

# Trans-septal Triamcinolone in management of cystoid macular edema secondary to bilateral ocular choroidal miliary tuberculosis

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## Abstract

**Purpose:** Here we report a case of ocular miliary tuberculosis that was treated with trans-septal Triamcinolone along with anti tubercular drugs.

**Methods:** A young apparently healthy lady was diagnosed with ocular choroidal miliary tuberculosis with spill over anterior uveitis with cystoid macular edema based on fundus examination and Optical Coherence Tomography (OCT). She was treated with three doses of trans-septal triamcinolone and six months of anti tubercular drugs.

**Result:** The patient responded well to the treatment with resolution of inflammation and regaining good vision.

**Conclusion:** Trans-septal Triamcinolone acetonide is a good option in management of cystoid macular edema associated with ocular tubercular uveitis.

**Keywords:** ocular tuberculosis, miliary tuberculosis, trans-septal triamcinolone

## Introduction

Tuberculosis has an enormous variety of ocular manifestations of which uveitis is the most common<sup>1</sup>. Classically described as chronic granulomatous inflammation, it can involve either anterior or posterior segment alone or can result in panuveitis. Anterior uveitis most commonly presents with mutton fat keratic precipitates and iris nodules along with other signs of inflammation. Posterior uveitis may present with choroidal tubercles [1,2]. These may be solitary or multiple, of 0.3 cm to several centimeters in size[1], more commonly located in posterior pole, initially yellow with ill defined margins and may become more sharply demarcated and pigmented with time [1]. Miliary tubercular choroiditis is due to unchecked hematogenous dissemination of the tubercle bacilli. Like other tissues the choroid is studded with millet seed sized tubercles [1,3]. Ocular miliary tuberculosis is commonly accompanied by systemic manifestations of the disease as well, so its diagnosis warrants complete systemic examination and prompt treatment. There are very well defined RNTCP guidelines for treatment of this disease, according to

which a case of miliary tuberculosis limited to the eyes is treated with anti tubercular drugs-Izoniazid, Rifampicin, Pyrazinamide and Ethambutal in specified dosage per kilogram of body weight<sup>4</sup>. However hepatotoxicity is a well known adverse effect and monitoring of liver functions is of immense importance.

Trans-septal steroids offer the advantage of achieving good concentration of the drug in ocular tissues with less dependence on compliance of the patient. If adequate monitoring of intra ocular pressure and vigilance for systemic manifestations of adverse effects of steroids is ensured, this route of steroid administration is very useful in combating the inflammation caused by ocular tuberculosis.

## Case report

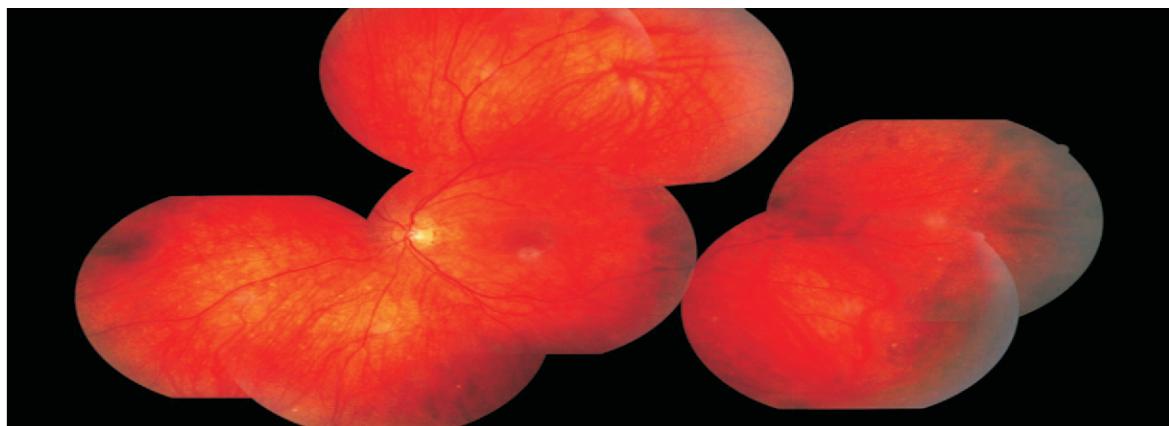
A 25 year old lady, apparently healthy otherwise, presented with complaints of redness, photophobia and diminution of vision for 2 months. Her complaints were episodic, lasting for 5 to 7 days each time, with improvement of symptoms in intervals. On examination her uncorrected visual acuity was 6/60 in each eye with no improvement on

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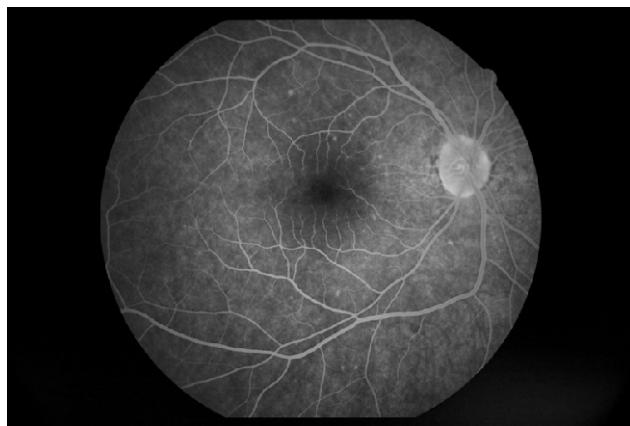
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pin hole vision. There was ciliary congestion in both eyes. Non granulomatous fresh keratic precipitates were present in both eyes with grade 2 anterior chamber cells and flare. Both pupils were sluggishly reactive to light. Fundus examination revealed bilateral miliary tubercles(figure 1). The intra ocular pressure readings were within normal limits. Bilateral cystoid macular edema was visualized on OCT and fundus fluorescence angiography. Fundus fluorescein angiography also showed initial hypofluorescence with late hyperfluorescence at the site of miliary tubercles(figure 2, 3 and 4). The

Mantoux intradermal test with 0.5U purified protein derivative was strongly positive. Systemic clinical examination, chest x-ray, ultrasound abdomen and MRI scan of brain were all within normal limits. A diagnosis of ocular choroidal miliary tuberculosis with spill over anterior uveitis was made.



**Figure 1. Miliary choroidal tubercles scattered all over. Note the yellow, round lesions of uniform size. There are also clusters of tubercles.**



**Figure 2 and 3. Left eye: cystoid macular edema is much more prominent than on the right side**

The patient was started on anti tubercular drugs as per RNTCP category one. Topical Prednisolone eye drops were given in tapering dosage. At one month follow up, the anterior segment inflammation was found to be resolving, with few non granulomatous keratic precipitates present. The miliary tubercles had reduced in number. However macular edema was still persistent and patient had a visual acuity of 6/36 in both eyes. Three doses of trans-septal triamcinolone acetonide 40 mg were given at intervals of three weeks, in each eye. The macular edema showed signs of resolution at each follow up, with improvement in visual acuity. After 4 and half months of anti tubercular treatment patient

developed hepatitis due to drug toxicity, forcing the physician to stop the anti tubercular medication. Patient was given intramuscular Streptomycin injections for a month. The liver function tests returned to normal levels and the previously given anti tubercular therapy was resumed, with no further complications. Totally anti tubercular therapy as per RNTCP guidelines was given for 6 months. Six months after starting treatment, on fundus examination no miliary tubercles were found. There was complete resolution of macular edema with mild pigmentation which was confirmed on OCT. The patient is symptom free and enjoys best corrected visual acuity of 6/6 in both eyes.



**Figure 4. Left eye: disappearance of choroidal tubercles with resolution of macular edema. Note the pigmentary changes over macula.**

## Discussion

Miliary tuberculosis of the choroid is most often accompanied by systemic manifestations of the disease. The classic description is that of a granulomatous inflammation either confined to the posterior segment or involving the anterior segment as well<sup>1,5</sup>. Here is a case of an apparently healthy young woman who presented with choroidal miliary tuberculosis with spill over anterior uveitis. The anterior segment findings suggested a non granulomatous inflammation. However fundus examination revealed multiple millet seed sized yellow white lesions in the choroid with bilateral

cystoid macular edema. There was evidence of grade 1 vitritis. A diagnosis of primary ocular choroidal miliary tuberculosis with spill over anterior uveitis was made based on clinical findings.

Intradermal Tuberculin test was strongly positive. This case is thus atypical, in that the patient had good general health and thorough systemic clinical examination also did not show any abnormal findings. Exhaustive investigations and imaging did not reveal any focus of tubercle bacillary infection elsewhere in the body. The strongly positive Mantoux test helped in establishing the diagnosis.

Treatment with anti tubercular drugs was instituted as per RNTCP guidelines and there was

prompt resolution of miliary tubercles. Topical and oral steroids failed to reduce the inflammation and the subsequent macular edema that were a threat to the patient's vision. Hence Trans-septal steroids were given. Following this less often used route of steroid administration, there was a remarkable recovery of inflammatory signs with complete resolution of macular edema. The visual acuity improved to 6/6, to the immense relief of the patient as well as the treating ophthalmologist.

### **Conclusion**

Ocular tuberculosis, uveitis in particular, can have myriad manifestations. A high index of suspicion, even when there is no evidence of systemic disease, helps in diagnosis and appropriate management of miliary tuberculosis. Trans-septal steroids are a good option for treating the inflammation accompanying this disease and the damage to tissues arising from it, especially macular edema. Complete anti tubercular therapy and trans-septal steroids together can help us in curing this disease and achieving the best possible visual outcome for our patients.

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