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*Case Report .*

# Choroidal Tuberculoma: A Rare Presentation of Common Disease

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## ABSTRACT

Choroidal involvement of tuberculosis is a rare ocular form of presumed intraocular tuberculosis (PIOTB). We presented a case of 40 years old Indian patient medically free and healthy came with gradual decrease of vision over one week. Fundus examination revealed that the retina in the left eye showed single large lesion (tumor like mass) in the macular area with subretinal fluids. Optic coherence tomography (OCT) and Fluroscene angiography confirm the presence of inflammatory subretinal mass. The patient was treated by full anti-TB medication for 10 months. Patient recovered from counting finger to 20/20 with no recurrence for 1 year. Ophthalmologists should be aware of this rare presentation of TB.

**Keywords:** TB, Choroid, Tuberculoma.

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## INTRODUCTION

Choroidal involvement of tuberculosis is a rare ocular form of tuberculosis (TB) that represents both a diagnostic as well as a therapeutic challenge, particularly when presenting without other tuberculosis manifestation.[1]

The ocular tuberculosis might be caused either by direct mycobacterial infection or indirect immune-mediated hypersensitivity reaction.[2] Intra-ocular tubercles could be seen in the early stages of TB and indicate hematogenous dissemination before the development of symptomatic ocularTB.[3] Choroidal TB can exist even inthe absence of systemic disease and could be due to hypersensitivity that develops towards the DNA of the tubercles.[4]

Early diagnosis and prompt treatment may be vision saving which necessitates screening for ocular involvement particularly in cases with central nervous system Tuberculosis (TB) involvement and military TB.

## CASE PRESENTATION

Forty years old Indian patient medically free and healthy came with gradual decrease of vision over one week. External examination of the eyes showed that they were within normal limit; lids and lashes were normal, conjunctiva and corneas were clear. Anterior chamber was quite. Lenses were clear in both eyes. Fundus examination revealed clear and quite vitreous. Right eye showed normal appearance of the retina, optic disc, and the blood vessel (Figure 1). The retina in the left eye showed single large lesion (tumor like mass) in the macular area with subretinal fluids (Figure 2). Optic coherence tomography (OCT) was done and showed multiple areas of subretinal fluids (this fluid is usually secondary to the inflammation). Fluroscene angiography showed early hypo and late hyper flurouscent of the lesion which is typical for choroidal tuberculoma (Figures 3 and 4). Ultrasound was done and showed small localized lesion and it was very small to detect the reflectivity of the lesion. Completed blood count (CBC), liver function tests (LFT), renal function tests and syphilis serology were normal. Chest x-ray and computerized tomography (CT)-scan of the chest were normal. PPD skin test for TB screening was strongly positive (more than 30mm indurations). The typical clinical finding, supported by the history of being Indian (endemic area of TB), and strongly positive PPD lead to diagnose our patient with presumed intraocular tuberculosis. The patient was treated by 4 anti-TB medication (Isonicotinylhydrazide “INH”, Rifambicin, Ethambutol and Pyrazinamide). After two months, ethambutol and pyrazinamide were stopped whereas INH and Rifambicin were continued and to stopped after 10 months. Also, patient was given 1mg/kg prednisolone and tappered over 4 months. The patient recovered from counting finger to 20/20, fundus examination of the left eye after completion of the treatment showed no disc swelling with mild temporal pallor, and complete resolution of the subretinal fluid with mild RPE changes (Figure 5) and OCT showed a great improvement after the treatment. Our patient had follow up for 1 year with no recurrence.

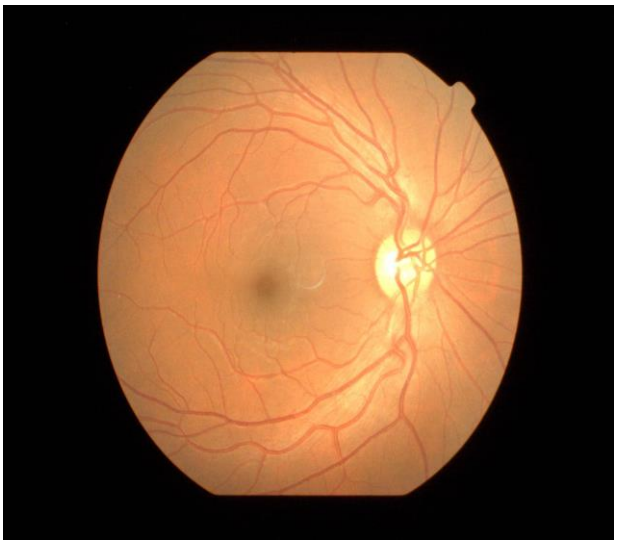

**Figure 1: Fundus photo of the right eye show normal appearance of the retina, optic disc, and the blood vessel.**

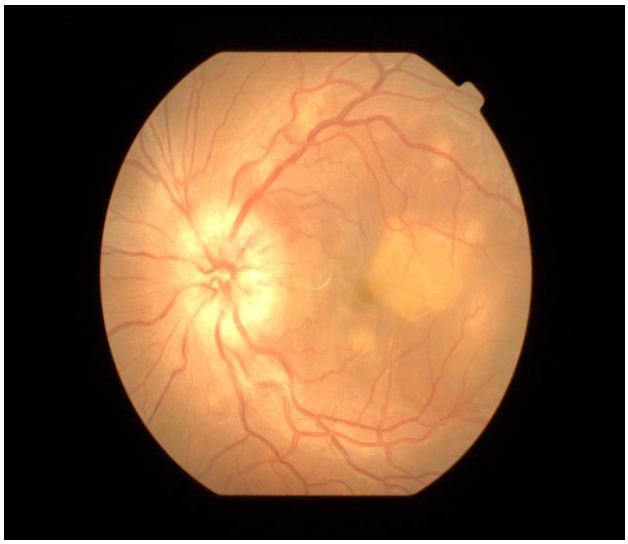

**Figure 2: Fundus photo of the left eye show: Severe optic disc swelling with obscuration of the blood vessel, and large area of subretinal fluid in the macular area of the left eye.**

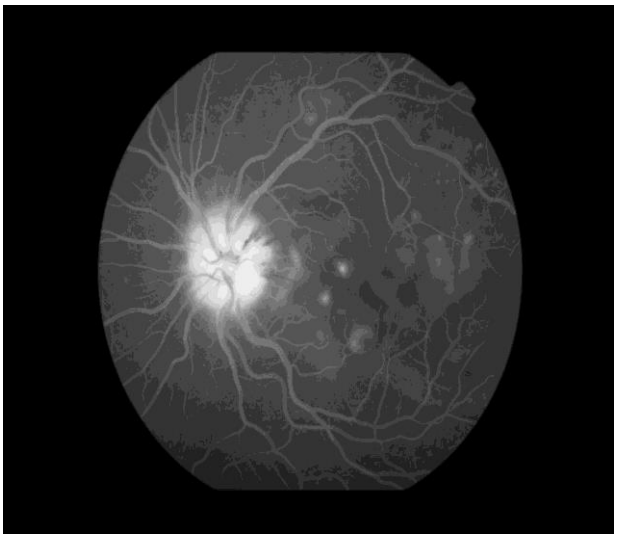

**Figure 3: Mid FFA phase, show hyperflurescince of the optic disc (correlated to the disc leakage), and multiple subretinal area of hypoflurescnce with area of early hyperflurecnce (correlated with the subretinal fluid).**

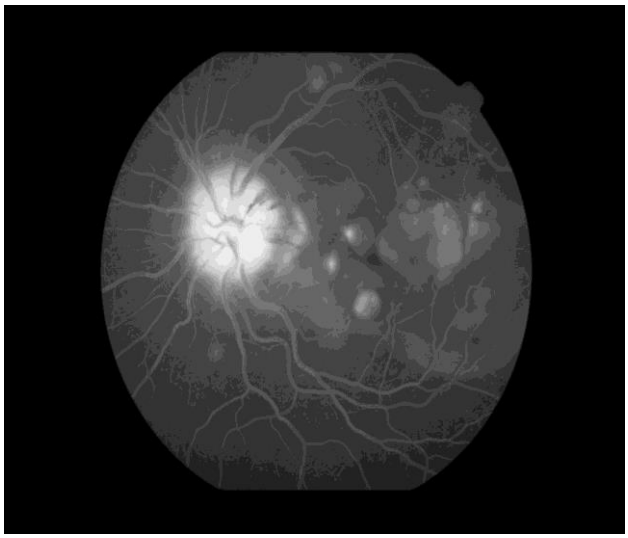

**Figure 4: Late FFA phase: show hyperflurescince of the optic disc (correlated to the disc leakage), and multiple subretinal area of hyperflurescnce (correlated with the subretinal fluid).**

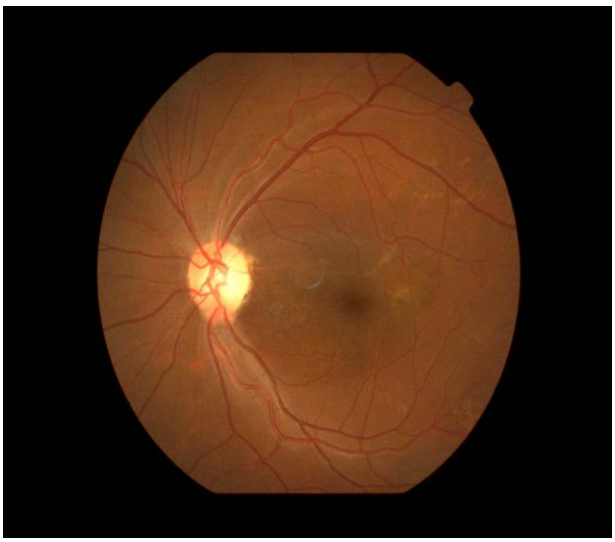

**Figure 5: Fundus photo of the left eye after completion of the treatment show no disc swelling with mild temporal pallor, and complete resolution of the subretinal fluid with mild RPE changes.**

## DISCUSSION

TB is as a systemic disease involving organs other than lungs, including the eye.[5] Ocular TB involvement is a rare event (1%), that might occur with or without manifestations of systemic TB and can affect any part of the eye.[6] Choroidal TB is the most common manifestation of ocular TB.[5]

In this case, choroidal TB occur without systematic manifestations which is very rare presentation as chest x-ray and computerized tomography (CT)- scan of the chest were normal. However, PPD skin test for TB screening was strongly positive (more than 30mm indurations). Up to our knowledge, only two recent studies had the same history (i.e. choroidal TB without systematic manifestations).[5,7]

In our care, we depend on typical clinical finding, Indian nationality (endemic of TB), and strongly positive PPD skin test to diagnose Choroidal tuberculoma. In a case defined by Sarvananthan et al (1998), ocular histopathological examination was done to confirm the diagnosis.[8] In another case defined by the same author, DNA amplification of M. tuberculosis by polymerase chain reaction (PCR) on aqueous humor sample was done to confirm the

diagnosis.[8] However, sensitivity of this tool is very low, mostly due tothe thick cell wall of M. tuberculosis and its relatively low bacterial load in the ocular fluids.[5]

Quite recently, QuantiFERON-TBor enzyme- linked immunosorbent spot has been used to measure interferon gamma to diagnose TB infection.[9] Unfortunately, QuantiFERON was not available at the time of diagnosis and treatment of our patient.

In this cases, imaging techniques such as Optic coherence tomography (OCT), Fluroscene angiography and Ultrasound were done to confirm the diagnosis. They also have a role in excluding other diagnoses, especially intraocular tumors or infective abscesses.[6] OCT scans is of great help to differentiate choroidal granulomas from other non-inflammatory conditions.[5]

We treated our case by 4 anti-TB medication (Isonicotinylhydrazide "INH", Rifambicin, Ethambutol and Pyrazinamide) and after two months, ethambutol and pyrazinamide were stopped whereas INH and Rifambicin were continued and stopped after 10 months. Visual recovery, normalization of fundus examination as well as evident reduction of inflammation were achieved with this therapy and confirmed in the present case. The efficacy of such regimen has been reported by Zhang et al (2012).[10]

In conclusion, this lesion can mimic tumor and takes long time to be properly diagnosed as choroidal tuberculoma. In this care, fortunately, we diagnosed this lesion at an early stage and treated immediately well and the patient vision was improved to normal vision. Ophthalmologists should be aware of this rare presentation of TB, and the importance of the PPT skin test to confirm the diagnosis of such lesions.

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