

# Orbital and Eye Lid Tuberculosis

Abdul Khalid\*, Murtaza Bukhari\*\*, Tariq Baqai \*\*\*

## Abstract

Tuberculosis of eye lid and orbit is uncommon even in endemic countries of Asia. We report a case of 25 year old patient presented with a sinus above the left orbital crease and growth on bulbar aspect of upper eye lid. She also had a cold paraspinal abscess. It was associated with systemic symptoms of weight loss, evening pyrexia and weight loss. Her evaluation and FNAC confirmed the diagnosis and she received anti tuberculous treatment with improvement in six weeks. The co- existence of orbital and lid tuberculosis has not been reported before.

**Key words:** Orbital tuberculosis, eye lid tuberculosis, mycobacterium tuberculosis, anti tuberculous treatment.

## Introduction

Tuberculosis usually affects the lungs, but extra pulmonary tuberculosis involves other human organs or tissues.<sup>1</sup> It is often difficult to establish the diagnosis of extra pulmonary tuberculosis as mycobacteria are often scanty and difficult to culture or visualize by direct microscopy. The diagnosis in these cases is often confirmed by histopathology. The orbital and lid tuberculosis are rare occurrences and closely resemble in clinical presentations with growth or pyogenic abscess.<sup>2</sup> It has been scarcely reported even from endemic areas and involvement of eye lid is exceptionally rare.<sup>3</sup> The orbit is also involved by other infections e.g. syphilis, actinomycosis and mycotic infections. The orbits may be infected by exogenic infections, extension of infections from neighboring structures or endogenous infections. There are few special features of orbital inflammations. There is absence of lymphatic system and protective cellular mechanisms are limited to local reticuloendothelial activity. There is infection in a

close compartment with early and severe symptoms due to raised pressure. The common presentation is with pain, fever, proptosis, limitation of movements of eye balls and periorbital swelling. The abscess formed by tuberculosis often bursts and presents as chronic non healing sinus.

## Case Report

A 25 years old lady was presented with one year history of swelling of left eye lid. She noticed a small painful swelling on outer margin of left upper eye lid. It gradually increased in size and associated with headache and increased lacrimation from left eye and occasionally with purulent discharge from the swelling. There was H/O malaise, fever and weakness. It gradually increased in size more on the outer aspect of left eye lid. It was drained by incision and drainage by local surgeon. The pain and swelling decreased after that procedure but there was no healing. A sinus developed above the left eye under the superolateral margin of left orbit. There was continued significant purulent discharge from the sinus over the left upper eyelid. That discharge kept left eye always wet. Patient used several hand-

**Correspondence:** Dr. Abdul Khalid

Azad Jammu and Kashmir Medical College, department of medicine Abbass Institute of Medical Sciences Muzaffarabad

E-mail: khalid\_awanajk@yahoo.com

kerchiefs in a day in attempt to keep it dry. After two months patient noticed another swelling on the inner aspect of the eye lid. It gradually increased in size. It was painless but associated with watering from left eye. She was unable to close left eye due to increased size of the swelling. At the same time there was continuous discharge from the sinus above the left eye lid. She had been seen by ophthalmologists and general practitioners. She used several local and systemic antibiotics. Her condition continued to deteriorate with increasing purulent discharge. The size of the swelling also increased gradually. Two months ago she noticed a small swelling on her back in interscapular region along left paraspinal border. It was painless and increased in size over the last two months. She also developed insomnia, anorexia and restlessness with low mood and irritability. She had significant weight loss during the last six months.

On examination, the patient was pale and with swelling of left upper eye lid. Her Radial pulse was 88/ min and regular; BP 130/80 mmHg; Temp 98.6 F. Her JVP was not raised and she was non-jaundiced and non-cyanosed. There was no pedal oedema. She had small, palpable juglodigastric lymph nodes. There was no other lymphadenopathy. Heart sounds were normal, pulmonary examination revealed bilateral normal vesicular breath sounds. Abdominal examination demonstrated scaphoid shape and no tenderness on deep palpation. Liver and Spleen were not palpable. There was no shifting dullness and bowel sounds were normal. Examination of musculoskeletal and nervous system revealed decreased muscle mass with no other abnormality. Local examination of left eye showed a sinus at the inferolateral aspect of upper border of the orbit. The left eye was wet due to purulent discharge from the sinus (Figure-1). There was small globular swelling on the bulbar surface of left eye

lid (Figure). Patient was unable to close left eye due to mechanical obstruction by this swelling.



**Figure 1.**Orbital Tuberculosis; globular swelling on the bulbar surface of left eye lid.

Local examination of swelling on back showed 5x15 centimeter, fluctuant non-tender swelling along left para vertebral border in the interscapular region.

Her CBC Count showed Hb. 9.6 gm %, MCV 56.4 fl, ESR 48 mm in first hour with normal Leukocyte and platelet counts. The routine biochemistry, LFTs, Urine analysis and screening for Hepatitis B and C were normal. The patient's chest radiograph was normal.

CT scan of her orbits showed a soft tissue thickening along the supero-lateral aspect of left orbit. It was closely abutting the orbital globe without evidence of infiltration or involvement. The extra ocular muscles were displaced by the soft tissue mass without evidence of their involvement Left optic nerve and surrounding fat were intact. Lens of left eye and globe appeared normal without evidence of displacement. There was associated subcutaneous fat stranding along the left periorbital region. These radiological findings are suggestive of soft tissue thickening could be inflammatory or infective but the possibility of pseudotumour could not be entirely excluded.

FNAC from left eye lid showed granulation tissue and caseous necrosis with strong possibility of tuberculosis.

Patient was managed with four drugs intensive phase anti tuberculous treatment. She improved

and purulent discharge from left eye significantly decreased in three weeks and it was dry after six weeks.

## Discussion

Tuberculosis is endemic in most parts of Asia. This bacterial infection is caused by *Mycobacterium tuberculosis*. The disease usually affects the lungs, but it can also involve other human organs or tissues.<sup>1</sup> It is often difficult to establish the diagnosis of extra pulmonary tuberculosis as mycobacteria are often scanty and difficult to culture or visualize by direct microscopy. The diagnosis in these cases is often confirmed by histopathology.

The significance of orbital and lid tuberculosis is due to rare occurrence and mistaken identity with growth or pyogenic abscess.<sup>2</sup> It has been scarcely reported even from endemic areas and involvement of eye lid is exceptionally rare.<sup>3</sup> The other uncommon forms of tuberculosis include tuberculosis of spleen, thyroid, parotid, adrenals, skin, breast and genitourinary tuberculosis.<sup>4</sup>

The orbit is involved by tuberculosis, syphilis, actinomycosis and mycotic infections. The orbits may be infected by exogenic infections, extension of infections from neighboring structures or endogenous infections.<sup>5</sup> There are few special features of orbital inflammations. There is absence of lymphatic system and protective cellular mechanisms are limited to local reticuloendothelial activity. There is infection in a close compartment with early and severe symptoms due to raised pressure. The common presentation is with pain, fever, proptosis, limitation of movements of eye balls and periorbital swelling.<sup>6</sup> The abscess formed by tuberculosis often bursts and presents as chronic non healing sinus.<sup>7</sup>

Orbital tuberculosis is more common in children than adults and girls are more vulnerable.

The disease is often unilateral, chronic and gradually progressive. The onset of disease is insidious and patient remains symptomatic for several months.<sup>8</sup> It had been observed that left orbit is more commonly involved than the right orbit as happened in this patient.

The common presentations of orbital tuberculosis are unilateral proptosis, sinus formation or swelling of eye lid.<sup>9</sup> To establish the diagnosis the presence of systemic active or inactive tuberculosis is looked for. It is usually based on positive montoux test test, caseating granulomas and positive culture of mycobacterium tuberculosis. Acid fast bacilli are difficult to detect on direct microscopy in the specimen from affected tissues. The differential diagnosis of orbital tuberculosis includes pyogenic abscesses, primary or metastatic tumours, non specific inflammatory conditions and fungal infections.<sup>10</sup>

Our patient had three distinct sites of involvement. There was para spinal cold abscess, involvement of orbit and eye lid.

The treatment of orbital tuberculosis is according to WHO guidelines. In the intensive phase for two months four drugs (INH, Rifampicin, Ethambutol and Pyrizinamide) are used followed by maintenance phase with two drugs (INH and Rifampicin) for four months. Early diagnosis and prompt treatment is essential to prevent tissue destruction, fibrosis and scarring as chronic complication of the disease.

## References

- 1- Fauci, Braunwald, Kasper, Hauser, Longo, Jamson, Loscalzo (2008). Harrison's principles of Internal Medicine (17<sup>th</sup> ed.). McGraw-Hill companies, Inc. pp 1658-1659.
- 2- Yang JW, Kim YD. A case of primary lid tuberculosis after upper lid blepharoplasty. Korean J Ophthalmol. 2004 Dec; 18(2):190-5.
- 3- Jamshidi M, Sadeghi N, Jamshidi A, Et al. [Periorbital tuberculosis in a young man: a case report.](#) Orbit. 2009; 28(2-3):166-8

- 4- Mondal SK. Histopathologic Analysis of Female Genital Tuberculosis: A Fifteen-Year Retrospective Study of 110 Cases in Eastern India. *Turk Patoloji Derg.* 2013;29(1):41-45. doi: 10.5146/tjpath.2013.01146.
- 5- Sethi A, Agarwal AK, Girhotra M, Et al. Tuberculosis: an extremely unusual cause of orbital wall erosion. *Orbit.* 2011 Mar; 30(2):101-4. doi: 10.3109/01676830.2011.558977.
- 6- [Madge SN](#), [Prabhakaran VC](#), [Shome D](#). Et al. Orbital tuberculosis: a review of the literature. *Orbit.* 2008;27(4):267-77.
- 7- Narula MK, Chaudhary V, Baruah D. Et al. [Pictorial essay: Orbital tuberculosis](#). *Indian J Radiol Imaging.* 2010 Feb;20(1):6-10.
- 8- [Khalil M](#), [Lindley S](#), [Matouk E](#). Tuberculosis of the orbit. *Ophthalmology.* 1985 Nov; 92(11):1624-7.
- 9- Kalkmann, J., Müller, D., Forsting, M., Wanke, I. Proptosis as a leading symptom of tuberculosis. *Clinical Neuroradiology.* 2007; 17(2): 121-123
- 10- Chin, P.K., Jacobs, M.B., Hing, S.J. Orbital tuberculoma masquerading as an orbital malignancy. *Australian and New Zealand Journal of Ophthalmology.* 1997; 25(1): 67-69