

Orbital tuberculosis manifesting as proptosis in an immunocompromised host

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Abstract

Orbital tuberculosis is an extremely rare, potentially devastating state, when not effectively treated, can lead to grave sequelae. Proptosis can be the result of primary orbital pathology or systemic disease processes. (1, 2) Thyroid ophthalmopathy being commonest cause of proptosis. It can also be a manifestation of, diseases involving various structures of orbit and of superior orbital fissure or cavernous sinus. A case of orbital tubercular abscess presenting with proptosis and blindness in a young male 27 years is reported. Clinicians should suspect rare causes in an immuno-compromised host. (2, 3) The failure to diagnose these conditions can lead to unintended sequelae.

Key Message: The patient who presents with proptosis must be evaluated to ascertain the causation. Preservation of vision is of paramount importance. On follow-up patients should be monitored for complications and remedied.

Key words: Orbital tuberculosis, proptosis, orbital apex syndrome, HIV

INTRODUCTION

Tuberculosis (TB) is highly prevalent disease in India and its incidence is increasing with HIV infection. Among adults with HIV, the incidence of ocular involvement is high, varying between 50% and 90%.^[1] Tubercular orbital involvement is extremely rare.^[2,3] The incidence of ocular disease in AIDS is likely to increase in the future as a result of improved patient survival.^[4]

Ophthalmic manifestations of Mycobacterium tuberculosis infection include choroiditis, chorioretinitis, choroidal tuberculoma, scleritis, iridocyclitis, retinal vasculitis, optic neuropathy

and endophthalmitis.^[5] Orbital tubercular abscess which involves extra ocular muscles, compress and stretch optic nerve is a rare manifestation of ocular TB.^[3,6] We report a case of orbital tubercular abscess presenting with proptosis and blindness in a young male with HIV infection.

CASE REPORT

A 27-year-Indian male presented with 15-days history of acute onset progressive proptosis and loss of vision in the right eye (OD), drowsiness and irrelevant talk since two days. There was also history of fever, intermittent headache and weight loss for one month duration. There was no history suggestive of thyroid disease.

On general examination patient was drowsy, pale, and febrile with pulse of 104/min and blood pressure of 110/70 mm Hg. The left cervical lymph nodes were enlarged but nontender. Rest systemic examination was unremarkable.

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Ocular examination OD revealed proptosis with eyeball displaced forwards, downwards and laterally (proptosis) [Figure 1]. Uniocular and Binocular movements were normal. Patient denied perception of light in OD. The direct pupillary reaction in OD was absent while consensual was present. Intra-ocular pressure of OD was 20mm Hg and left eye OS 14mm Hg. Fundus examination OD showed optic atrophy, macula and periphery were normal. The OS showed normal direct pupillary reaction and absent consensual reaction, rest of the examination was normal.

Investigations revealed hyponatremia (116mEq/L) and hypokalemia (2.7mEq/L). Haemogram showed haemoglobin of 8.5gm%, total leukocyte count- 5400/cu mm with raised E.S.R-50 mm in first hour. X-ray chest and thyroid function tests were normal. ELISA test for HIV was positive and was confirmed by Western Blot technique. Patients CD4 count was 74.

Orbital and brain computed tomography showed the anterior border of the right globe is 22mm from the interzygomatic line, and ill-defined, mixed-density, peripherally enhancing lesion of approximate size 3.62x3.7 cm at orbital apex pushing the globe and its contents supero-laterally [Figures 2a and b] with involvement of right optic nerve and the all four recti muscles of the eye in right orbit.

The mass was extending superiorly to right middle cranial fossa of the brain with signs of bony erosion of the roof of the orbit and medially erosion of lamina papyracea and opacifying the ethmoid air cells.

Fine needle aspiration cytology (FNAC) of left cervical lymph node showed caseating granulomatous lesion. Clinical diagnosis of tuberculosis with HIV was made on the basis of caseating granuloma and positive western blot test. Patient did not undergo any invasive procedure of the orbit viz FNAC/orbitotomy/ biopsy of mass as his CD4 count was very less. Patient's consciousness improved after correction of dyselectrolyemia. The patient was then started on antitubercular therapy consisting of isoniazid, rifampicin, pyrazinamide and ethambutol for initial two months along with highly active anti-retroviral therapy (HAART) and B6 were administered. Patient was lost to follow up.

DISCUSSION

Tubercular abscess of the orbit is a rare and usually unilateral manifestation of the disease. Very few patients with orbital tuberculosis have been reported

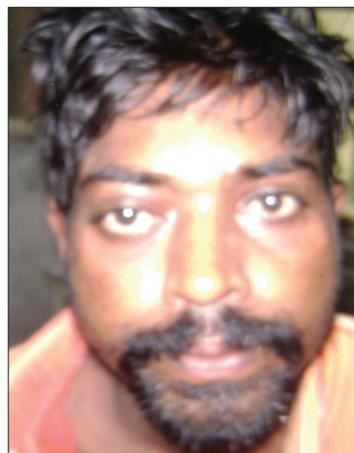


Figure 1: Ocular examination OD showing eyeball displaced forwards, downwards and laterally (proptosis)

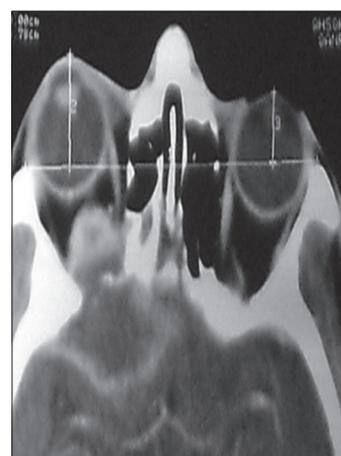


Figure 2a: Orbital and brain CT showing anterior border of the right globe is 22mm from the interzygomatic line suggestive of proptosis and mass extending to right frontal lobe of the brain

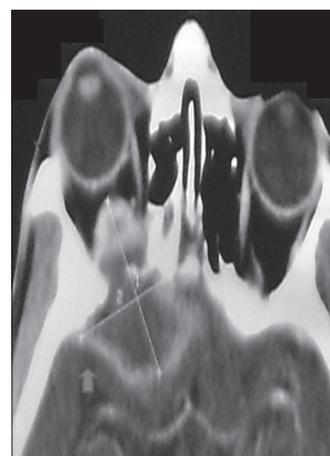


Figure 2b: Orbital and brain CT showing ill-defined mixed density peripherally enhancing lesion of approximate size 3.62x3.7 cm at orbital apex pushing the globe and its contents supero laterally

in recent years. Incidence of manifest ocular involvement in sanatoria patients averages from 0.1 to 1.5%.

Diagnosis of proptosis was confirmed by CT of orbit.^[7] Tuberculosis a bacterial infection of lymphoid tissue, primarily occur as a result of hematogenous spread from a distant site or by direct extension of infection from adjacent bone, sinus, lacrimal gland or sac.

All ages may be affected but it is more common in females of about 40-50 years of age. The course of the disease is slow, and the duration of symptoms ranged from two months to seven years. In Indian populations HIV-infected patients' retinal/posterior segment disease is the most common finding. CMV retinitis is the most common ocular finding in India, and may affect up to 11.9% with CD4 counts <200 cells/ μ L.^[8] With the high prevalence (73.1%) of systemic (either past or current) TB in HIV patient orbital tubercular infection may also present with anterior segment involvement like eyelids, conjunctiva and cornea.

Eye ball protrusion secondary to endocrinopathies referred as exophthalmos while non-endocrine as proptosis. In adults, thyroid orbitopathy is the most common cause of unilateral as well as bilateral exophthalmos. Other causes include nontuberculous infections, inflammatory conditions as pseudo tumor and neoplasms as cavernous hemangiomas, lymphangiomas, lymphomas and Wegener granulomatosis.

Proptosis secondary to a space-occupying lesion can result in a compromised visual function, color acuities, pupillary dysfunction and constriction of visual field due to compressive optic neuropathy. Proptosis due to any cause can lead to exposure keratopathy.

To establish the diagnosis of orbital tuberculosis, evidence of systemic active or inactive tuberculosis is looked for. Orbital tuberculosis has been reported in patients who did not suffer from pulmonary tuberculosis but some other areas like tubercular sinusitis and constrictive pericarditis.^[4] Our patients' chest radiograph did not reveal presence of primary complex, however our patient had

cervical lymphadenopathy with typical features of tuberculosis on cytology, osteomyelitis of orbit, raised E.S.R. and history of loss of weight.

The diagnosis is usually based on positive tuberculin test, inflammatory caseating granulomatous lesions on histopathological examination of tissue and positive culture of mycobacterium tuberculosis if specimens are obtained. MRI scanning is considered being better, but CT scan is superior for orbital bony structures.

The present case emphasizes that in endemic areas, tuberculosis should be considered as an etiology in the evaluation of proptosis especially in HIV positive patients. The mix of HIV infection and blindness may lead to increased economic dependency, psychosocial impact with loss of self-esteem and possible family neglect for patient. Early diagnosis and treatment with multidisciplinary approach required to improve the quality of life.^[9]

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