Reminder of important clinical lesson

Tubercular serpiginous-like choroiditis

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Correspondence to Dr Marta Esteves Guedes, marta.ce.guedes@gmail.com**Summary**

Choroidal tuberculosis (TB) infection may present itself as a diffuse choroiditis that resembles serpiginous choroiditis, usually treated with immunosuppressants. Recent studies have demonstrated that patients with serpiginous-like choroiditis and evidence of systemic or latent TB are best treated with antituberculosis treatment (ATT) in addition to the corticosteroid therapy. The authors present a case of a 58-year-old man with decreased vision in his left eye. His best-corrected visual acuity was 20/20 right eye and 20/200 left eye. Fundusoscopic examination revealed a diffuse choroiditis. Mantoux skin test showed an area of induration measuring 30×35 mm and the patient started ATT with complete resolution of retinal lesions after 2 weeks of treatment. His final visual acuity was 20/25 in the left eye with no recurrences over a follow-up of 6 months. The use of ATT in these patients is likely to reduce active inflammation and eliminate future recurrences.

BACKGROUND

One of the extrapulmonary sites of tuberculosis (TB) infection is the eye where it can manifest itself as an uveitis. Intraocular TB may pose a diagnostic challenge since about 60% of patients with extrapulmonary TB have no evidence of pulmonary infection¹ and although polymerase chain analysis of intraocular fluids or tissue biopsies may be performed,^{2–6} these are invasive tests that might carry a potential risk of morbidity. Therefore, the diagnosis of intraocular TB remains presumptive in the majority of cases being based on an ocular presentation suggestive of TB with 1) evidence of systemic TB or 2) positive tuberculin skin test consistent with latent infection.^{7–8} TB-related uveitis can mimic various other entities⁹ and its clinical manifestations include chronic granulomatous anterior uveitis, solitary or multiple choroidal tubercles, retinal vasculitis and multifocal choroiditis.^{3–10–11} Choroidal infection may also present itself as a diffuse choroiditis that resembles serpiginous choroiditis.¹¹ Serpiginous choroiditis is a chronic and progressive choriocapillaropathy with secondary retinal involvement, characterised by the presence of gray-white lesions that spread centrifugally from the peripapillary region. It was presumed to be solely autoimmune in aetiology and usually treated with immunosuppressants^{12–13} but patients with concomitant evidence of systemic TB infection might show progression of retinal lesions despite corticosteroid treatment. Recent studies have demonstrated that there is in fact an association between serpiginous choroiditis and systemic TB^{11–14} so that some patients who present with this form of choroiditis are best treated with antituberculosis treatment (ATT) in addition to standard corticosteroid therapy.^{11–14}

CASE PRESENTATION

A 58-year-old man, homeless, without any relevant medical history, presented with a decreased vision in his left eye lasting for 8 days. His best-corrected visual acuity was 20/20 right eye and 20/200 left eye. Slit-

lamp biomicroscopy of the left eye revealed no anterior segment inflammation and moderate vitritis (2+). Fundusoscopic examination of the left eye showed diffuse choroiditis with multifocal, yellowish-white, subretinal lesions scattered on the posterior pole and nasal peripapillary region (figure 1). On fluorescein angiography, the multifocal lesions showed initial hypofluorescence with late hyperfluorescence (figure 2). Mantoux skin test showed an area of induration measuring 30×35 mm after 48 h. Chest radiograph and CT of the chest, as well as sputum culture, were negative for pulmonary infection. The patient started ATT with Rifater (120 mg rifampin, 50 mg isoniazid and 300 mg pyrazinamide) and pyridoxine supplementation with complete resolution of all retinal lesions after 2 weeks of treatment (figure 3). After 2 months treatment with Rifater, the patient maintained ATT with rifampicin and isoniazid. No systemic corticosteroid treatment was added. His final visual acuity (VA) was 20/25 in the left eye with no recurrences over a follow-up of 6 months after initiating therapy.

INVESTIGATIONS

Fluorescein angiography: the multifocal lesions showed initial hypofluorescence with late hyperfluorescence (figure 2).

Mantoux skin test showed an area of induration measuring 30×35 mm after 48 h. Chest radiograph and CT of the chest, as well as sputum culture, were negative for pulmonary infection.

DIFFERENTIAL DIAGNOSIS

- ▶ Serpiginous-like choroiditis associated with latent TB infection
- ▶ Serpiginous choroiditis
- ▶ Acute posterior multifocal placoid pigment epitheliopathy (APMPPE).

This patient had a diffuse choroiditis with yellowish-white, subretinal lesions scattered on the posterior pole and nasal peripapillary region showing the centrifugal

Figure 1 Fundus of left eye showing diffuse choroiditis with multifocal, yellowish-white, subretinal lesions.

Figure 2 On fluorescein angiography, the multifocal lesions showed initial hypofluorescence (on the left) with late hyperfluorescence (on the right).

spread characteristic of serpiginous choroiditis. The posterior location of retinal lesions as well the presence of vitritis account for the poor VA at presentation.

Serpiginous choroiditis and acute posterior multifocal placoid pigment epitheliopathy are inflammatory choriocapillaropathies that may have similar fundoscopic features but distinctive clinical courses since APMPE is commonly associated with a good visual prognosis and does not require therapy. The poor VA at presentation and the distribution of the retinal lesions was more suggestive of serpiginous choroiditis but before starting this patient on corticosteroids it was important to rule out a latent TB infection since this condition can manifest itself in the eye as a serpiginous-like choroiditis.^{11–14}

The patient had evidence of moderate vitritis and a vitreous biopsy could have been performed, but the Mantoux skin test was clearly positive in this case making it pointless

to perform an invasive procedure with a potential risk of morbidity.

TREATMENT

The patient was treated with Rifater (120 mg rifampin, 50 mg isoniazid and 300 mg pyrazinamide) and pyridoxine supplementation for 2 months and has been under medication with 120 mg rifampin and 50 mg isoniazid for the last 4 months without any recurrences. Isoniazid and rifampin will be continued for at least 9 to 12 months since prolonged ATT therapy is recommended in patients with extrapulmonary TB. Regarding the concomitant use of systemic corticosteroids, it is well known that this association is highly beneficial in patients with evidence of latent TB infection since corticosteroid treatment may help limit damage to ocular tissues caused from delayed type hypersensitivity while ATT helps in reducing the number of

Figure 3 Fundus of left eye after initiating treatment with ATT showing complete resolution of retinal lesions.

recurrences.¹⁵ However, there have been previous reports of patients with TB infection and multifocal choroiditis in which intraocular inflammation was controlled only with the use of ATT as soon as the diagnosis was suspected.¹⁶ In this case, the patient was started on ATT alone since we usually delay corticosteroid treatment for about 1 or 2 weeks after starting ATT to prevent from a possible a flare-up of systemic TB by activating a latent infection.¹⁷ Since the patient showed good visual recovery and complete resolution of all retinal lesions after only 2 weeks of treatment, no corticosteroid therapy was added in this case.

OUTCOME AND FOLLOW-UP

No recurrences over a follow-up of 6 months after initiating therapy.

DISCUSSION

Extrapulmonary TB, including intraocular infection, may occur in the absence of histological and radiological evidence of pulmonary involvement. Even though there are no recommendations for starting ATT in uveitis patients with latent TB,⁷ it is possible that some forms of TB-related uveitis like retinal vasculitis and serpiginous-like choroiditis are related to a hypersensitivity reaction to tubercular antigens and so, the use of ATT in these patients is likely to reduce active inflammation and eliminate future recurrences. Moreover, the tuberculin skin test continues to be a useful screening test for latent TB especially in selected patients with clinical findings characteristic of intraocular TB and no symptoms or signs suggestive of other aetiologies.

Learning points

- ▶ Extrapulmonary TB may occur without histological and radiological evidence of pulmonary involvement.
- ▶ The tuberculin skin test continues to be a useful screening test in selected patients with clinical findings characteristic of intraocular TB.
- ▶ ATT is likely to reduce active inflammation and eliminate future recurrences in patients with evidence of latent TB and serpiginous-like choroiditis.

Competing interests None.

Patient consent Obtained.

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