A Case of Choroidal Tuberculoma: A Nebulous Diagnosis

Dr Steph J Lindeque
University of the Witwatersrand | Dept. of Neurosciences | Div. of Ophthalmology

INTRODUCTION

South Africa leads the world in TB prevalence and incidence, and the presence of intracellular TB (IOTB) may be as high as 33% amongst South African patients with uveitis.1 The choroid is the most common ocular site of TB involvement, and choroidal tuberculoma is the most common choroidal manifestation (35%).2 Significant morbidity often results from intraocular TB, and choroidal involvement is associated with treatment failure and recurrence.3 IOTB is paucibacillary, and thus a confirmed diagnosis of IOTB is rare. Indeed there is no current gold standard diagnostic test, and as such the problem of over-and-under-diagnosis looms large.4 Antitubercular therapy (ATT) has been shown to result in a low treatment failure rate, but this rate increases with choroidal and vitreous involvement. The exact duration of ATT and the use of steroids remains a subject of some controversy.4

EXAMINATION

RIGHT EYE
• VA: HM with no improvement on pinhole
• Conjunctiva: Limbal injection
• Cornea: Fine keratic precipitates
• Anterior chamber: Deep, 4+ cells, 1mm hypopyon
• IOP: 6mmHg (left eye: 12mmHg)
• Iris: Posterior synechiae, Subtle RAPD, No nodules
• Lens: Early cataractous opacity
• Vitreous: Grade 4 haze
• Fundus: No view

LEFT EYE
• VA: 6/6
• Normal ocular exam

SYSTEMIC EXAMINATION
• No cough
• No night sweats
• No loss of weight
• Normal vital signs
• Normal systemic examination, including neurological exam

SPECIAL INVESTIGATIONS

B-SCAN ULTRASONOGRAPHY

Superiorly located choroidal mass with surrounding retinal elevation. No H-bands observed.

BLOOD TESTS
• CD4: 113 cells/µL
• HIV-Viral load: 7150 copies/ml
• ESR: 126 mm/hr
• CRP: 36 mg/L
• Serum ACE: 84 U/L
• C-ANCA: Positive, Anti-proteinase: Positive, Anti-neutrophil cytoplasmic: Positive
• FBC: 4.92/9.2/572 (MCV: 80)
• Differential count: Lymphocytosis with mild monocytosis
• Iron studies in keeping with anemia of chronic disease

NORMAL/NEGATIVE BLOOD TESTS

• U&E, LFT, TPHA, Toxoplasmosis, TB-Bactec, Vitamin B12, Hepatitis studies
• NORMAL/NEGATIVE BLOOD TESTS
• Iron studies in keeping with anaemia of chronic disease
• Differential count: Lymphocytosis with mild monocytosis

VITREOUS TAP:

• TB-PCR requested
• Lab performed Auramine O stain instead as per gatekeeping protocol
• Arginine O staining was negative, but TB-PCR was still denied
• Upon request to waive gatekeeping, lab informed that sample had been fully expedited on Auramine O stain

RIGHT EYE AT 1 MONTH FOLLOW UP:
• No signs of inflammation
• No pain reported
• Vision 6/60
• Anterior chamber quiet
• No signs of pigmentation
• Vitreous: Grade 2 haze
• Choroidal granuloma smaller (3,0DD)
• Continued to taper topical and oral steroids
• Patient defaulted follow up despite telephonic reminders

RIGHT EYE AT 2 MONTHS:
• Had continued TB treatment but defaulted steroids
• No pain reported
• VA: No light perception
• No signs of inflammation
• Anterior chamber quiet
• Vitreous: Grade 2 haze
• IOP: 4mmHg
• Pupil unreactive
• Dense lens opacity
• B-scan: Funnel shaped retinal detachment noted

B-SCAN ULTRASONOGRAPHY AT 2 MONTHS

DISCUSSION

No isolated sign or special investigation is enough to diagnose IOTB.5 As such; Gupta et al proposed classifying IOTB as confirmed, probable, or possible.5 Confirmed microbiological evidence from an ocular site is very rare. The clinician must rely upon ocular signs, evidence of extracellular TB (chest x-ray, sputum, etc.), as well as TB exposure (either documented or immunologically demonstrated).4 Smit et al demonstrated that the Tuberculin Skin Test is a sensitive diagnostic tool that has in no way been supplanted by the more expensive interferon-gamma release assays now available. Both of these tests may however yield false negative results in the presence of HIV and a CD4<100 x 106/L. Neither of these modalities offer satisfactory specificity, especially in TB endemic areas.6 ATT is central to obtaining a good outcome, and response within 2 months is of diagnostic importance in itself.1 Adjunctive corticosteroids are often used but have not shown to be of benefit in IOTB outcomes.4 In fact, recent evidence has emerged that they may be associated with poorer outcomes.2 Our patient was classified as probable IOTB based on the recent TB history, her typical clinical picture, and the exclusion of other causes. The choroidal and vitreous involvement was noted as an indicator of a guarded prognosis.

CONCLUSION

The patient was diagnosed with a probable choroidal tuberculoma. The patient showed initial improvement on TB treatment and systemic steroids, but ultimately had a poor visual outcome. Despite defaulting steroids, the inflammation did resolve on TB treatment alone, and the patient was free from pain at 2 month review.

This case highlights the diagnostic and management dilemmas associated with IOTB, as well as the efficacy of ATT.

REFERENCES


The author has no commercial relationships or conflicts of interest to disclose.