

CASE REPORT

OCULAR TUBERCULOSIS: BASICS HELP WITH DIAGNOSIS

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ABSTRACT: Ocular manifestations of Tuberculosis are anterior chronic recurrent granulomatous uveitis or posterior uveitis - multifocal choroiditis, choroidal tubercles, serpiginous like choroidopathy or retinal vasculitis. Tubercular uveitis is one of the few entities with definitive management. Hence diagnosis is of paramount importance as we can offer a cure to the patient. We report a diabetic presenting with minimal symptoms and acute severe uveitis with unusual diffuse choroidal involvement. Her systemic workup showed a raised ESR and strongly positive mantoux test. In spite of her unusual presentation, mantoux test helped us clinch the diagnosis and she rapidly improved with Anti Tubercular Therapy.

KEYWORDS: Tuberculosis, Intraocular Tuberculosis, Tuberculin skin test, Gamma-interferon assay.

INTRODUCTION: Tuberculosis has been extensively reported in our subcontinent. Only 10% of infected individuals become symptomatic; 90% remain infected without manifesting the disease.¹ Ocular morbidity in patients with active tuberculosis has been reported to be as low as 1.39%.²

Ocular tuberculosis could be a primary infection; which usually affects the conjunctiva, cornea or sclera or it could be secondary to hematogenous spread of infection or hypersensitivity reaction.³ Ocular manifestations such as chronic granulomatous uveitis, choroid tubercles, serpiginous choroidopathy like entity, choroiditis, retinal vasculitis have been reported in tuberculosis.⁴ Diagnosis of ocular tuberculosis is usually presumptive unlike systemic tuberculosis. This is because ocular fluid analysis is invasive, minute amounts can be obtained and microbiological studies are difficult, demonstration of mycobacterium near impossible and supportive tests are difficult to interpret and expensive.

Steroids, the main stay of treatment for the other immune mediated forms of choroidopathy, may be detrimental in infections like tuberculosis without the cover of ATT for sight and life. There are a spate of newer techniques and tests to aid diagnosis of ocular tuberculosis. Yet, basic tests like mantoux may still be the best indicator even for ocular tuberculosis as is seen in our case.

CASE REPORT: A 61 year old lady presented to us with history of defective vision in the Right Eye (RE) noticed about 4 months back. She is a known diabetic on medication for the past 10 years, and a hypertensive on regular medication for 5 years. She had no history of pain, redness or floaters in the eyes and did not have any other ocular or systemic complaints. She denied any history of contact or exposure to tuberculosis. She lived in an old age home. She had not been treated before for any ocular problems.

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On general physical examination, she was conscious, oriented with right arm blood pressure in supine position 130/80 mm of Hg. Pulse was 90/min, regular in rhythm, normal in volume and character. There was no pallor, icterus, clubbing, cyanosis, lymphadenopathy or pedal edema. Her Body mass index was 34. Dermatological and spine examination was clinically normal.

Her ocular evaluation revealed Best Corrected Visual Acuity (BCVA) of 20/200 in the right eye (RE) and 20/40 in the Left Eye (LE). Both eyes anterior segment showed features of active uveitis (3+cells, flare 2+) with posterior synechiae as shown in fig. 1. Lens was clear in both eyes with grade 1 vitritis in the RE.

Fundus showed the presence of irregular yellowish lesions close to the disc in the RE with mild disc congestion (Fig. 2). LE fundus was within normal limits. Intraocular pressures in both the eyes were within normal limits. Ultrasound B Scan of the RE showed significant thickening of the choroid (Fig. 3).

An Optical Coherence Tomography of the RE revealed subfoveal neurosensory detachment (Fig. 4).

Respiratory, abdominal and cardiovascular system examination was unremarkable. Neurological examination revealed decreased visual acuity in both eyes.

Investigations revealed Hemoglobin % of 13.2g/dl, total leucocyte count slightly raised at 12, 500 cells/mm³ with relative lymphocytosis (31%). ESR was 43mm/1st hour, random blood sugar 245mgs% and mantoux test was strongly positive 33x38mm with induration. HbA1c was 7.2%. Renal and Liver function tests were within normal limits. Total cholesterol was 242mg/dl with Triglycerides were 156mg/dl.

Chest X-Ray was within normal limits.

Based on the strongly positive mantoux test, raised ESR and ocular clinical findings, she was presumed to have tuberculosis and started on antitubercular drugs. She responded well to antitubercular therapy.

DISCUSSION: Aetiology cannot be established in 30-60% of uveitic patients.⁴ Tuberculosis is one of few uveitic entities with a definite effective treatment. Early diagnosis of ocular tuberculosis is important for sight and life especially since these patients may need oral steroids. Diagnosis is presumptive for most part and relies on strong clinical suspicion and typical presentations.

Most common clinical findings of intraocular TB are chronic recurrent granulomatous uveitis,⁵ solitary or multiple choroidal nodules, choroiditis, serpiginous like choroidopathy and retinal vasculitis.⁴ Nodules suggest direct hematogenous infection while vasculitis and choroiditis are more likely to be secondary to immune hypersensitivity.¹ In these patients with immune hypersensitivity, lack of infective organism poses further challenges to diagnosis. Definitive microbiological diagnosis is usually impossible given the small of tissue or fluid available for testing in ophthalmology.

In non-endemic areas the diagnosis is mainly assisted by positive tuberculin testing. Various factors like BCG vaccination, dissemination, immunosuppression can result in false positive and negatives (17-29%).³ Negative chest X-ray and sputum may have limited use as 60-

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80% of extra pulmonary tuberculosis may not have pulmonary involvement.^{1, 6} Gamma interferon assay (Quanti FERON TB gold test) may help in detection of latent tuberculosis especially in BCG vaccinated patients. But, conflicting reports have shown almost similar incidences of false positives or negatives as tuberculin testing and this may not show much superiority versus tuberculin testing. PCR (polymerase chain reaction) for ocular fluid testing is invasive and have good sensitivity but specificity is around 77%.¹ Microcontamination may be the usual culprit.

In our patient with unusual severe uveitic presentation, mantoux was the leading light and this age old basic test still plays an important role in diagnosis.

CONCLUSION: Tuberculosis can have myriad presentations many of which are vision threatening. Most are chronic or recurrent uveitis but some may present with an acute course without other features of systemic tuberculosis as in our case. In suspected ocular tuberculosis, systemic evaluation can give us valuable clues towards diagnosis. In our Indian population, high index of suspicion is a must and early intervention could salvage good vision.

REFERENCES:

1. Varma D, Anand S, Reddy AR, Das A, Watson JP, Currie DC et al. Tuberculosis: an under-diagnosed aetiological agent in uveitis with an effective treatment. 2006 Sep; 20(9): 1068-73.
2. Biswas J, Badrinath SS. Ocular morbidity in patients with active systemic tuberculosis. Int Ophthal 1995-1996; 19(5): 293-8.
3. Bodaghi B, LeHoang P. Ocular tuberculosis. Curr opin Ophthalmol Dec 2000; 11(6): 443-8
4. Bansal R, Gupta A, Gupta V, Dogra MR, bambery P, Arora S K. Role of Anti-Tubercular Therapy in Uveitis with Latent/manifest Tuberculosis. Am J Ophthalmol 2008 Nov; 146(5): 772-9.
5. Samson MC, Foster CS. Tuberculosis. In: Foster CS, Vitale AT (eds). Diagnosis and treatment of uveitis. WB Saunders Company: Philadelphia, 2002: 264-272.
6. Alvarez S, McCabe WR. Extrapulmonary tuberculosis revisited: a review of experience at Boston City and other hospitals. Medicine (Baltimore). 1984 Jan; 63(1): 25-55.

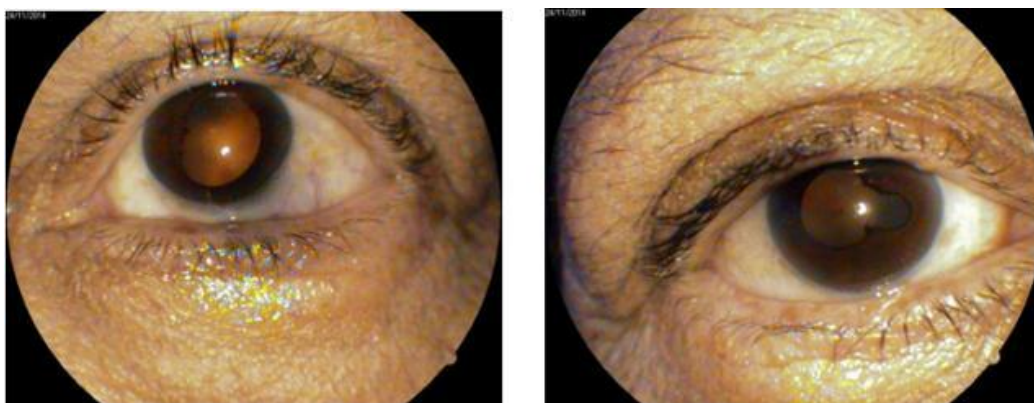


Fig. 1: Anterior segment of both eyes showing the presence of posterior synechiae

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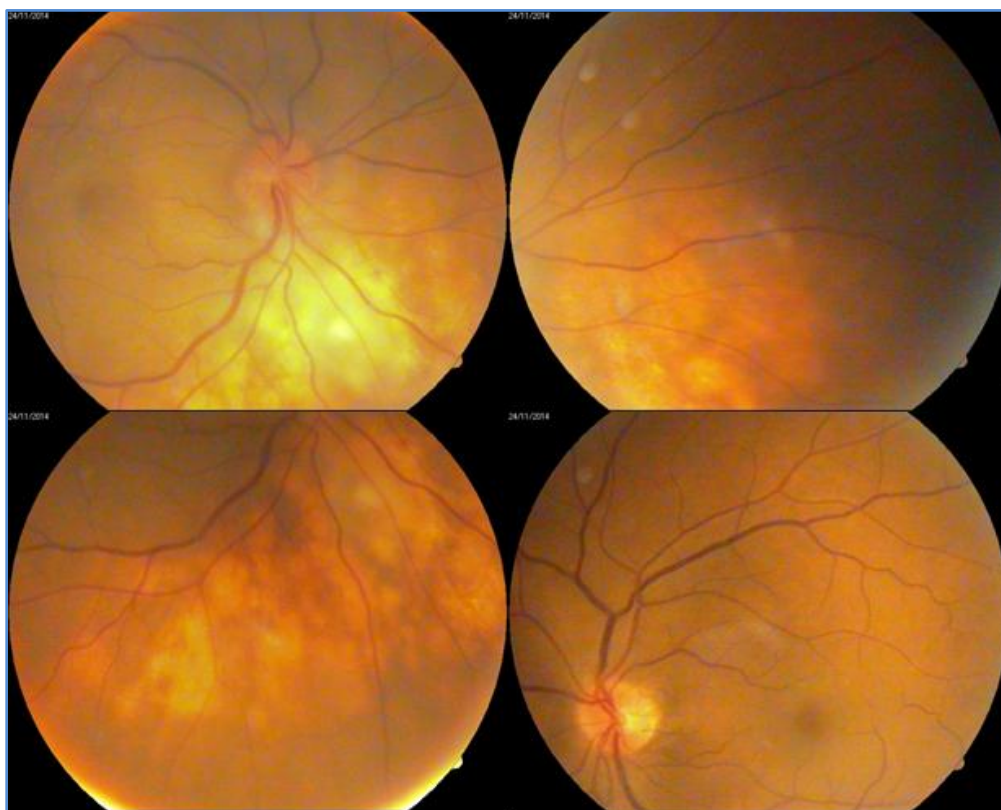


Fig. 2: Fundus of RE showing the presence of yellowish choroidal lesions in the inferior part of fundus. LE within normal limits

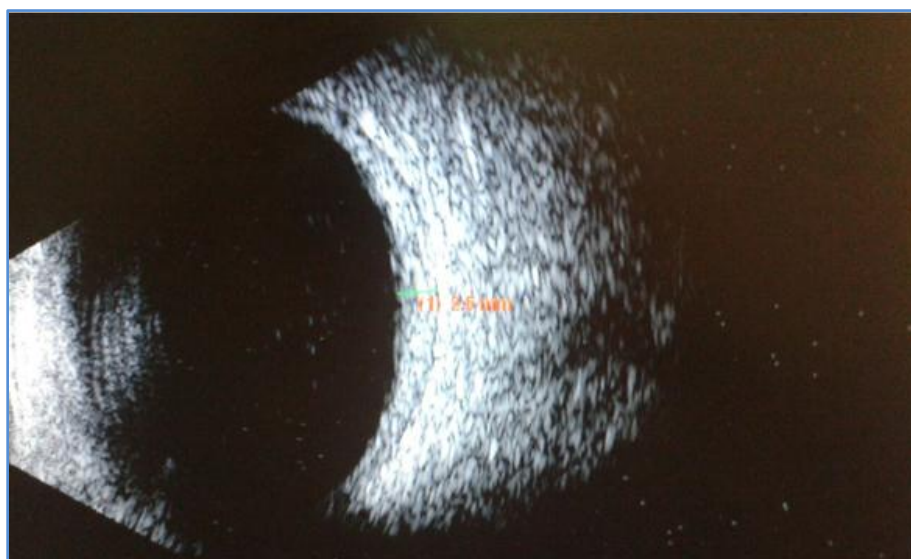


Fig. 3: Ultrasound B scan of the RE showing Presence of diffuse choroidal thickening

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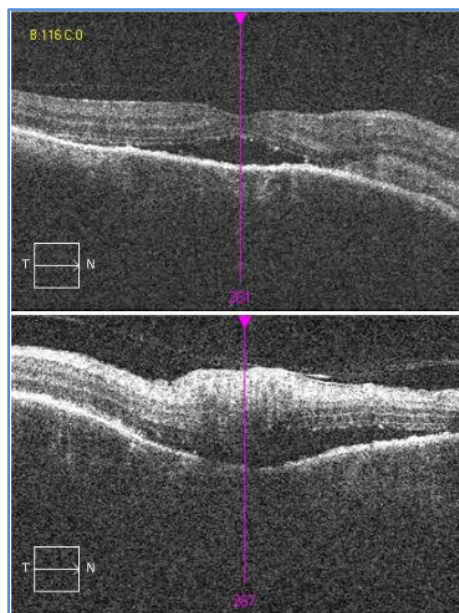


Fig. 4: OCT showing subfoveal neurosensory detachment and fluid in the RE of the patient and scan through the lesion showing oedema

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