

Tubercular Uveitis with Ocular Manifestation as the First Presentation of Tuberculosis: A Case Series

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ABSTRACT

Tuberculosis is very common disease in India. It is one of the most common causes of Granulomatous Uveitis in our Country even today. So the strongest suspicion in our mind when we are treating a case of Uveitis, should be TB. We reviewed all the cases of clinically suspected ocular tuberculosis attending the Ophthalmology OPD of Sri Siddhartha Medical College between December 2012 and December 2014 who were refractory to routine uveitis management and later on responded to anti-Tubercular treatment. History of TB contact, Ocular manifestation, Demographic Profile of the patients, Diagnostic test, Treatment regime were looked into. Here by we present a case series of 15 cases of refractory uveitis that later were detected to be of tuberculous origin. We studied the characteristic features, complications and correlation of mantoux test, ESR and Koch's contact with these cases.

Keywords: Koch's contacts, Mantoux test, Posterior uveitis

INTRODUCTION

Tuberculosis is very common systemic disease in India. Ocular tuberculosis often manifests as a unilateral and asymmetric disease [1,2]. Anterior uveitis and sclerokeratitis are among the most common manifestation of tuberculosis in the eye [1,2]. Tuberculous choroidal granulomas are due to hematogenous dissemination of the organism, but tuberculous choroiditis and vasculitis is likely to be due to hypersensitivity reactions to the bacterial protein [3]. In addition to choroiditis, neuroretinitis and retinal vasculitis are other common posterior segment manifestations reported [4]. A rare case of cystoid macular oedema as the only ocular presentation of TB has also been reported in 2004 [5].

Diagnosis of ocular tuberculosis has always been a challenge to the ophthalmologists. Mantoux skin test, Chest X-ray and ESR are the commonly advised investigations in suspected cases of ocular tuberculosis. These tests are sensitive but not specific. The specificity of the tuberculin skin test for *M. tuberculosis* increases with larger skin reactions and with a history of exposure to an active case of TB [6]. In addition, it has been demonstrated that indurations greater than 14 mm in size does not correlate to prior BCG vaccination [7].

Hence history of tuberculosis exposure, clinical examination, positive tuberculin test, and x-ray chest had been used in the past for evaluating patients of retinal vasculitis for systemic evidence of tuberculosis. These tests are now complemented with tests with better specificity like the PCR and Gold TB-QUANTIFERON7 [8].

PCR has been used to diagnose ocular TB, using aqueous or vitreous biopsy, but it has more false positive results as it is a sensitive test. However, many a times a uveitic patient is not a surgical candidate and performing a biopsy is not preferred [9].

The ESR is an indirect measure of systemic inflammation, and is neither sensitive nor specific [9]. Diagnosis of ocular TB has always been a challenge. In our case series report, we found history of koch's contact in the past along with mantoux skin test and ESR as significant factors for suspicion of ocular tuberculosis.

CASE SERIES

We reviewed all the cases of clinically suspected ocular tuberculosis attending the Ophthalmology OPD of Sri Siddhartha

Medical College between December 2012 and December 2014, who were refractory to routine uveitis management and later on responded to anti-Tubercular treatment. Refractory Uveitis of other aetiology like Sarcoidosis, Behcets etc., were excluded from the study. Patients with any other associated systemic inflammatory diseases were excluded. All those who did not respond to the routine uveitis treatment, such as topical steroids, and cycloplegics were evaluated with Chest X-ray, Mantoux test, ESR and Routine blood investigation apart from detailed ophthalmologic evaluation.

History of Koch's Contact was stressed and asked for in each patient. Ophthalmic evaluation included visual acuity testing, Slit lamp evaluation, Direct and Indirect Ophthalmoscopy.

Once diagnosed, the patients were started on ATT, The duration of ATT was restricted to 6 months based on World Health Organization (WHO) recommendations for extrapulmonary TB [10]. Corticosteroid therapy was administered (generally starting on the same day as ATT).

All the patients were evaluated before and after completion of the intensive phase of ATT and after completion of the treatment.

Among the cases observed it was found that there were 12 males and 3 females. Nine patients were in the working age group of 21 to 40 years and 4 were in 41 to 60 years age group. All of the 15 cases showed mantoux positive test. Among those patients, 11 patients had a mantoux test between 11-15mm, and 1 patient had a mantoux test of 18mm, and 3 patients had mantoux test between 6 to 10mm. In the observed cases 13 patients had history of Koch's contact in the past, only 2 didn't have a history of Koch's contact. The ESR value in the patient was < 40mm at the end of 1 hour in 11 patients but more than the normal permissible value and > 40 mm at end of 1 hour in 4 patients. The details of the patients included in the cases series is mentioned in [Table/ Fig-1].

The profile of uveitis in our case series was – 5 cases presented with anterior uveitis, 4 cases with intermediate uveitis, 5 cases with posterior uveitis and 1 case with pan uveitis. Only 3 cases presented with complication at the end of complete treatment, which was cataract. Only 1 case presented with recurrence at the end of treatment, as the patient was a defaulter for treatment and was later started on category 2 Anti- Tubercular treatments.

Sr No.	Patient	Clinical Findings	Type of uveitis	Koch's Contact	Mantoux test	ESR Value mm at end of 1 hr	Complication at the 3 months
1	39/ male	Anterior segment –Normal, Vitreous cells ++ Macular Oedema	Intermediate Uveitis	+	14mm	38	NIL
2	40 /male	Anterior seg- Normal Vitreous cells +++ Posterior segment Normal	Intermediate Uveitis	+	15mm	28	NIL
3	39 /male	Anterior Segment Normal, Vitreous- clear , Posterior segment – Choroiditis Patches, macular oedema++	Posterior uveitis	+	14mm	35	NIL
4	65/male	Anterior segment –Normal ,Vitreous clear, Choriditic patches seen Retinal Vasculitis++	Posterior uveitis	+	15mm	32	Cataract
5	50/male	Anterior Segment-Normal Vitreous Cells +2/+3 Choroiditic Patches, VA- 6/18 PHNI	Posterior Uveitis	+	15mm	38	Recurrence
6	53/male	Anterior Segment-Normal Vitreous Cells +1/+2 Posterior segmnt – Normal VA-6/12PHNI	Intermediate Uveitis	+	15mm	52	Cataract
7	50/male	Anterior segment- Normal Vitreous Cells ++ Posterior segment- normal Va- 6/24 PHNI	Intermediate uveitis	+	15mm	55	NIL
8	33/male	Cells +1/flare +2, mutton fat Keratic precipitates,, festooned pupil, vitreous cells-0, Fundus normal, VA 6/18 PHNI	Anterior uveitis	+	8mm	49	NIL
9	40/male	Cells +1/ flare +1 , Keratic precipitates in Arlts triangle , VA-6/36 PHNI	Anterior Uveitis	+	9mm	32	NIL
10	38/ male	Cells +1/ Flare +1 , Keratic precipitates in Arlts triangle , VA -6/60PHNI	Anterior Uveitis	+	9mm	30	NIL
11	41/Female	Cells +2, Flare +2 Mutton fat Keratic Precipitates Vitreous cells +++ Posterior Segment-Diffuse choriditic patches	Pan Uveitis	+	18mm	56	Cataract
12	72/male	Anterior segment – Normal Vitreous Cells++ Posterior segment- Normal	Posterior Uveitis	+	14mm	38	NIL
13	25/male	Cells+2, Flare ++ Fixed Miotic Pupil Keratic precipitate -++ Posterior segment-Normal	Anterior uveitis	+	15mm	35	NIL
14	34/female	Cells+2, Flare ++ Festooned pupil Synechia Vitreous cells –nil Posterior segment-normal	Anterior uvetis	+	15mm	33	Nil
15	35/female	Anterior segment-NIL Vitreous cells -++ Posterior segment- Choroidotic patches	Posterior uveitis	+	14mm	32	NIL

[Table/Fig-1]: Patient details

Cells ++: suggests 2 grade, cells +++: suggests Grade 3.VA- Visual Acuity, ESR – Erythrocyte sediment rate.

DISCUSSION

In our case series maximum patients were in the 21-40 (60%) years age group, and males in the working age group. In a study by Soumyara Basu et al., the mean age group of manifestation of tubercular uveitis was 34.4 ± 12.11 years [11].

In present series we found 12 (80%) to be the male population. In a study by Soumyara Basu et al., it was found that the 67.5% population was males and 32.5% were females [11]. However, in the study by C Sanghavi and C Bell et al., the disease was found to be 59% in females [12]. The variation is probably due to the less endemicity of TB in the population studied that is in developed country.

In this case series all the 15 cases (100%) were positive for Mantoux test (Tuberculin skin test for 5 units PPD) with. 11(73%) patients having induration between 11 mm to 15mm.

In a study by Sanghavi et al., 51% had tuberculous positive with mantoux test and most of the patient had induration in mantoux range > 10mm [12].

In our case series when inquired retrospectively, 13 (87 %) patients had H/o Koch's contact in the past. In a study by Sanghavi, C Bell et al., they found that 52% cases had contact with TB [12]. In another study by Ahmed A, Abu EL Asar et al., the range of mantoux induration was found to be between 15-60mm [13].

Our patients were subjected to ESR blood tests and values were correlated for ocular tuberculosis suspicion. It was found that ESR was only moderately elevated in 11(73%) patients.

In a study by Zaccheus Awortu et al., mean ESR was found to be 53.16 ± 4.92 , which was a study on pulmonary TB [9].

On evaluating the type of uveitis, we found that 5 cases (33%) cases had anterior uveitis and 5 cases (33.3%) had Intermediate uveitis, 4 cases (26.6%) had posterior uvetis as the primary presentation, mostly in form of retinal vasculitis and choriditis patches. Only 1 case (6.6%) had presented with Pan uvetis.

In a study by Gupta V, Gupta A et al., 42% patients had Posterior uveitis and 36% patient had anterior uveitis and 11% had panuveitis and 11% Intermediate uveitis [14].

In our study, 3 patients already had existing cataract which underwent rapid progression to dense posterior subcapsular cataract. No other complication was seen in any of our patients. However, one patient (6.66%) had a recurrence and was later treated with Category 2 of ATT. All other patients received Category 1 of ATT. In a study by Soumyara Basu, Sirajun Munira et al., complicated cataract was seen in 13.7%, vitreous haemorrhage in 13.7% cases and macular inflammation in 12.3% cases [11].

CONCLUSION

Diagnosis of ocular tuberculosis has always been a challenge to ophthalmologists as there is no pathognomic ophthalmic finding for ocular TB. The diagnosis in most of the cases, as seen in our cases depends on the indirect evidence. History of Koch's contact, positive tuberculin test in the suspicion range, a significant ESR and suspicious retinal findings were the parameters we considered for cases of refractory uveitis to start on anti tubercular treatment. All the patients responded to the treatment after anti-tubercular treatment. Investigations like PCR and Gold TB- quantiferon may be specific but economically not feasible. Hence the indirect evidence of ocular TB can be of significance in cases of refractory uveitis.

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