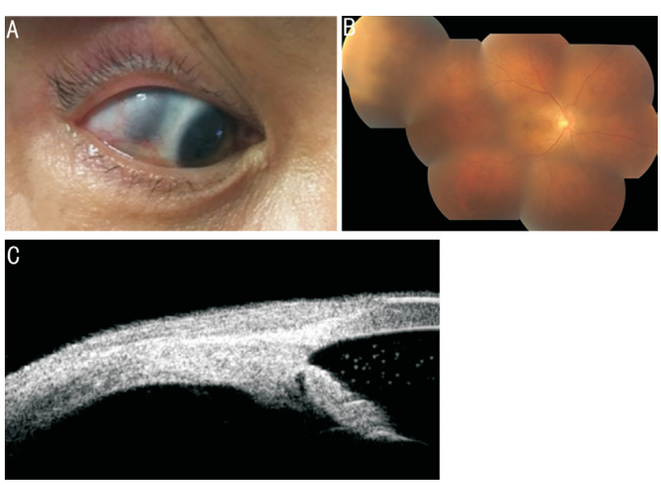

Figure 2 The lesion resolved after 6-month treatment A: Photograph of the external side of the lesion showing the recession of congestion and venectasia scleral staphyloma; B: Fundus photography showing mass reduction after 6mo of orbital and systemic anti-TB therapy; C: UBM showing that the ciliary tubercle was resolved after treatment, although the sclera had thinned at the lesion.

biopsy is proposed as the gold standard for the diagnosis of ocular TB[7], we believe that a standard regimen of diagnostic anti-TB treatment is preferable as a noninvasive intervention in cases with a supportive history, immunological TB tests and clinical findings. When effective, anti-TB treatment can confirm the diagnosis of TB and minimize treatment delay in highly susceptible intraocular TB.

Ciliary body tubercles are rarely reported. We report a rare case of intraocular TB in which both the choroid and ciliary bodies were involved with no sign of systemic TB; this patient recovered after oral anti-TB therapy. This diagnosis is strongly suggested in patients with a previous infection with TB present with local sclerosis and a ciliary body mass extending into the perichoroid. It is also possible for these lesions to occur without another active focus of TB infection. Diagnostic anti-TB treatment is preferable as a noninvasive procedure in cases with a supportive history, positive immunological TB tests and suggestive clinical findings.

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Authors' contributions: Li B was in charge of collecting the medical records and clinical data related to the case and writing the manuscript; Ye JJ was in charge of the management of the patient's diagnosis, ophthalmic and laboratory examinations, and follow-up clinical data; Zhao C was in charge of revising the manuscript. The manuscript has been read and approved by all the authors.

Conflicts of Interest: Li B, None; **Ye JJ,** None; **Zhao C,** None.

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