

# CASE REPORT

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## SCLEROSING KERATITIS IN REACTIVATED SYSTEMIC TUBERCULOSIS

M. Gopal Kishan<sup>1</sup>, Sheetal Baldava<sup>2</sup>, Syed Musaab Mohiuddin<sup>3</sup>

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**ABSTRACT:** Interstitial Keratitis is non-ulcerating inflammation of the corneal stroma without the involvement of either epithelium or endothelium.<sup>(1)</sup> Keratitis in scleritis is either infiltrative or destructive. Infiltrative lesions present as localised or diffuse stromal keratitis, sclerosing keratitis or as deep keratitis. Sclerosing keratitis is known to be associated with rheumatoid arthritis,<sup>(2)</sup> onchocerciasis, tuberculosis<sup>(3)</sup> and other infective or auto immune diseases. We are reporting a case of sclerosing keratitis in a patient with reactivated tuberculosis. A 40 year old female patient presented with unilateral sclerosing keratitis and mild anterior uveitis with recent loss of weight and easy fatigability. She revealed a history of pulmonary tuberculosis in the past, for which she received Anti Tubercular Therapy for 6 months and was then declared cured at the time. A thorough workup for systemic risk factors was performed to evaluate etiological factors responsible for the keratitis and uveitis with special emphasis on tuberculosis. Though the blood work and radiology reports did not allow a definitive diagnosis of tuberculosis, in view of her past history, a therapeutic trial was initiated by restarting ATT. This resulted in improvement in her general condition. Though the corneal opacities didn't resolve, there was an arrest in their progression. Over the next 8 months, the corneal lesions remained stable. An ocular event was the only obvious sign in this patient to indicate reactivation of systemic tuberculosis and it helped initiate treatment emphasizing the role of an ophthalmologist in early detection and prompt institution of treatment in systemic diseases.

**KEYWORDS:** Sclerosing keratitis, tuberculosis, uveitis, candy floss opacities.

**CASE REPORT: INTRODUCTION:** Sclerosing keratitis is manifested by scleralisation of the deep peripheral cornea adjacent to area of scleritis. It is gray or grayish – yellow at onset and later becomes bluish white or dense white. Thus, a yellow or white "crystalline" opacity appears insidiously in the mid-stroma either in a diffuse or sectoral fashion. These opacities are characteristically described as "Candy Floss Opacities" or "Cotton Candy Opacities".<sup>(4)</sup> There is minimal vascularization, but is associated with corneal thinning. Individual opacities are often tongue shaped or triangular with base directed towards limbus.<sup>(5)</sup> These opacities rarely resolve.<sup>(6)</sup> There may be associated anterior uveitis whose severity depends on the individual case.

**CASE REPORT:** A 40 year old homemaker presented with a complaint of gradual whitening of the black of the right eye of 3 months duration. The change was gradual and not associated with any pain or noticeable blurring of vision. There was no history of any redness, watering or photophobia. She did give a vague history of loss of weight and easy fatigability for the past 5 months and revealed history of pulmonary tuberculosis for which she was treated with ATT and

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declared cured after negative sputum sample 1 year back. Her visual acuity in the right eye was 6/9 and left eye was 6/9.

The conjunctiva of both eyes was quiet. In the right eye, slit lamp examination of the cornea revealed irregular limbal border with loss of limbal stem cells and irregular 360 degrees scleralisation of cornea for 2-3 mm into the cornea. The opacification was in the infero-medial quadrant. There was a crescentic patch of mid stromal "candy floss" like opacity 3mm long and 1 mm thick, parallel to the limbus, in the infero medial quadrant separated from the peripheral opacity by clear cornea. There was minimal flare and no cells in the anterior chamber. The iris pattern was normal but irregular pigment clumps were observed on the lens capsule suggesting low grade uveitis. The lens was clear and anterior vitreous was clear with no cells of flare. Fundus examination was unremarkable. The left eye showed mild pigment dispersion on central endothelium of cornea but was otherwise unremarkable. The IOP was 12 mm Hg in both eyes. Preliminary blood work showed an elevated ESR of 1<sup>st</sup>hr: 50mm and 2<sup>nd</sup>hr: 140 mm. The blood counts were within normal limits and Chest X Ray revealed no abnormality. Tuberculin skin test revealed induration of 15mm and was considered positive. In view of a history of systemic tuberculosis, elevated ESR and a positive mantoux test, the patient was referred to a chest physician who reinstituted Anti Tubercular Treatment. On regular follow up over next 8 months, there was improvement in her general condition and stabilization of the corneal opacity. There was also resolution of the pigment clumps over the lens.

**DISCUSSION:** Tuberculosis is endemic in our country and a major public healthcare problem. With 2.2 million cases of tuberculosis in India, amounting to 25% of the global burden, India is the world's highest Tuberculosis burden country.<sup>(7)</sup> In India Telangana and Andhra Pradesh account for a disproportionately high percentage of India's overall TB and HIV cases.<sup>(7)</sup> Ocular tuberculosis (TB) is among the common causes of infectious uveitis in endemic countries. It has a wide variety of clinical manifestations affecting nearly every ocular tissue. These include anterior uveitis, intermediate uveitis, retinal vasculitis, infectious multifocal serpiginous choroiditis (MSC), choroidal tuberculoma, subretinal abscess, scleritis, sclerosing keratitis, and optic neuritis.<sup>(8)</sup>

But, there is a lack of correlation of the eye complaints with systemic tuberculosis. The rarity of active ocular tuberculosis in sanatorium patients with active pulmonary tuberculosis is well known. AMSLER (1957) places this figure at less than 1%.<sup>(9)</sup> The reason for such a lack of correlation could be that a long latent period occurs before the tubercle bacilli travel from the primary source to the eye or an allergic response is responsible for uveitis and scleritis.<sup>(10)</sup> Thus, every patient with suspected ocular tuberculosis must be investigated for a primary focus. Especially since, in almost all cases the systemic lesion tended to be "benign" and easily missed if not looked for. In one study, the incidence of systemic active lesion in cases of suspected ocular tuberculosis was 34 out of 150 (22.6%) and in 3 (2%), healed but gross lesions were found. Moreover, out of 17 of sclerosing keratitis, 11 had tuberculosis.<sup>(10)</sup>

Our patient gave a significant past history of pulmonary tuberculosis which was diagnosed at the time with a positive sputum culture. She received ATT according to the standard guidelines. She completed the course over 6 months and was declared treated after culture negative sputum at the end of treatment. Following this episode, she was asymptomatic for a

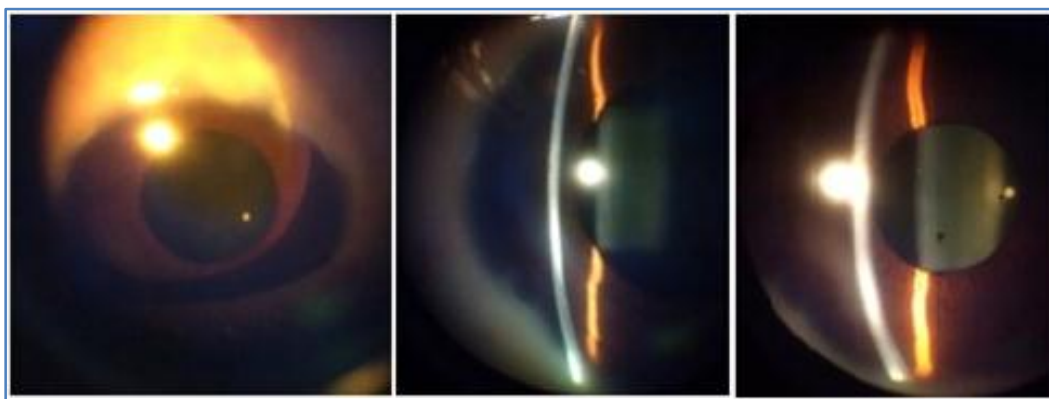
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year. In this patient, the reactivation of tuberculosis was as extra pulmonary manifestation. An ocular event helped detect reactivation of tuberculosis. In other studies too, it was found that eye findings led to the detection of insufficiently and irregularly treated cases of systemic tuberculosis.<sup>(10)</sup>

**CONCLUSION:** Tuberculosis is a master masquerader and has protean manifestations. It is important as ophthalmologists to keep a high index of suspicion when approaching a case of scleritis or uveitis with an open mind on common infectious and auto immune causes as early detection of an associated systemic disease enables prompt treatment and limitation of damage.

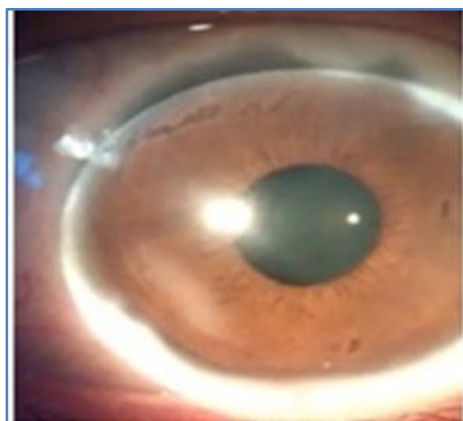
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**Fig. 1: Slit lamp photograph of right eye at presentation showing 360 degrees irregular scleralisation, with arcuate candy floss opacity and pigment clumps on the lens**

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**Fig. 2: Slit lamp photograph of right eye after 6 months of ATT, showing stabilization of corneal opacity**

## **AUTHORS:**

1. M. Gopal Kishan
2. Sheetal Baldava
3. Syed Musaab Mohiuddin

## **PARTICULARS OF CONTRIBUTORS:**

1. Professor & HOD, Department of Ophthalmology, Deccan College of Medical Sciences.
2. Assistant Professor, Department of Ophthalmology, Deccan College of Medical Sciences.
3. Post Graduate Student, Department of Ophthalmology, Deccan College of Medical Sciences.

## **NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:**

Dr. M. Gopal Kishan,  
Professor & HOD,  
Department of Ophthalmology,  
Deccan College of Medical Sciences.  
E-mail: gopalkishan.mutyala@gmail.com

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