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CASE REPORT

Choroidal Tuberculoma as a Presenting Sign of Tuberculosis

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Abstract:

The unusual ocular type of tuberculosis (TB), known as choroidal tuberculoma, poses diagnostic and treatment challenges, particularly when it occurs in the absence of other disease signs. Patients with ocular tuberculosis have choroidal tuberculomas. They rarely present as the first sign of tuberculosis without any prior systemic symptoms, and they typically occur in patients who have had the disease in the past. We present a 13 year old Boy with unilateral choroidal tuberculoma with meningitis as the primary sign of presumptive ocular tuberculosis allowed for early therapy to be started.

Keywords: Mycobacterium tuberculosis, tuberculoma, choroid, choroidal mass, OCT, QuantiFERON-TB

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Introduction

Large solitary lesions called choroidal tuberculomas typically develop in people with a history of tuberculosis (TB) [1]. Young patients with chronic illnesses frequently experience them. They are typically more clearly defined than their counterpart choroidal tubercles because there is less surrounding retinal edoema. Typically, they are found in the posterior pole, especially in the parafoveal region [2]. When a patient has ocular TB without a systemic presentation, it is uncommon for choroidal tuberculoma to make its initial appearance. Tuberculosis of the eye is uncommon. Just 1% of tuberculosis cases worldwide are caused by it [3,4]. Either systemic tuberculosis is present or absent when ocular tuberculosis develops. It typically manifests as posterior uveitis, particularly as many choroidal tubercles. A massive choroidal tuberculoma caused by ocular tuberculosis is extremely uncommon [3].

Within a tuberculoma, the tubercle bacilli proliferate, causing exudative retinal detachment and tissue damage through liquefactive necrosis [3]. Clinical evaluation of the system, therapy effectiveness, and diagnosis are done. Investigative techniques like Fundus fluorescein angiography (FFA) and USG B-scan can rule out other diagnoses like amelanotic choroidal melanoma and choroidal metastases [4,5,6]. Correct diagnosis and treatment results in choroidal tuberculoma clearing up and visual acuity improving. A 6- to 12-month anti-tubercular regimen is regarded as conventional therapy. Although if inflammation is reduced in advanced disease, symptoms may not completely go away [4-7].

In their reviews of intraocular TB, El-Asrar et al. and Gupta et al. provided the following definitions for assumed intraocular TB: Strongly positive tuberculin skin test results ((≥15 mm area of induration/necrosis), radiological proof of a healed or active tubercular lesion in the chest, or proof of an active extrapulmonary TB infection, as determined by microscopic examination or by culture from affected tissue; positive response to antituberculosis treatment with no relapse; ocular findings consistent with possible intraocular TB; and ancillary testing [8,9]. According to reports, the most typical intraocular symptom of tubercular posterior uveitis is several choroidal tubercles. Less frequently, intraocular TB may manifest as a massive tuberculoma, or a single, big yellow or grey lesion, typically in the posterior pole [10]. A tuberculoma's rapid bacilli multiplication can lead to tissue loss by liquefactive necrosis, which can result in an exudative retinal detachment around the tumour [11].

Only a sizable isolated choroidal tubeculoma was present in this case; there was no exudative retinal detachment. 20% of patients with extrapulmonary involvement and 50% of those with extrapulmonary involvement may have negative PPD skin test results (12). Interferon gamma measurement by QuantiFERON-TB® or enzyme-linked immunosorbent spot has emerged as a new method to identify tuberculosis infection in recent years. Since it is unaffected by prior BCG vaccinations, QuantiFERON-TB®, an indirect test for Mycobacterium tuberculosis infection, has higher specificity than PPD (13). A conclusive diagnosis would be made by intraocular fluid study or tissue biopsy, but these procedures are not usually available.

Nucleic acid amplification can be used to diagnose using either transcription-mediated 16S RNA amplification or PCR amplification of mycobacteria DNA sequences. Furthermore utilised for diagnosis, chorioretinal biopsy is compatible with nucleic acid amplification methods. The FFA demonstrates late leaking and early hyperfluorescence of active choroidal lesions. Early blocked hyperfluorescence with late staining is seen in cicatricial lesions. Large tuberculomas exhibit moderate to low internal reflectivity, which allows ultrasonography to identify them from intraocular cancer.

Here, we report In this case, choroidal tuberculoma with meningitis was the only presenting symptom; ocular TB was assumed to be the cause. We received permission to use the

patient's name and the mentioned image in this case report.

Case Report

A 13 year old previously healthy boy initially presented to our Outpatient Department with complains of fever ,vomiting & headache and photophobia for 20 ,15,and 5 days duration respectively with significant weight loss.He had not received BCG and there was no history of seizures.He had received several course of antibiotics without any response.

There was no substantial medical history, and there have never been any comorbid conditions. Physical examination revealed a sick looking, moderately anemic, febrile child. His pulse rate, respiratory rate and blood pressure were 112/min, 17 breaths/min, 112/74 mm Hg respectively.Auscultation of chest revealed normal finding .Signs of meningeal irritation were present. Alternate convergence Present [Fig 1], pupils were equal and reactive, skin sensations, muscle tone and cranial nerves were intact.Deep tendon reflexes were normal and Babinski reflex was absent

Among laboratory investigations hemogram showed Hb -11.2 g/dl, TLC -8600/cumm, DLC -P83L14M01E02 and ESR-40 mm in 1st hour. Mountoux test and sputum for AFB were negative.Skiagram of the chest showed normal findings. Widal test positive with TO Titre 1:320.Lumbar puncture was done and cerebrospinal fluid was clear [Fig 2] with total nucleated cell count 500 cells /cumm, polymorphs 90%, lymphocytes and mononuclear cells 10%, and protein content was 6.6 gm with a low grade glucose level equal to 14 gm/dl.

Microbiologic direct exam was negative and revealed absence of bacilli .culture was negative & True Nat shows mycobacterium tuberculosis complex -MTB rifampicin sensitive complex .Renal and Liver functions tests were normal .PPD skin testing was negative .

CECT Brain shows mild prominence of bilateral lateral ventricles and 3rd ventricle with normal study for brain parenchyma.MRI brain scan was not done.

Ocular examination shows normal pupillary reflexes. Fundus examination of both eyes revealed hypopigmented and hyperpigmented lesions in the foveal area and temporal to the optic disc [Fig 3] suggestive of tuberculous choroiditis .Optic disc of both eyes were hyperaemic and blurring of margin was seen suggestive of papilloedema .On Indirect ophthalmoscopy right eye showed hyperpigmented well defined lesions in the foveal area and few hypopigmented lesions inferior to optic disc, left eye- hypopigmented lesions temporal to the optic disc.

We investigated this patient thoroughly for his immune status.

He had been diagnosed with tubercular choroiditis and suspected tuberculous meningitis. Papilloedema was established. She was started on anti-tubercular therapy for a total duration of 12 months as 2(HRZE) in intensive phase and 10(HR) and steroids to which child responded and there was significant improvement in vision.Patient was advised regular follow ups.

Result

After receiving treatment, the patient had made great progress. Upon review choroid tubercles was found to be healed and resolved in both eyes [Fig 4].

Discussion

The lungs are the main organs affected by the deadly infectious disease tuberculosis. The Mycobacterium tuberculosis complex contains acid-fast bacteria that cause tuberculosis (TB) [4]. Aside than the lungs, any other body tissue can be affected. One kind of TB that poses a hazard to vision is ocular TB [3,4]. The involvement of the lid and adnexa, as well as orbital cellulitis, are some of the different ocular symptoms of tuberculosis.

Conclusion

Choroid tubercles considered highly specific for miliary tuberculosis,may occur in isolated tuberculous meningitis. As the ocular lesion completely heals, prompt care of choroidal inflammation helps avoid vision loss. Early TBM diagnosis is essential for preventing death and impairment symptoms in youngsters. CSF investigation and neuroimaging is important to establish the diagnosis but despite advances in diagnosis with Xpert MTB/RIF, most children with TBM are not bacteriologically confirmed.

This case highlights the facts that a seemingly innocuous eye movement could be associated associated with significant Systemic tuberculosis & thus requires thorough investigation and timely prompt treatment.

Figure 1 (eyes). Alternate Convergence

Figure 2. (CSF). Clear CSF

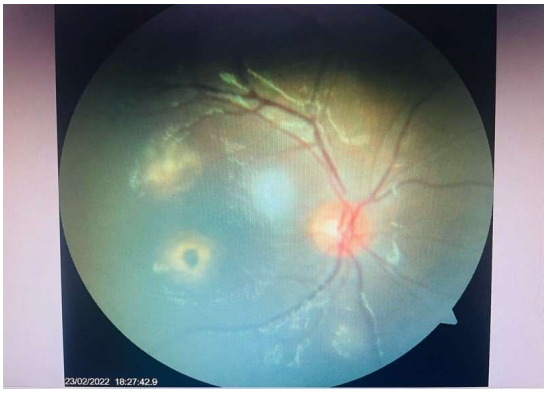

Figure 3. Fundus: Hypopigmented & Hyperpigmented Lesions in the Foveal Area and Temporal to Optic Disc

Figure 4. Fundus: Resolution of Lesions after ATT.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the forms, the parents have given their consent

Conflicts of interest

The authors declares that they do not have conflict of interest.

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