

**EXTRAPULMONARY
OCULAR TUBERCULOSIS
REFERENCED FOR
TREATMENT IN A
FAMILY HEALTH UNIT:
A CASE REPORT**

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Abstract: Tuberculosis is an infectious disease caused by the agent *Mycobacterium tuberculosis*, which primarily affects the lung tissue, and may affect any other organ such as through the hematogenous route. Ocular tuberculosis is a form of extrapulmonary tuberculosis, with an incidence of 1 to 2% in systemic tuberculosis. It can affect all ocular structures, being the uvea most frequently affected. As it is an epidemic disease in Brazil, primary health care is very important for correct diagnosis and early specific treatment. We report the case of a 43-year-old male patient who presented with uveitis followed by retinal detachment. Only the IGRA marker quantiferon (Interferon-Gamma Release Assays) proved to be reactive, diagnosing extrapulmonary ocular tuberculosis.

Keywords: Tuberculosis ocular, Uveitis, Primary Health Care, Interferon-gamma Release Tests.

INTRODUCTION

Tuberculosis is an infectious disease caused by the agent *Mycobacterium tuberculosis*, transmitted from person to person through the respiratory tract, which primarily affects the lung tissue and can affect any other organ such as through the hematogenous route.¹ Ocular tuberculosis is a form of extrapulmonary tuberculosis, with 1 to 2% effect on systemic tuberculosis. It can affect all ocular structures, being the uvea most frequently affected.²

The disease can be present even without systemic disease. The mechanism of ocular and adnexal involvement includes bacillary invasion or disease of immunological origin.³ Granulomatous anterior uveitis and posterior uveitis with choroidal involvement are the most common manifestations of ocular tuberculosis.²

Tuberculosis is of great importance as one of the etiologies of uveitis in our country, according to data published in the national

literature¹, and it is understood that primary health care is of great importance in correct diagnosis and early specific treatment, aiming to improve the patient's visual prognosis.

OBJECTIVE

Report the importance of presumptive clinical diagnosis in cases of extrapulmonary ocular tuberculosis and the fundamental role of Primary Health Care in providing treatment and in the success of therapeutic adherence.

METHODS

The information contained in this clinical case description was obtained through anamnesis, physical examination, complementary exams and literature review.

CASE REPORT

E.C.J., male, 43 years old, without comorbidities. Five months ago, he presented black scotomas in the left eye (LE). Approximately 6 hours after the onset of the ocular symptom, he developed a moderate-intensity frontotemporal tightness headache, accompanied by retro-orbital pain in the LE, using analgesics to improve the condition.

On the third day of symptoms, the condition worsened, with the presence of loss of visual acuity in the LE and purulent ocular discharge (Image 1). Again, E.C.J. sought ophthalmological care, where the hypothesis of uveitis of cause to be clarified was raised, being prescribed sulfamethoxazole/trimethoprim for 15 days and prednisone for 30 days.

Sixteen days after the onset of the condition, there was an improvement in the ocular hyperemia, however, the patient presented ablepsia in the LE. The retinal specialist performed an ocular ultrasound, showing retinal detachment and vitreous condensation, suggestive of an inflammatory process (Image 2).



Image 1: Presence of hypopygium associated with conjunctival hyperemia.

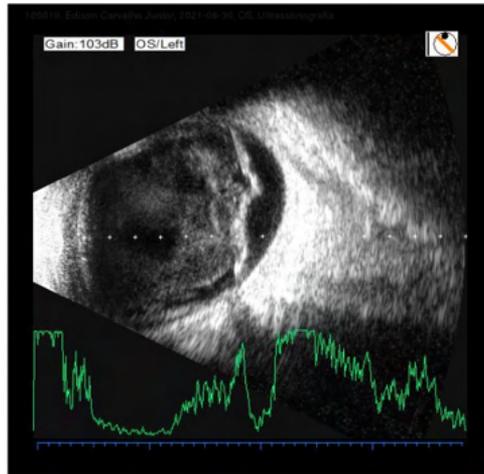


Image 2: Ocular ultrasound showing retinal detachment and vitreous condensation, suggestive of an inflammatory process.

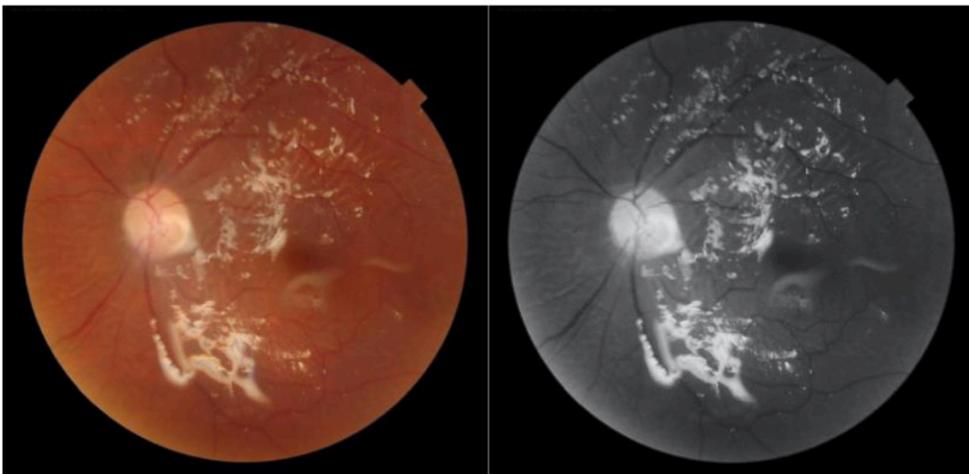


Image 3: Left eye retinography's.

Several complementary exams were carried out. Among them, only the IGRA marker quantiferon (Interferon-Gamma Release Assays) proved to be reactive, with suspicion of extrapulmonary ocular tuberculosis. The retinal specialist performed a surgical procedure with vitrectomy and photocoagulation, with subsequent culture of the collected material, the result of which was negative for ocular tuberculosis. Postoperatively, the patient used oral corticosteroid therapy and moxifloxacin + dexamethasone eye drops for 35 days.

Three months after the onset of symptoms, a fundus photograph was performed, demonstrating the changes contained in Image 3.

The infectologist referred a patient to the Family Health Unit (USF) to start multidrug therapy for 1 year for tuberculosis, with the usual therapeutic regimen (Rifampicin, Isoniazid, Pyrazinamide and Ethambutol), along with evaluation of contacts through dosage Interferon Release Assays-Gama (IGRA), the wife's result being positive. Awaiting the result of the examination of other family members.

DISCUSSION

We present a clinical case of a patient with extrapulmonary ocular tuberculosis, which is the only clinical manifestation of the disease.

The diagnosis of ocular tuberculosis is uncommon, usually based on suggestive clinical history, intraocular findings, and laboratory evidence of *Mycobacterium tuberculosis*.¹

Because the etiologic agent is an aerobic agent and has tropism for regions with high oxygen concentration, the most common ocular lesion in ocular tuberculosis is inflammation of the uveal tract, due to its rich vascularization. Uveitis can be classified as anterior, intermediate or posterior.

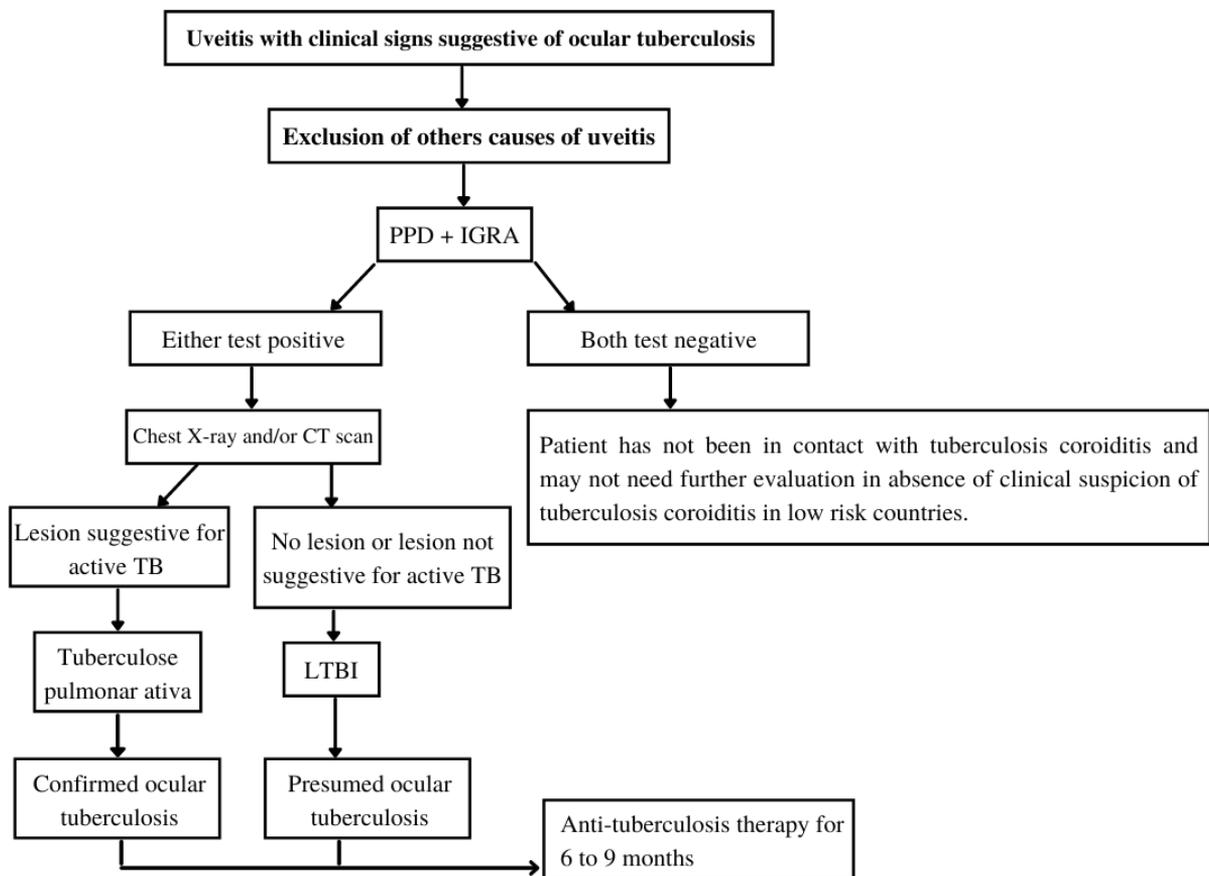
Posterior uveitis is the most common sign of ocular tuberculosis, and may present as multifocal, central or serpiginous, tubercles, neuroretinitis or choroidal granuloma.⁴

Several studies have proposed diagnostic algorithms with the aim of systematically investigating the tuberculous etiology in cases of uveitis.^{4,5} The definitive diagnosis of ocular tuberculosis can only be made by positive culture for *Mycobacterium tuberculosis* in ocular tissue or fluids, in addition to PCR. However, due to the small amount of bacteria in the eyeball, almost all diagnoses are presumptive. As it is a type of extrapulmonary tuberculosis, about 60% of patients have no sign of pulmonary involvement, which does not exclude the diagnosis of ocular tuberculosis.⁵

Furthermore, although diagnostic tools have advanced, the clinical diagnosis of ocular tuberculosis still remains largely presumptive, based on a combination of positive Purified Protein Derivative (PPD) test, measurement of Interferon-Gamma Release Assays (IGRA), radiographs/CT scans suggestive of pulmonary tuberculosis and corroborative evidence of systemic infection after ruling out differentials.⁶

Thus, the clinical findings, associated with complementary tests and taking into account the local epidemiology of the state of Mato Grosso, ocular tuberculosis becomes a likely diagnosis in the case presented.^{4,5}

There is no protocol that defines the ideal time to start treatment, the duration of therapy, anti-tuberculosis drugs and the use of corticosteroids. However, therapy with a basic regimen (Rifampicin, Isoniazia, Pyrazinamide and Ethambutol) for a period of 6 to 9 months is recommended. Therapy lasting 9 months was associated with a reduced risk of inflammatory recurrence. Therapy should not be discontinued even in the absence of clinical improvement during its course.⁴



Abbreviations: IGRA: Interferon-Gamma Release Assays; TB: Tuberculosis; LTBI: Latent Tuberculosis Infection; PPD: Purified Protein Derivative Skin Test; CT: Computed Tomography

Flowchart 1: Explanation of diagnostic pathways for patients with suspected Ocular Tuberculosis.

Adapted: Abdismadov A e Tursunov O, 2020⁶

CONCLUSION

In a country like Brazil, where tuberculosis is endemic, it is understood that the clinic is capable of directing a presumptive correct diagnosis for an early start of treatment of the disease, so that extrapulmonary ocular manifestations can be identified in advance, avoiding the worsening of the disease and permanent visual sequelae. Primary Health Care has a fundamental role in this aspect, providing treatment and mainly supervised monthly doses, which contribute to adherence and therapeutic success.

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