Original Research Article

Spectrum of diseases in ocular tuberculosis

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Abstract

Aim: To study the spectrum of diseases in ocular tuberculosis and their management and to determine the complications, prognostic factors and visual outcome in this disease. **Material and Methods:** In this retrospective study we present 10 patients presenting to ophthalmology department. Comprehensive evaluation was done in all patients.OCT and FFA was done in selected patients and routine systemic investigations were done in all patients. **Observation and Results:** Two patients had granulomatous anterior uveitis out of which 2 had cystoid macular edema, 2 had intermediate uveitis, 3 had retinal vasculitis All patients were started on topical steroids and cycloplegics. Oral steroids were given in patients with intermediate uveitis and retinal vasculitis after induction phase of ATT regimen. All patients were started on Anti-tuberculous treatment regime in collaboration with the pulmonologist.

Key Words: Granulomatous uveitis, Intermediate uveitis Ocular tuberculosis, Vasculitis.

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INTRODUCTION

Tuberculosis is a chronic granulomatous infection caused in humans by Mycobacterium tuberculosis. According to WHO, two- thirds of the world population is infected with TB. The disease is manifest in only 10%of the infected population and in the remaining disease is latent they may develop clinical disease at any point in their lifetime.[1,2] TB is primarily a pulmonary disease but may spread by bloodstream to other organs. Ocular involvement occurs commonly without overt systemic disease. The casual factor (direct infection /hypersentitivity reaction) is however not yet clearly identified. Primary ocular TB infection is rare and can affect eye lid, cornea, conjunctiva, sclera. Secondary disease mainly involves the uveal tract, retina, optic nerve. Uveitis is the most common ocular presentation of ocular TB due to the rich blood supply of the uveal tract.[3,4] Intra ocular TB mimicks various uveitic entities and has to be considered in the differential diagnosis of any intra ocular inflammation.[5] It can present unilaterally or bilaterally. It can present as anterior, intermediate, posterior uveitis, pan uveitis

MATERIAL AND METHODS

In this retrospective study we present 10 patients presenting to ophthalmology department, of Deccan College of Medical Sciences from August 2016 to May 2017 with pain redness and diminution of vision. Best corrected visual acuity was assessed for all the patients. Colour vision was tested with ishihara charts. IOP was measured using applanation tonometry and gonioscopy was done. Anterior segment was evaluated using slit lamp biomicroscopy. Posterior segment was evaluated by indirect ophthalmoscopy using 90D and 20D lens. Optical coherence tomography was done only in patients who had macular edema clinically. Fundus fluorescein angiography was done in one patient with retinal vasculitis to look for neovascularisation and ischemic areas. Routine investigations such as CBP, ESR, Mantoux test, chest radiograph, VDRL test, HIV, HBsAg, sputum for AFB, serum ACE was done in all the patients. All the patients were montoux positive out of which 8 patients had radiographic evidence of pulmonary tuberculosis and the remaining two had sputum positive for AFB.

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RESULTS

On examination the following diagnosis was made -5 patients had granulomatous anterior uveitis out of which 2 had cystoid macular edema, 2 had intermediate uveitis, 3 had retinal vasculitis. Two patients had cells in anterior vitreous and snowball opacities in anterior vitreous inferiorly and snow banking on inferior retinal periphery and were diagnosed with pars planitis. Out of them one had cystoid macular edema. 3 patients were having retinal vasculitis. Out of them one had neovascularisation elsewhere with vitreous haemorrhage. Fundus fluorescein angiography was done in one patient to rule out NVE and capillary non-perfusion areas

Table 1:

Case no	Cornea	AC	LENS	Vitreous	FUNDUS	DIAGNOSIS
1	Mutton fat Kp	Cells 3+flare 3+	Complicated cataract	1 + cells	CME+	Granulomatous Anterior uveitis
2	Mutton fat Kp	Cells 2+ Flare 3+	Complicated cataract	Trace cells	CME+	Granulomatous Anterior uveitis
3	Mutton fat Kp	Cells 2+ Flare 3+	clear	Trace cells	normal	Granulomatous Anterior uveitis
4	Mutton fat Kp	Cells2+ Flare 2+	clear	Trace cells	normal	Granulomatous Anterior uveitis
5	Mutton fat Kp	Cells 1+ Flare 2+	clear	Trace cells	normal	Granulomatous Anterior uveitis
6	clear	Quiet	clear	3+ cells snowball opacities in anterior vitreous inferiorly and snow banking on inferior retinal periphery	CME+	Pars planitis
7	clear	quiet	clear	2+ snowball opacities and snow banking	normal	Pars planitis
8	clear	quiet	clear	Vitreous haemorrhage,	NVE,peri vascular cuffing	Retinal vasculitis with vitreous haemorrhage (VH)
89	Clear	quiet	clear	Trace	peri vascular cuffing	Retinal vasculitis
10	Clear	quiet	clear	Trace	peri vascular cuffing	Retinal vasculitis

Treatment: Patients with anterior uveitis were treated with topical steroids and cycloplegics, those with parsplanitis were started on oral steroids 1mg/kg once daily in addition to topical steroids and cycloplegics. In patient with NVE and Vitreous haemorrhage associated with retinal vasculitis, sectoral laser photocoagulation was done. In all the cases of retinal vasculitis oral and topical steroids were started. For all the patients anti tubercular therapy was given in collaboration with the pulmonologist.

Table 2:

Diagnosis	Ocular treatment	ATT
Anterior uveitis (5 patients)	1. Predforte e/d 6times daily Tapered over 6 weeks. 2. Homide e/d twice daily	given
Pars planitis (2 patients)	1. Tab Wysolone (1mg/kg) once daily 2. Predforte e/d 6 times daily (tapered gradually) 3. Homide e/d twice daily	given
Retinal vasculitis (3 patients)	1. Sectoral pan laser photocoagulation 1 case 2. Tab wysolone (1mg/kg) 3. Predforte e/d 6 times daily (tapered gradually) 4. Homide e/d twice daily	given

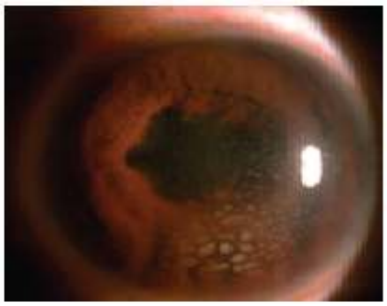
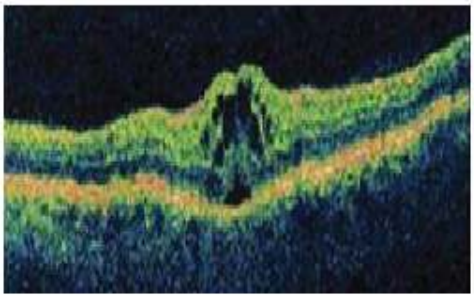


Figure 1:



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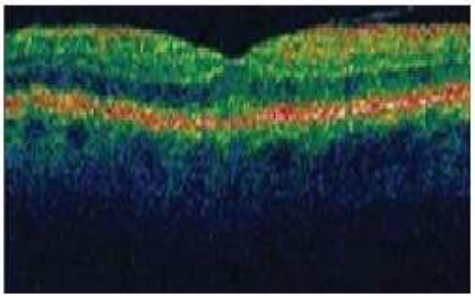

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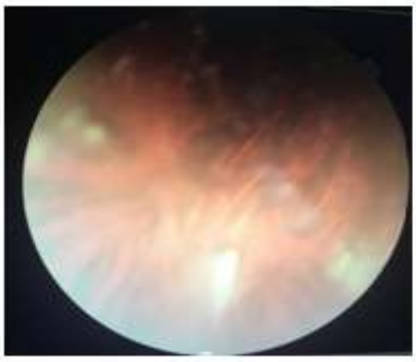

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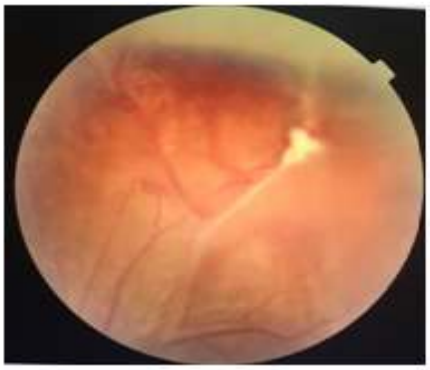

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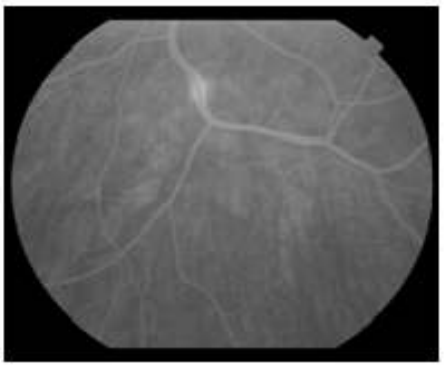

Figure 6:

Legend

Figure 1: Mutton fat KP; **Figure 2:** CME -pre treatment; **Figure 3:** Post Treatment; **Figure 4:** Vitritis with snow ball opacities; **Figure 5:** Vasculitis with NVE and VH; **Figure 6:** Showing vasculitis

DISCUSSION

Ocular tuberculosis is mostly an extrapulmonary entity. Primary ocular tuberculosis is very rare. As tuberculosis is a most prevalent disease in our country, all the patients presenting with granulomatous and recurrent uveitis must be screened for tuberculosis.[6] Anterior uveitis presents as unilateral or bilateral chronic granulomatous disease with granulomatous keratic precipitates. Iris nodules or granulomas may be seen. Accompanying complicated cataract, synechiae vitritis are common. Ocular TB may also present as moderate-to-severe cellular reaction in the vitreous cavity, including snowball opacities. Intermediate uveitis can also show granulomatous keratic precapitates, Peripheral retinal vasculitis with perivascular choroiditis or scars, Cystoid macular edema, cataract, peripheral neovascularization, vitreous hemorrhage.[7] Posterior uveitis is the most common presentation of intraocular TB, lesions as focal, multifocal or serpiginous choroiditis, solitary or multiple choroidal nodules (tubercles), choroidal granuloma (tuberculoma), neuroretinitis, subretinal abscess, endophthalmitis, panophthalmitis, and retinal vasculitis.[8] Retinal vasculitis may lead to proliferative vascular retinopathy with recurrent vitreous hemorrhage, rubeosis iridis, and neovascular glaucoma.[9,10] In our study the diagnosis of tuberculosis was made through the ocular features by screening for tuberculosis in collaboration with pulmonologist. All the patients were followed up every 2 weeks in first one month and then monthly for 6 months. There was considerable amount of improvement in the clinical signs and symptoms. ATT was stopped at the end of 6 months by the pulmonologist.[11]

CONCLUSION

Patients with uveitis of unknown aetiology, recurrent or not responding to conventional therapy or ocular findings highly suggestive of ocular tuberculosis should always be screened for tuberculosis. Steroids are the mainstay of the treatment for ocular tuberculosis along with antitubercular therapy. Laser photocoagulation should be done in patients with retinal vasculitis with neovascularisation to prevent vitreous haemorrhage and tractional retinal detachment.

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