Case Report / Olgu Sunusu

Presumed tuberculomas of the choroid

Koroidin Tüberkülom Öntanısı

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ÖZET

Koroidal granülom özellikle immunkompetan bireylerde tüberkülozun nadir bir prezantasyonudur. Pozitif PPD testi dışında tüberkülozun klinik manifestasyonu olmayan fundus muayenesinde sol gözde koroidal lezyon ve sol gözde görmede belirgin azalma saptanan genç bayan hasta sunulmuştur. Tüberküloz öntanısı ile kortikosteroidin de bulunduğu antitüberküloz tedavi başlandı ve dramatik cevap alındı. Bu şekilde olan gözlerde tanı ve tedavide yüksek şüpheye sahip olmak önemlidir.

Anahtar Kelimeler: Koroidal granülom, tüberküloz öntanısı, antitüberküloz tedavi

ABSTRACT

Choroidal granuloma is a rare presentation of tuberculosis especially in immunocompetent individuals. We present a case of a young female with marked decrease in visual acuity of the left eye and a choroidal lesion on fundus examination however with no systemic manifestation of tuberculosis except a positive Mantoux test. A presumptive diagnosis of tuberculosis was made and the patient was put on anti tubercular treatment with corticosteroids to which she showed drastic improvement. Thus it is important to have a high index of suspicion for the diagnosis and treatment in these eyes.

Keywords: choroidal granuloma, presumed tuberculosis, anti tubercular therapy

INTRODUCTION

Tuberculosis (TB) is a communicable disease caused by Mycobacterium tuberculosis or related members of the TB complex. About 10% of infected individuals become symptomatic; 90% remain infected for the rest of their lives without manifesting the disease.(1) Intraocular tuberculosis (TB) produces a wide spectrum of clinical signs,the most common clinical presentation appears to be posterior uveitis. In a series of 158 patients with presumed intraocular TB from India, 66 (42%) had posterior uveitis, 57 (36%) anterior uveitis, 18 (11%) panuveitis, and the remaining 17 (11%) intermediate uveitis.(2)

CASE REPORT

A 27 years old female presented to the Medical Out Patient Department(OPD) with history of headache of 15 days duration with subsequent gradual diminution of vision of left eye of 10 days duration for which she was referred to the Vitreo-retina clinic of department of ophthalmology. Best Corrected Visual Acuity (BCVA) OS was 20/200 . Fundus examination revealed a choroidal raised lesion with fuzzy, irregular margins, ½ to 3/4 disc diameter (D.D) in size present superotemporal to the macula with satellite lesions present around the disc.(Fig 1, Fig 2)There was associated disc oedema and macular edema . The slit lamp examination of the anterior segment was unremarkable.Optical Coherence Tomography(OCT) revealed disc oedema(Fig 3) and increased thickness of the retinal pigment epithelium(RPE)-choriocapillaris layer, interruptions at the level of the RPE and inhomogenous retina.(Fig 4). The BCVA in the right eye was 20/20, anterior segment examination and fundus examination in the right eye was normal. The patient underwent complete systemic evaluation that included complete blood count, chest radiography, Cerebrospinal fluid(CSF) analysis , polymerase chain reaction(PCR) that were all normal except a positive Mantoux test at 15mm and raised ESR. We excluded sarcoidosis by the levels of angiotensin convening enzyme , serological investigations for toxocariasis and toxoplasmosis , ELISA for HIV, fluorescent treponemal antibody absorption test (FTA-ABS) for syphilis.Thus the probable differrental diagnosis were excluded. Patients refused diagnostic vitreous or aqueous tap for polymerase chain reaction. A presumptive diagnosis of Tuberculosis was made and patient was started on anti tubercular therapy(ATT). Fundus Fluorescein angiography(FFA) done at 2 weeks revealed early blocked fluorescence and late hyperfluorescence of the choroidal lesions, with leakage of disc. There was decrease in size of the choroidal lesions, and no macular oedema.(Fig 5) Subsequently, oral steroid,prednisolone 60 mg was started. There was drastic improvement in vision of the patient of left eye and final examination 2 months later revealed BCVA 20/20. FFA done after 2 months showed complete regression of disc oedema , no macular oedema, and residual scar and pigmentary changes at the macula.(Fig 6)

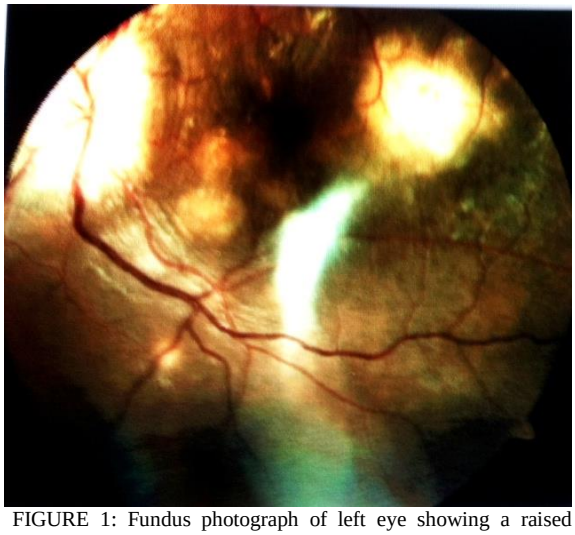

FIGURE 1: Fundus photograph of left eye showing a raised choroidal lesion present superotemporal to the macula with associated disc oedema.

DISCUSSION

Choroidal tuberculoma is rare except in cases with human immunodeficiency virus (HIV) infection .(3,4) Choroidal tubercles, identical to tubercles elsewhere in the body, were one of the earliest signs described in miliary TB.(5)

The presence of choroidal tubercles is indicative of hematogenous seeding of bacilli.(

6) Though most patients with ocular involvement have no history of pulmonary or other systemic forms (7-10) ,majority of the choroidal granulomas, present in patients with disseminated TB.(11-14)

Thus, the diagnosis of tubercular uveitis in the latter patients is not a major challenge. However, our patient did not have any systemic manifestation of the disease making a definitive diagnosis difficult. A high index of clinical suspicion is thus essential for the early diagnosis of tuberculous uveitis. In our patient, early diagnosis with subsequent commencement of treatment resulted in drastic and early improvement of vision. Late diagnosis and delay in management can result in serious sight threatening sequelae. Subretinal abscesses can occur from liquefaction necrosis within a tubercular granuloma and if given time to progress, these abscesses can rupture into the vitreous and result in endophthalmitis.(15)

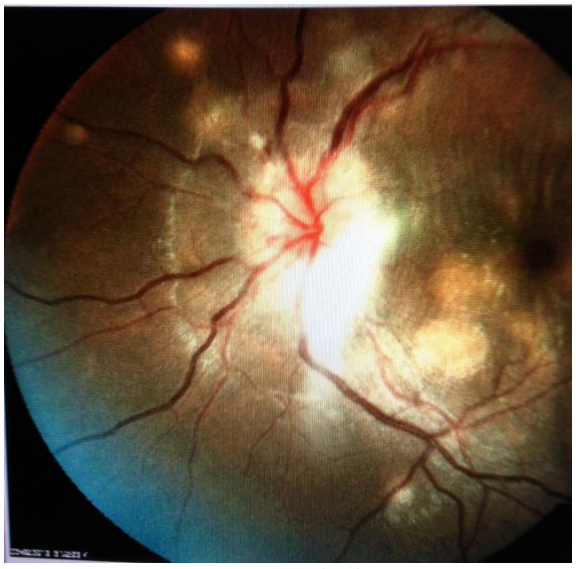

FIGURE 2: Fundus photograph of left eye showing satellite lesions present around the disc with associated macular oedema.

The large variations in clinical presentation and lack of uniformity in diagnostic criteria in the absence of histopathologic or microbiologic evidence make the diagnosis of tubercular uveitis difficult. In most studies, the diagnostic criteria for presumed tuberculous uveitis were: (7-10)

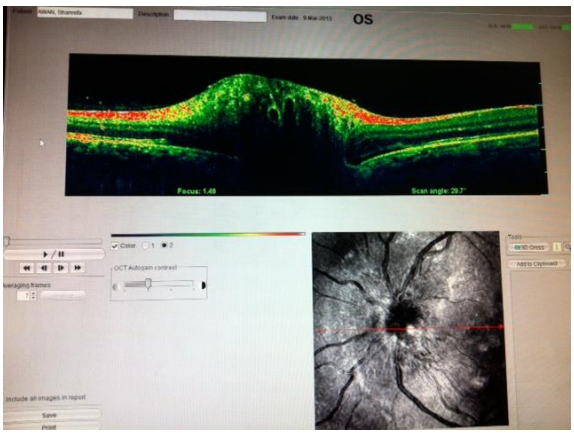

FIGURE 3: Optical Coherence Tomographic report of left eye showing disc oedema.

Ocular findings consistent with possible intraocular TB with no other cause of uveitis suggested by history of symptoms, or ancillary testing.

Strongly positive tuberculin skin test results (≥15 mm area of induration/necrosis).

Response to antituberculous therapy with absence of recurrences.

The gold standard for diagnosis of TB is demonstration of the M. tuberculosis from various body fluids or tissues. Newer diagnostic investigations for TB have come up. Interferon-gamma testing is being used as a specific method of detecting tuberculosis, and does not cross-react in patients with prior BCG vaccination or non-tuberculosis mycobacteria.(16,17) The chief limitations of this diagnostic strategy are limited availability and increased expense. Polymerase chain reaction(PCR) has been used for detecting tubercular DNA in ocular fluid samples. Doubts have been expressed about its utility, as many ocular manifestations may represent a delayed immune hypersensitivity reaction rather than a direct infection, thus having low sensitivity.(18)

In addition to clinical signs and diagnostic tests, it is important to exclude other diseases that might have a similar appearance to tuberculosis, such as sarcoidosis, toxoplasmosis, toxocariasis ,syphilis and HIV.

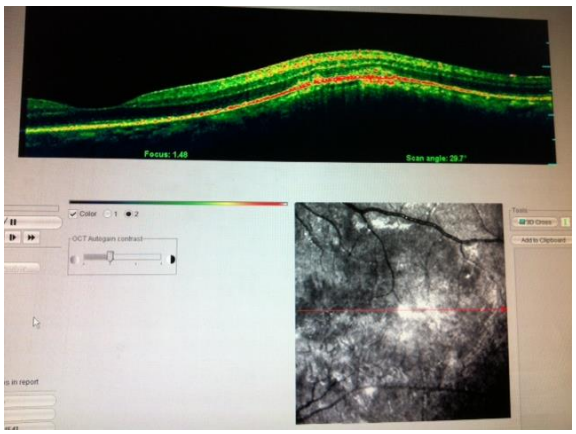

FIGURE 4: Optical Coherence Tomographic report of left eye in the region of the tuberculoma temporal to the macular area showing increased thickness of the retinal pigment epithelium(RPE)-choriocapillaris layer, interruptions at the level of the RPE and inhomogenous retina.

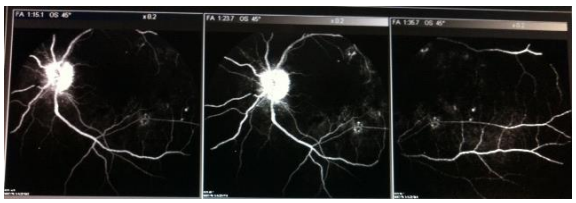

FIGURE 5A: Fundus Fluorescein angiography(FFA) picture showing early blocked fluorescence of the choroidal lesions.

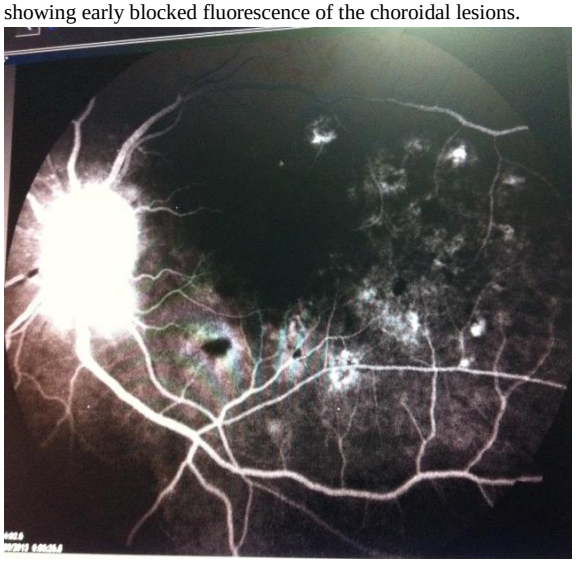

FIGURE 5B: Fundus Fluorescein angiography(FFA) picture showing late hyperfluorescence of the choroidal lesions, with leakage of disc.

Choroidal tubercles and tuberculomas generally respond well to ATT without any other treatment.(15) However, when tuberculosis-associated choroiditis is treated with ATT, initially there may be a paradoxical worsening; concomitant treatment with oral corticosteroids has been considered to circumvent this phenomenon (2) and prevent damage to ocular tissues from the inflammatory response.(2) In our patient, systemic Prednisolone in the dose of 1mg/kg/day was started in conjunction to ATT after the patient showed initial response to ATT. This is especially important, as TB is one of the few causes of uveitis with a definite effective treatment and where standard treatment with steroids in the absence of ATT could be sight or life threatening. Also, patients on ATT should be monitored for side effects from treatment. Ethambutol demonstrates dose-dependent toxicity and is rare in patients receiving less than 15 mg/kg.(2,3) Optic neuritis, red-green dyschromatopsia, central scotomas, disc edema and optic atrophy are known side effects of ethambutol, and therefore patients should be followed closely while on treatment (2,3) and baseline eye exams documenting visual acuity, visual field and color vision should be documented.

FIGURE 6: Fundus photograph of left eye 2 months after treatment showing complete regression of disc oedema , no macular oedema, and residual scar and pigmentary changes at the macula.

CONCLUSION

Tuberculosis is a readily treatable disease and the consequences of delay in either ocular or systemic diagnosis can be very serious for the patient. The absence of clinically evident pulmonary TB does not rule out the possibility of ocular TB. Thus it is important to have a high index of suspicion of the diagnosis. The diagnosis of ocular TB is frequently presumptive however, the remarkable response to treatment, with rapid improvement in visual acuity on ATT confirmed the diagnosis.

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