Findings that shed new light on the possible pathogenesis of a disease or an adverse effect

Atypical central serous retinopathy in a patient with latent tuberculosis

Deepak Vayalambrone,¹ Tsveta Ivanova,² Aseema Misra²

¹Ophthalmology Department, Ipswich Hospital NHS Trust, Ipswich, UK;

²Ophthalmology Department, Norfolk and Norwich University Hospital, Norwich, UK

Correspondence to Mr Deepak Vayalambrone, deepak_vayalam@hotmail.com

Summary

A 32-year-old Afro-Caribbean male presented with a 4 month history of blurred vision and distortion in his right eye. Fundus examination showed multiple pigment epithelial detachments which progressed over 2 months of observation to a large serous detachment of the macula. Fundus fluorescein angiography (FFA) showed multi-focal hyperfluorescence in the early phase which increased in the later stages. A diagnosis of multi-focal central serous retinopathy (CSR) was made. Due to the size of CSR and atypical findings on FFA further investigations including a T-spot test were performed. The T-spot test was reported as strongly positive and following discussion with the respiratory physicians he was started on empiric antituberculous therapy. Over the next 6 weeks, the patient had a significant visual improvement to 6/9 with resolution of the serous detachment.

BACKGROUND

Central serous retinopathy (CSR) is a poorly understood condition that has been strongly associated with type A personality and hypercortisolism with no proven pathogenic link. In clinical practice however, it is rare to find hypercortisolism in patients with CSR. While working in India, many years back one of the authors saw a patient with a rapid resolution of CSR when he was started on treatment for tuberculosis (antituberculous therapy (ATT) which incidentally was diagnosed around the same time. Fluorescein angiography (FFA) showed an atypical multi-focal pattern of leak in the patient. The case was never written up as there were permanent photographic records at the time. Subsequently, a number of patients showed similar patterns on FFA and a strong reaction on Mantoux testing but no clinical or radiological evidence of tuberculosis. A similar pattern of multi-focal leak on FFA in the patient described in this report led to a T spot test. While mild visual loss is common in acute CSR, it is rare for the visual acuity to be reduced to just 6/60 in a 2 month period of progression. The amount of fluid seen was also extremely unusual. The response of the CSR to ATT in the patient described in this report was nothing short of dramatic. The fluid had almost completely disappeared in 2 weeks though visual improvement was recorded only at the next visit which was 6 weeks after initiation of treatment. The unusual nature of the CSR, the response to treatment and previous experience prompted us to write this up. Of interest also is an unpublished case presented at the American Society of Retinal Specialists meeting in Vancouver in August 2010. The clinicians speculate that rifampin may be used to treat CSR though they were unsure of the mechanism.

CASE PRESENTATION

A 32-year-old male presented with a 4 month history of blurred vision and distortion in his right eye (RE). He was Afro-Caribbean and emigrated from Angola 10 years ago. He was systemically well. Visual acuity (VA) was 6/6 RE and 6/5 LE. Fundus examination showed multiple pigment epithelial detachments (PED) of varying sizes within the macula and this was confirmed on optical coherence tomography (OCT) scan (figure 1a). A diagnosis of idiopathic PEDs was made with a 6 month review. Two months later he presented with a history of progressive right visual loss. VA was 6/60 RE. The VA dropped further to 1/60 over the next week. Funduscopy showed a large serous detachment of the macula. A diagnosis of multi-focal CSR was made. Due to the size of CSR, atypical findings on FFA and ethnic origins, investigations including a T-spot test were performed.

INVESTIGATIONS

Ocular coherence tomography confirmed a large serous detachment (figure 1b). Fundus FFA showed five discrete areas of hyperfluorescence in the early phase which increased in size in the later stages (figure 2). The T-spot test was reported as strongly positive.

TREATMENT

The respiratory physician who reported the T-spot felt that the strongly positive test indicated latent tuberculosis infection (LTBI) in the absence of any clinical or radiological evidence of pulmonary tuberculosis. The patient was started on empiric ATT: rifampicin, isoniazid, pyrazinamide and ethambutol.

Figure 1 Serial ocular coherence tomography scans showing a) multiple serous detachments, b) large serous detachment and c) appearance following resolution.

Figure 2 FFA showing multifocal leaks (photograph taken 56 s after the injection).

OUTCOME AND FOLLOW-UP

Over the next 6 weeks, the patient had a significant visual improvement to 6/9. The serous detachment had

completely resolved (figure 1c). Clinical resolution of the serous detachment was noted at 2 weeks following initiation of ATT though the improvement in the VA was only noted at the next visit 4 weeks later.

DISCUSSION

CSR is characterised by accumulation of fluid resulting in circumscribed elevation of the retina in the posterior pole. Male gender, type A personality, raised levels of endogenous steroids, use of exogenous steroids¹ and *Helicobacter pylori*² have been implicated. Tuberculosis, whether latent or active has never been linked with CSR in the literature although anecdotal evidence does exist. A review of LTBI is beyond the scope of this case report but it can potentially be associated with ocular manifestations.³ One of the authors (DV) has seen rapid resolution of CSR in patients who were incidentally started on ATT at the same time when CSR had been diagnosed. A group from Chicago suggested a role for rifampin in the treatment of CSR in a case presented at the American society of retinal specialists meeting in Vancouver in 2010. In our case, rapid resolution of serous fluid was seen following commencement of ATT. The T-spot test is a rapid technique to detect latent tuberculosis with a high specificity and sensitivity.⁴ An additional advantage of the T spot test is that it does not show false positives in patients who have immunised with the BCG vaccine unlike the standard skin test. Atypical cases of CSR for example, large serous detachment, multi-focal leaks on FFA which do not show the classic 'ink-blot' or 'smoke-stack' appearance together with possible exposure to tuberculosis, should prompt investigation for tuberculosis as a possible underlying cause.

Learning points

- ▶ Atypical CSR should prompt a search for potentially treatable infectious conditions.
- ▶ Latent tuberculosis infections may be linked to CSR.
- ▶ A T-spot test may be a better diagnostic test for LTBI than the standard skin test.

Competing interests None.

Patient consent Obtained.

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