

## Case study

### **Incidental finding of intraretinal haemorrhage in a case of tuberculous meningitis**

#### **ABSTRACT**

**Title-**Incidental finding of intraretinal haemorrhage in a case of tuberculous meningitis.**Aim-** To necessitate the need for an ophthalmology eyecheckup in a case of tuberculous meningitis with sub ILM bleed.**Case history-**We present a case of a 19-year-old male with gradual, painless DOV in RE since 1 month. History, visual acuity, anterior segment were examined. OCT & fundus photography were recorded. Patient was diagnosed to have extrapulmonary TB with intraretinal haemorrhage in right eye. Patient is on regular medical line of management for anti-tuberculosis therapy and is being followed up.**Discussion-** Preretinal haemorrhage occur between posterior hyaloid & ILM. Sub-ILM haemorrhages leads to visual impairment and can lead to transient visual loss with possibilities of self resolution. **Conclusion-**Therefore it is mandatory to evaluate & necessitate the need for ophthalmology checkup in such patients.**Keywords-** Intraretinal haemorrhage, ILM bleed, Tuberculous meningitis , Extrapulmonary TB.

## **INTRODUCTION**

Preretinal haemorrhage occur at the interface between the posterior hyaloid and inner limiting membrane. Less frequently, they are located between the ILM and the retinal nerve fibre layer. Sub-ILM haemorrhages have been described in a variety of clinical settings and often lead to severe visual impairment because of their predilection for the macular region. **Retinal haemorrhages can be associated with vascular occlusions , anaemic retinopathy, valsalva retinopathy , tersons syndrome, recent travel to altitudinal region. However very less is known about incidence of intraretinal haemorrhages with tuberculous meningitis. Therefore this study highlights the importance of ophthalmology checkup in patients with tuberculosis and presenting with ocular complaints.** We present a case of an incidental finding in a 19- year- old male with complaints of gradual, painless diminution of vision in right eye since 1 month and occurrence of sub -ILM bleed and importance of regular follow up in such patients.

## **PRESENTATION OF CASE**

We examined a 19 year old male who presented to ophthalmology outpatient department with chief complaints of diminution of vision for distant objects in right eye since 1 month which was gradual, progressive and painless. Patient had a history of using spectacles since the last 10 years, which he had got last corrected 2 years ago. **No history of ocular trauma , ocular surgery. Patient had history of**

seizures and was under evaluation for the same. No family history of tuberculosis or Tb contact.

On general examination patient had one right sided supraclavicular lymph node with biopsy proven lesion suggestive of tubercular lymphadenitis and signs of meningitis like neck stiffness ,rigidity. Neuroimaging was done and all findings were normal. No signs of meningeal enhancement and tuberculoma.CSF examination was done and findings were suggestive of tuberculous meningitis with CSF showing raised lymphocyte predominant pleiocytosis , elevated protein and low glucose levels. On ocular examination -BCVA was 6/9p in RE & 6/6 in LE, Colour vision using Ishihara chart & Amslers grid test was normal. Extraocular muscle movements in both eyes was full, free and painless. Anterior segment examination of both eye was completely normal. No signs of tuberculous uveitis. Detailed fundus examination of right eye showed clear media with a healthy neuroretinal rim with cup disc ratio of 0.3:1 with blood vessels which were normal in calibre, however there was one splinter shaped haemorrhage at the inferior margin of the optic disc .(Figure 1). Foveal reflex was present and macula was healthy. There was no sign of tuberculous uveitis or any signs of retinal vascular occlusion. Optical coherence tomography revealed high reflectivity in the superficial retinal layers with lifting of inner limiting membrane due

to underlying haemorrhage. (Figure 2).



Figure 1 - Fundus image of right eye showing intraretinal haemorrhage inferotemporal to optic disc.

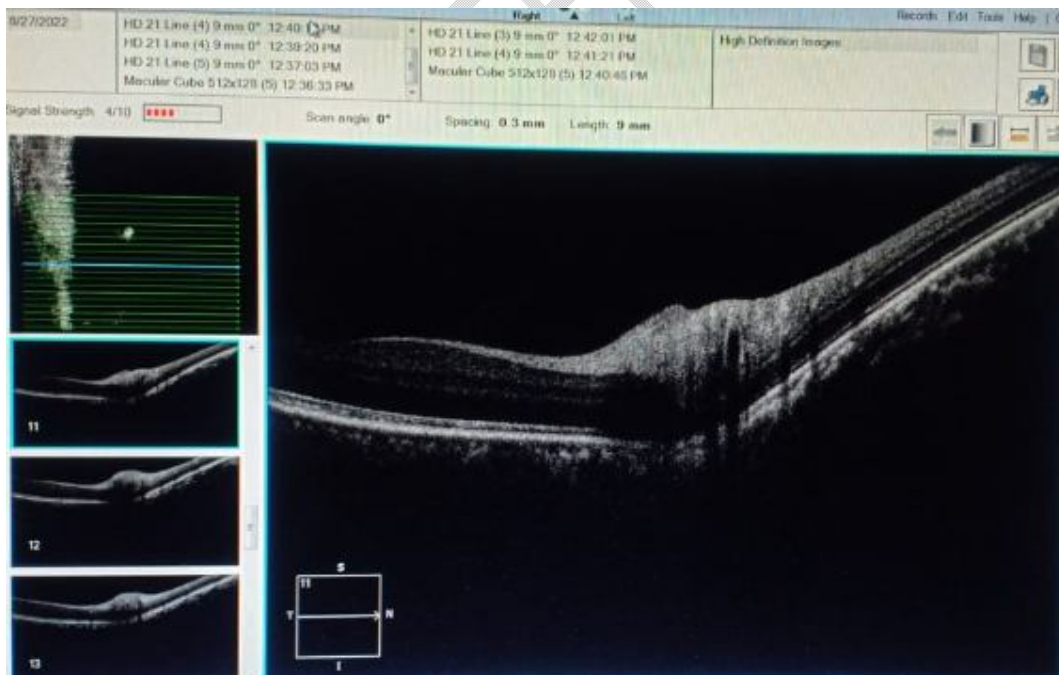


Figure 2- OCT image showing sub Inner limiting membrane bleed in right eye.

A team of specialist, involving physician, neurophysician, chest physician, ophthalmologist was consulted. Laboratory investigations like ESR and LFT, RFT to check for renal or hepatotoxicity was done . CBC to rule out anaemic retinopathy was done. CSF examination as mentioned before was done and findings were suggestive of tuberculous meningitis. Neuroimaging to check for meningeal involvement and tuberculoma was done and findings were normal. Coagulation profile and covid rtPCR was done to rule out covid 19 associated thromboembolic events . Recent travel history to high altitudinal areas were ruled out to check for vasculopathy associated with altitudinal variations. After thorough history taking and examination patient was diagnosed as " Extrapulmonary-Tuberculous meningitis with intraretinal haemorrhage in right eye. After due clearance patient was started on antituberculous therapy as the first line of treatment and patient is being followed up in ophthalmology opd till date.

## DISCUSSION

Spontaneous sub-ILM haemorrhages in absence of vascular disorders, Tersons syndrome, anaemic retinopathy , intraocular haemorrhage, thromembolic events is extremely rare. Intraocular haemorrhages have mainly been associated with Valsalva retinopathy <sup>(1)</sup> and Terson's syndrome <sup>(2)</sup> .Terson syndrome constitutes of intraocular haemorrhage associated with SAH , intracerebral hemorrhage or traumatic brain injury. Retinopathy secondary to anemia has been usually noted in literature to be an incidental finding and has been reported due to various underlying systemic conditions. <sup>(7,8,9)</sup> The clinical picture is of hemorrhages, venous dilatation, and nerve fiber layer infarctions secondary to the hypoxia. Sub-ILM haemorrhages have been discussed in a variety of conditions and lead to severe visual impairment because of their involvement for the macular region. The predilection to the macula is explained by the absence of firm attachments of the ILM to the retina at the posterior pole <sup>(3)</sup>. Recent studies about association of covid 19 with thromboembolic events have necessitated routine ocular fundus examination and ordering D-dimer assay and other coagulation profile tests like PT, aPTT test in patients with COVID-19 presenting with sub-ILM bleed ,as prompt anticoagulation therapy is mandated in some of these patients. <sup>(4,5)</sup>The direct effect of viral infection, hypercoagulation and vasculopathy are proposed to be the factors leading to various retinal changes. <sup>(6)</sup> By way of this case report we wish to highlight that after ruling out all possible causes of intraretinal haemorrhages we can correlate the incidence of intraretinal haemorrhage and association of tuberculous meningitis. Very little is known and there is no enough literature about association of intraretinal haemorrhage and tuberculous meningitis. It is, therefore, imperative to identify such patients with ocular compaints and manage them.

## CONCLUSION

Sub-ILM haemorrhages often occur in a specific clinical context and can lead to severe visual impairment in young patients. Given the excellent results and low complications rates, timely surgical intervention is justified when spontaneous resorption does not happen. Sub ILM haemorrhage can lead to transient visual loss with possibilities of self resolution. Therefore it is mandatory to evaluate such patients.

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