

# Isolated Right Upper Eyelid Tuberculosis: A Case Report with Review of the Literature

RANJAN AGRAWAL, SANDEEP AGARWAL

## ABSTRACT

We are reporting herewith a case of 54-year old lady who presented with a painless, peanut sized swelling in the right upper eyelid which was there since the past 2 months. No other local or systemic features were associated with it. An incisional biopsy was performed under local anaesthesia. The

histopathological examination revealed an epithelioid granuloma with Langhans giant cells. The PCR test of the tissue confirmed the diagnosis of tuberculosis (TB). The patient was given anti-tubercular therapy and she is responding well, with the eyelid swelling being resolved.

**Key Words:** Upper Eyelid, Tuberculosis, Granuloma, PCR

## INTRODUCTION

Ocular manifestations of tuberculosis are not uncommon in India, but tuberculosis of the eyelid is rather rare. Only a handful of cases have been reported in the literature, with the primary type being very unusual. Eyelid involvement is almost always secondary to the orbital involvement and it is often seen in the form of a drainage sinus [1].

## CASE REPORT

54-year old housewife who belonged to the upper middle socio-economic class presented with a swelling in the right upper eyelid. The swelling was observed 2 months back itself and it had gradually increased in size. There was no history of trauma over the site. There was no history of tuberculosis in the family, nor was there any definite history of exposure to any tuberculosis patient. The patient had a history of low grade fever since the past 3-4 months. She was diabetic and hypertensive and had been regularly taking medications for these ailments.

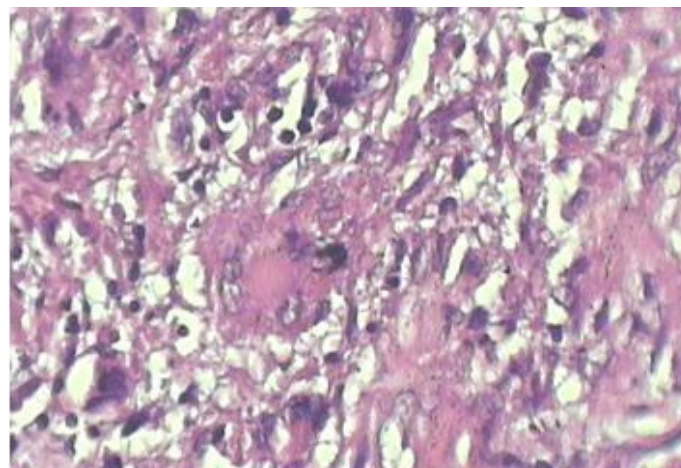
On examination, a freely mobile, non-tender, peanut sized swelling which measured 5x8mm in size was found in the right upper eyelid [Table/Fig-1]. The swelling was hard in consistency, along with lid oedema. There was no congestion and no restriction of the ocular movements. The best corrected visual acuity was 6/9. Both the eyes had normal intra ocular pressure. The sac, cornea, iris, pupil, lens and the fundus were normal. The left eye and the eyelid were normal. On general examination, the patient was found to be normal and healthy. There was no evidence of tuberculosis in any other site of the body. Clinically, a differential diagnosis of Chalazion or a parasitic infestation was thought of.

The routine blood investigation revealed Hb -13.3gm%, TLC -6300 cells/cu mm and DLC- P-68, L-26, E-5 and M-1. ESR which was done by Wintrobe's method was 53 mm in the 1st hour. The PPD test was positive with an in duration of 21 x 18 mm. The X-ray of the chest was normal. An excisional biopsy of the swelling was done under local anaesthesia and it was subjected to a histopathological examination. The H&E stained sections showed characteristic tubercles with central areas of caseation, which were surrounded

by epithelioid cells, multi-nucleated and Langhans' type giant cells and a cuff of mature lymphocytes and plasma cells [Table/Fig-2]. The granulomas were distributed in between the meibomian glands as well. Occasional acid fast bacilli could be identified in the smears which were stained by the modified Ziehl-Neelsen's



**[Table/Fig-1]:** Peanut sized swelling in the right upper eyelid



**[Table/Fig-2]:** Microscopic picture showing epithelioid granuloma, langhans' giant cell and caseation H&E X 40

method. Polymerase chain reaction (PCR) of the excised tissue which was done by using four standards, showed a positive DNA amplification, which confirmed the diagnosis of tuberculosis.

The patient was put on anti tuberculosis therapy and she has been found to be responding well during all the routine follow-ups. The operative site has healed up.

## DISCUSSION

The definition of primary ocular tuberculosis is varied. Some authors use it to describe an ocular disease in the absence of a systemic involvement, while others use it to describe a disease in which the eye is the initial port of entry of mycobacterium into the body [2]. It is very unlikely that tuberculosis of the eyelid may occur as a primary lesion *per se*. The systemic tubercle bacilli can disseminate haematogenously, giving rise to infections in almost every organ, including the eye. Orbital involvement by tuberculosis, even in endemic areas, is rare. The entry of the tubercle bacilli into the human-body may occur via the primary or the secondary routes. Cases of upper eyelid mycobacterial infection following oriental blepharoplasty [2-4] had been reported earlier; however, a primary involvement is very rare. The present case is an unusual manifestation of tuberculosis. Our patient presented with a painless, isolated eyelid swelling, which is extremely uncommon.

The tuberculin skin test is of limited value because of its low sensitivity and specificity. A presumptive diagnosis is commonly based on the finding of acid fast bacilli during a microscopic examination of the diagnostic specimen. A definitive diagnosis is dependent on a positive culture of the organism from the diagnostic specimen, which is time consuming. One of the most promising diagnostic techniques is the amplification and the detection of specific segments of the DNA of the tubercle bacilli by PCR, which is useful in diagnosing the disease with a high sensitivity and specificity.

The disease usually starts as a small nodule under the epithelium and when it occurs near the lid margin, it may resemble a sty or a chalazion. The nodule may ulcerate after some time and spread locally in an irregular fashion and it is often accompanied by pain and mucoid or at times, a purulent discharge [5]. The disease is very insidious, and if it is left untreated, it can involve both the eyelids, and the resultant lid complications like ectropion can endanger the eye itself [6]. Unlike that of systemic tuberculosis, the diagnosis of intraocular tuberculosis in most of the cases is based on the clinical features and the investigations alone and uncommonly on the histological and the microbiological evaluations.

In the present case, a possibility of chalazion was ruled out clinically, since the swelling was freely mobile. Ocular tuberculosis may present without demonstrable active tuberculosis elsewhere in the body. The most common ocular manifestations are anterior uveitis and choroiditis or chorioretinitis. Other intraocular manifestations which are attributed to TB include retinal vasculitis and Eales' disease [3,5,6,7].

The diagnosis can be difficult and it may necessitate an orbital biopsy in which acid-fast bacilli (AFB) and the characteristic histopathology may be seen. The growth of Mycobacterium tuberculosis from such a specimen remains the gold standard for the diagnosis of TB. PCR-based tests of the pathological specimens have been proven to be useful.

Ocular tuberculosis usually occurs in apparently healthy individuals who usually show evidence of only an old, healed or benign tuberculous lesion. It has been rarely observed in patients with active pulmonary disease. Both ocular and orbital tuberculosis are usually unilateral [5,8].

## CONCLUSION

It has been concluded that tuberculosis should be considered in the differential diagnosis of a chronic painless eyelid swelling, especially in the Indian background, where the disease still remains a main cause of morbidity. The diagnosis of the tuberculous pathology is important in order to start a specific therapy.

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### AUTHOR(S):

1. Dr. Ranjan Agrawal
2. Dr. Sandeep Agarwal

### PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of Pathology, Rohilkhand Medical College Hospital, Bareilly, India.
2. Senior Resident, Department of Ophthalmology, Rohilkhand Medical College Hospital, Bareilly, India.

### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Ranjan Agrawal  
Associate Professor, Department of Pathology  
Rohilkhand Medical College Hospital  
Pilibhit Bypass Road, Bareilly  
Phone: 9412291009  
E-mail: drnanjan68@gmail.com

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