

Orbital Tuberculosis : A Case Report

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Abstract

A 58-year old Thai female underwent surgical exploration for a mass lesion of her left upper-lid. Orbital tuberculosis was post operatively diagnosed on the basis of histopathologic findings, and a positive tuberculin skin reaction. The patient responded well to anti-TB therapy. This case emphasized the point that tuberculosis should be considered in a differential diagnosis of lid mass.

Introduction

Orbital tuberculosis is an extremely rare disease.¹ The majority of cases reported are from developing countries with a high incidence of systemic tuberculosis. The diagnosis is usually not originally suspected.²⁻³

Case Report

A 58 year old female patient was referred to Prapokklao Hospital for evaluation of a left eyelid mass. During the previous six weeks she had noticed a gradual swelling of the left upper eyelid, together with a progressively painless proptosis of her left eye. A month before examination, the patient had visited a rural hospital in which a lid abscess was diagnosed. The patient was given

a four week course of cloxacillin with no improvement of the mass. Two weeks later the left eye became progressively more swollen whereas the right eye remained normal. She was referred to Prapokklao hospital for further evaluation. There were no known systemic disease, loss of appetite or loss of weight, exposure to tuberculosis.

On the first day of hospitalization (September 2nd 2002), the body temperature was 36.8 degrees celcius, the pulse rate was 82 beats/minute, the respiration rate was 20/minute and the blood pressure was 110/70 mmHg. Visual acuity were 20/30 for the right eye and 20/70 in the left. The left upper eyelid was swollen, red, but not tender or warm. There was a 0.5 x 2 cm. firm, non-movable mass involving the left upper eyelid.

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The bulbar conjunctiva was slightly injected and there was no proptosis of the left eyeball. Extraocular movements were full and the pupils were equal in diameter and reactive to light. Findings by fundoscopic examination were normal. A small nontender, preauricular, and a superficial cervical, lymph nodes were present on the left side. The chest was clear by auscultation. Abdominal and neurologic examinations revealed no abnormal findings. A tuberculin skin test was strongly positive (15 mm. in diameter of induration). A complete blood cell count was normal and VDRL was nonreactive. Urine analysis was normal. The urea nitrogen was 10 mg/dl, creatinine 0.8 mg/dl, the bilirubin 0.3 mg/dl, and serum protein 6.7 g/dl/ (the albumin 2.7 g/dl, and the globulin 4.0 g/dl). The aspartate aminotransferase was 19 U/L, alanine aminotransferase 14 U/L and alkaline phosphatase 39 U/L. Chest x-ray showed no lesions. Films of the orbit and paranasal sinuses revealed no opacification of left maxillary antrum, ethmoid, frontal, and sphenoids sinuses. There was no bony erosion or destruction of the orbit. The nasopharynx and base of skull appeared normal. A computed tomography of the brain (Fig. 1) revealed soft tissue mass at anterolateral aspect of the left orbit; there was no evidence of abscess/mass within the frontal lobe and parasellar areas; mucosal thickening of the right ethmoid sinus was observed. Sputum were negative for acid fast bacilli and culture for tuberculosis for 3 successive days.

The patient underwent surgical exploration of the left orbit. A inflammatory mass was found and biopsied.(Fig.2) The histopathology showed a caseating granulomatous inflammation (Fig.3) however, special stains for micro-organisms and

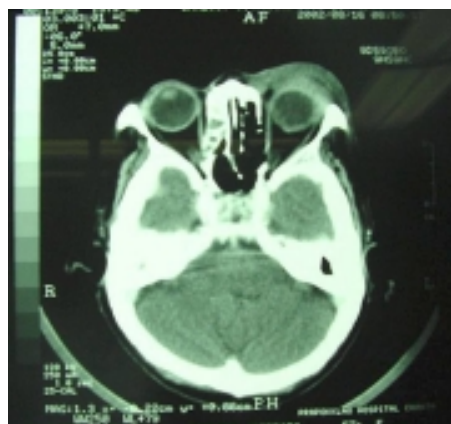


Fig. 1 CT scan showing a soft-tissue mass anterolateral aspect of the left orbit, not pushing the globe forward.



Fig. 2 2.3x1.5x1.0 cm gray white, rubbery mass removed from left upper eyelid

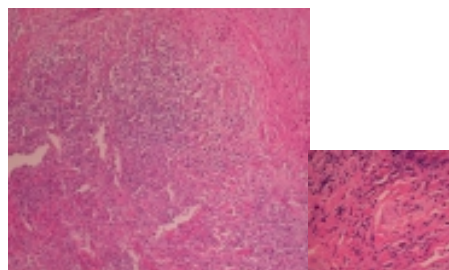


Fig. 3 Histopathology showing caseating granulomatous inflammation(left,hematoxylin and eosin,x100) with epithelioid cells(right, hematoxylin and eosin,x400)

fungi were also negative. No neoplastic cells were seen. The clinical diagnosis of tuberculosis was made on the basis of the strongly positive tuberculin skin test and the caseating granulomatous lesion in the specimens. The patient was started on anti-tuberculosis therapy consisting of INH 300 mg., rifampicin 450 mg., pyrazinamide and ethambutol 600 mg. once daily for two months. Followed by INH 300 mg., rifampicin 450 mg. once daily for the following four months. Resolution of the eye swelling occurred over a period of several months.

Discussion

Orbital involvement with TB is rare even in places where TB is endemic. Most cases recorded in English ophthalmic literature were those reported from countries in Africa and Asia.⁴⁻⁸ The most common form of orbital TB is periostitis, which occurs in the first two decades of life at a time when bony growth is still active in vascularized spongy tissue of the outer margin of the orbit.⁷ The disease may involve the soft tissues, lacrimal gland, the periosteum or the bones of the orbit wall. The infection may smolder for months, producing erythema, edema, cold abscesses, cutaneous fistula resulting in cicatricial ectropion.⁷ The disease develops slowly and is chronic. It shows gradual increasing proptosis, frequently with palpable mass in the substance of the lid, extending deeply into the orbital tissue so that the clinical picture of the orbital mass may be simulated.⁷ Other forms of ocular tuberculosis include nodular conjunctivitis, corneal ulceration, choroidal tubercles and tuberculous panophthalmitis.⁹⁻¹⁰

TB of the orbit may arise by direct extension from surrounding structures such as the paranasal sinuses, lacrimal gland or sac. It is rare for it to be due to hematogenous spread from a site of primary complex. Orbital TB occurs in patients with or without associated pulmonary tuberculosis. A tuberculin skin test, tissue biopsy and cultures for acid fast bacilli are required to make a diagnosis. Acid fast bacilli are difficult to detect in orbital pathological specimens and may be related to the fact that these granulomatous lesions are usually of the sclerosing type. The systemic work up should include thoracic radiography, CT-scan of the orbit and tuberculin skin test.

The patient reported here had no radiologic evidence of periostitis. Computed tomography revealed a mass lesion of the left orbit that was also visualized at the time of surgical exploration. In addition, the histopathology showed caseating granulomatous inflammation. The current recommendations for initial treatment of TB includes four drugs.¹¹ During the first two months, drug regimens should include isoniazid, rifampicin, pyrazinamide and ethambutol or streptomycin. When drug susceptibility results are available, the regimen should be altered as appropriate. Response to therapy is often gradual, and sometimes surgical debridement of granulation tissue and dead bone may have to be performed. This case emphasized the point that tuberculosis should be considered in a differential diagnosis of lid mass.

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Reference

1. Duke–Elder S. Textbook of ophthalmology. London: Kimpton, 1952;5:5459.
2. Agrawal PK, Jitenda N, Jain BS. Orbital involvement in tuberculosis. Indian J Ophthalmol 1977;24:12.
3. Jain MR, Chundawat H, Batra V. Tuberculosis of maxillary antrum and of the orbit. Indian J Ophthalmol 1979;1:18.
4. Mortada A. Tuberculoma of orbit and lacrimal gland. Br J Ophthalmol 1971; 55:565–7.
5. Baghdassarian SA, Zakharia H, Asdourian KK. Report of a case of bilateral caseous tuberculous dacryoadenitis. Am J Ophthalmol 1972;74:744–6.
6. Agrawal PK, Nath J, Jain BS. Orbital involvement in tuberculosis. Indian J Ophthalmol 1977;25(3):12–6.
7. Duke–Elder S. Systemic ophthalmology. Vol.13, part 2 : The ocular adnexa–lacrimal. Orbital and para–orbital diseases. London : Henry Kimpton;1974:902–5.
8. Maurya OPS, Patel R, Singh VTR. Tuberculoma of the orbit – a case report. Indian J Ophthalmol 1990;38:191–2.
9. Lincoln E, Sewell E. Tuberculosis in children. New York : McGraw–Hill Book Co.;1963: 242–8.
10. Mandel GL, Douglas RG, Bennett JE. Principles and practice of infectious diseases. New York : John Wiley and Sons, 1979:1017.
11. Initial therapy for tuberculosis in the era of multi–drug resistance : recommendations of the advisory council for elimination of tuberculosis. MMWR Morb Mortal Weekly Report. 1993;42(RR–7):1–8.