Case presentation:
Serpiginous-like chorioretinopathy
and presumed latent tuberculosis

Introduction

Serpiginous chorioretinopathy or choroiditis is a bilateral condition that typically presents with unilateral visual field loss and a normal anterior segment. There are a few conditions that can mimic this condition, one of which is ocular tuberculosis. Ocular TB can be differentiated from serpiginous choroiditis by vitritis, loss of weight, appetite or fever, other evidence of systemic involvement and by a positive tuberculosis test.1

I am presenting a case of a female patient with decreased vision in her left eye. After ophthalmic imaging, xrays and blood tests, she was diagnosed with serpiginous-like chorioretinopathy and presumed latent tuberculosis. According to a paper by L. Znaor et al. entitled Serpiginous-like choroiditis as sign of intraocular tuberculosis, “Tuberculosis infection, like serpiginous choroiditis, affects the choroid and may produce similar choroidal changes.”2 Mycobacterium tuberculosis is the bacteria responsible for TB. It has an affinity for highly oxygenated tissue which is why it is found in the lungs and may infect the oxygen-rich choroid.

Case Report

Medical history summary

10 cigarettes daily 2007.

Ocular history

This female office worker presented 18 years ago with atypical widespread chorioretinal scarring. She was asymptomatic with a visual acuity of 6/6 OD and 6/9 OS. The consultant noted confluent areas of flat pigment hypertrophy associated with areas of atrophy. It was also suspected that the changes were post-inflammatory. Colour photographs of the peripheral fundus were taken and the patient was discharged.

Twelve years later she had a left cataract extraction and attended several follow-up appointments during 2007 and 2008. The patient mentioned that she had been told by her GP that she was diagnosed with tuberculosis in 1993. This has not been documented in the lady's past medical history and the patient has no recollection of any treatment for TB. On examination, a few pigmented vitreous cells were present and an unusual foveal reflex noted. Colour fundus photographs were taken and blood tests were normal.

This 72 year old lady returned to the eye clinic in September 2013 complaining of blurring in her left eye and gradual worsening of peripheral vision without distortion. On examination she has widespread choroiditis which is worse in the left eye and has reduced the vision to her central island only. The patient underwent ophthalmic imaging, including fundus fluorescein and indocyanine green angiograms focussing on the left eye.

The choroidal vascular layer is visible throughout the ICG angiogram due to choriocapillaris degeneration and loss of retinal layers. In both angiograms, there is a normal hyperfluorescence of two areas of the retina indicating where it is still intact. Hypofluorescent patches indicate active lesions that are more clearly seen with ICG than FFA. FFA images reveal a hyperfluorescent margin of scarring that retains its serpiginous shape whilst late frames show staining of earlier hypofluorescent areas. Damage to the retinal pigment epithelium results in a window defect, allowing the choroidal vessels to be seen. Looking at the autofluorescence images we can see hypouautofluorescence due to loss of the retinal pigment epithelium. Lim et al. note that the histological findings of the lesions in serpiginous choroiditis are “atrophy of the choriocapillaris,

2 Znair et al. (2001) Serpiginous-like choroiditis as sign of intraocular tuberculosis. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3539566
retinal pigment epithelium and photoreceptor cells, and moderate diffuse lymphocytic infiltrates throughout the choroid.”

Optical coherence tomography revealed some cystoid macular oedema but no sub-retinal fluid and no diagnosis of choroidal neovascularisation was made. CNV occurs in 10 – 25% of patients with serpiginous choroiditis. On comparison with the colour fundus photographs taken since 1995, definite progression of the disease in the left eye is evident whilst the right eye appears stable.

In 2013 doctors queried congenital syphilis and carried out tests for toxoplasmosis, syphilis, polycythaemia and autoimmune disorders. After an additional blood test, the patient tested Elispot positive. T-SPOT.TB is a type of Elistpot assay that can detect both active and latent tuberculosis. Around the same time, a chest xray was performed by her GP because of weight loss. This was reported as normal but it was discovered that previous xray reports mention apical granulomas.

A diagnosis of serpiginous-like chorioretinopathy followed. This is a very slowly progressive condition which has been reported over the last few years as a condition that responds when the patient is treated with anti-tuberculosis therapy. In a 2011 study, V Gupta et al. concluded that out of the 84 patients with a positive tuberculin test, continued progression of choroiditis lesions occurred in 12 patients after initiating treatment. They also concluded that “increased immunosuppression with continuation of antituberculosis treatment resulted in good outcome.” However, immunosuppressants have the potential to exacerbate TB. The patient was referred to the Respiratory Team for treatment.

**Conclusion**

The involvement of a systemic condition in an intraocular disease is not always clear. Pigmented vitreous cells, pulmonary granulomas, and weight-loss were recorded and may have suggested a tubercular infection before the conclusive Elispot test was carried out.

With this lady, imaging over time was key to showing progression and making diagnosis. Colour fundus photography taken during the patient's hospital visits in 2008 and 2013 provided a valuable objective illustration of the disease's course. The angiograms confirmed that there was no choroidal neovascularisation and indocyanine green angiography helped to determine the extent of choroidal atrophy.

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4 Lee et al. (2002) Serpiginous choroidopathy presenting as choroidal neovascularisation. Available at: http://bjo.bmj.com/content/87/9/1184.full#ref-1