Primary conjunctival tuberculosis: A rare masquerading entity

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ABSTRACT

Primary conjunctival tuberculosis is a rare entity in India. Here, we report a rare case of bilateral primary conjunctival tuberculosis in a 20-years-old female. She had multiple granular lesions in both the eyes for one year and was not responding to topical antibiotic or steroids. Slit-lamp examination showed multiple small subconjunctival granulomas. Conjunctival excision-biopsy revealed granulomatous inflammation with caseous necrosis. A diagnosis of primary conjunctival tuberculosis was made and anti-tubercular therapy was started to which the patient responded rapidly with complete resolution of the lesions by 2 months. Histopathological examination of chronic non-resolving inflammatory conjunctival lesions is important as it may be a rare presentation of a disease like tuberculosis.

Keywords: *Biopsy, Conjunctival tuberculosis, Histopathological examination.*

According to global tuberculosis report 2018,the incidence of tuberculosis (TB) in India was approximately 28,00,000 and accounting a quarter of the world TB cases [1]. Still, primary conjunctival tuberculosis remains a rare entity in India. The mode of ocular involvement in tuberculosis may be a direct invasion of tuberculous bacilli or a hypersensitivity reaction to tubercular protein [2].With the advancement in anti-tubercular treatmentfor the past few decades, conjunctival involvement of tuberculosis has also decreased and thereafter only a few isolated cases have been reported [3,4,5,6,7,8]. Most cases of primary conjunctival tuberculosis reported in the literature are unilateral.

To the best of our knowledge, only a few histopathologically proven cases of primary conjunctival tuberculosis have been reported from India till date. We report a rare case of bilateral primary conjunctival tuberculosis.

CASE REPORT

A 20-years-old female was referred to our out-patient department with complaints of severe itching, redness, foreign body sensation and multiple granular lesions in both the eyes for 12 months. She was unresponsive to topical antibiotic and steroid therapy. Systemic history was unremarkable. Due consent of the patient was taken for this case report.

General examination and vitals were normal. On ocular examination, her uncorrected visual acuity in both the eyes was 20/20 (Snellen's chart).The upper bulbar and tarsal conjunctiva was hyperaemic with multiple small subconjunctival granulomas which were more in the left eye as compared to the right eye (Fig. 1). Rest of the ocular, as well as systemic examination, was unremarkable.

Laboratory tests including total leucocyte count (7500), differential leucocyte count ($N_{66}L_{30}E_{2}M_{3}B_{0}$), serum angiotensin-converting enzyme (ACE) (15 µl) and anti-neutrophil cytoplasmic antibodies (ANCA) were within normal limits. Erythrocyte sedimentation rate (ESR) titre was raised (32 mm in the first hour). Mantoux test and urine Bence Jones proteins were negative. HIV and Syphilis serology was negative. Chest X-ray was clear. Ziehl-Neelsen staining for sputum acid-fast bacilli (AFB) was negative. Interferon-gamma release assay (TB platinum) test was also negative.

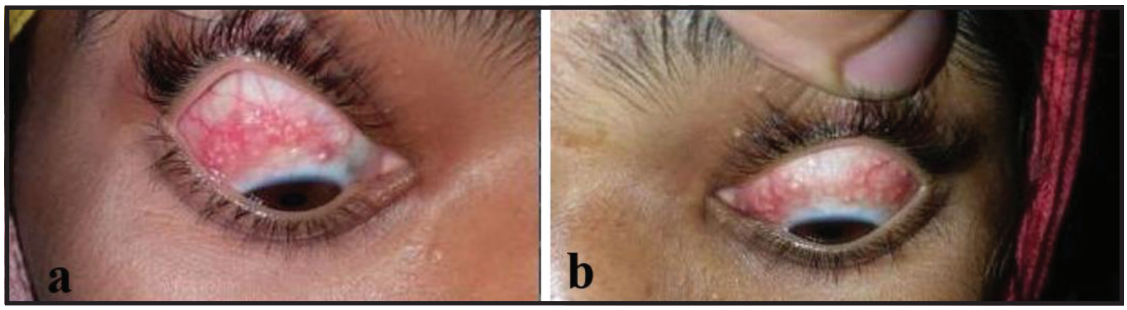

Figure 1: Slit-lamp examination of the (a) right eye and (b) left eye showing multiple small subconjuctival granulomas. The granulomas are more in the left eye as compared to right eye.

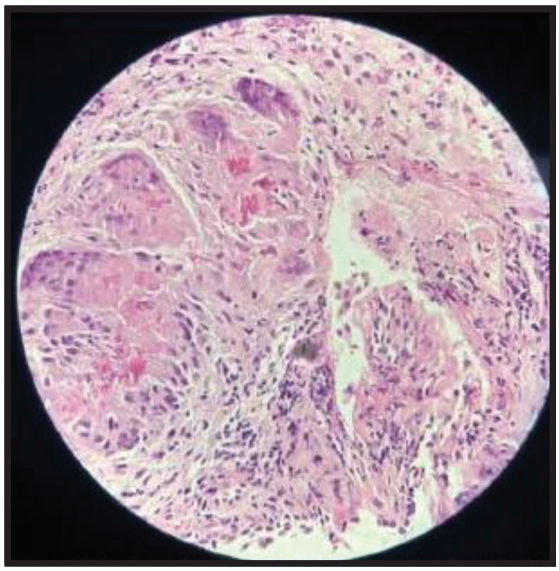

Figure 2: Histopathological examination of conjunctival biopsy tissue showing collection of histiocytes forming granulomas along with multinucleate giant cells and foci of central caseous necrosis.

Subconjunctival granuloma excision biopsy was done. Histopathological examination revealed a collection of histiocytes forming granulomas along with multinucleated giant cells and foci of central caseous necrosis. No sporangium, asteroid body or amyloid deposits were seen (Fig. 2). A final diagnosis of primary conjunctival tuberculosis was made as systemic screening for tuberculosis revealed nothing other than raised ESR.

The patient was put on a full course of anti-tubercular therapy (ATT) after consultation with TB and chest physician. At 2 months follow-up, the patient showed rapid improvement in conjunctival lesions and at 3 months no detectable lesions were seen (Fig. 3).

DISCUSSION

Ocular affection of tuberculosis is an uncommon disease, especially primary conjunctival tuberculosis which is very rarely seen in today's world of effective and advanced treatment regimes. Regional lymphadenopathy is a common systemic finding in most of these cases [9]. But in recent decades, there are reports of isolated and variable presentation of primary conjunctival tuberculosis, in which conjunctival lesion occurs without ongoing active pulmonary tuberculosis, thus making the diagnosis more challenging [10,11].

There are some reports of active conjunctival and corneal tuberculosis. Most cases of primary conjunctival tuberculosis reported so far are unilateral [12,13,14]. In our case, the lesions were bilateral. Eric et al. reported a case of bilateral conjunctival tuberculosis with papillomatous lesions in the lower bulbar and palpebral conjunctiva [15]. Our case had multiple small subconjunctival granulomas in the upper bulbar and tarsal conjunctiva.

Mantoux test still remains the basic screening test. However, it has low specificity and high false positivity, especially in non-tubercular mycobacterial infections and BCG vaccinated individuals. AFBsmear, Polymerase chain reaction (PCR) and Interferon-gamma release assay are very sensitive and specific tests for detecting active pulmonary tuberculosis, but they have low sensitivities (20–30%) for ocular sample [12-14]. In our case, chronicity of disease which was not responding to antibiotic-steroid treatment ruled out the possibility of allergic conjunctivitis and aroused the suspicion of conjunctival tuberculosis which was confirmed on conjunctival biopsy.

Differential diagnosis of other possible granulomatous conditions like foreign-body granulomas, fungal granulomas, rhinosporidiosis, amyloidosis, and sarcoidosis was ruled out on histopathology [16-18]. There was no history or microscopic evidence of any foreign body. Sarcoidosis was ruled out as the granulomas had necrotization with central 5 caseation and serum ACE and calcium levels were normal. No fungal organisms were identified on microbiological analysis. The rapid response to ATT further confirmed the diagnosis.

CONCLUSION

General ophthalmologists should consider histopathological examination of chronic non-resolving inflammatory conjunctival lesions unilateral or bilateral with or without regional lymphadenopathy,as it may be a rare presentation of a disease like tuberculosis particularly in endemic areas like India where the incidence of tuberculosis is high.

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Figure 3: Slit lamp examination of both the eyes at three months follow-up.

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