

# Clinical case: An atypical presentation of a common infection

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## Presentation of the case

A six-year-old girl presented with a one year history of painless, non-purulent conjunctivitis of her left eye which had been treated on two occasions with topical antibiotics with no effect; Figure 1. Her vision was unaffected and she had no photophobia or blepharospasm. She had a two-week history of fever and anorexia but had previously been fit and healthy with no significant past medical history of note. She was referred to our clinic after re-presenting to The Lions Sight Eye Hospital with a persistent, painless red eye.

Examination of the left eye revealed four discreet, raised, conjunctival lesions near the corneal limbus with a small adjacent corneal opacity and surrounding inflamed conjunctival vessels. (Figure 1). Her right eye was completely normal. She was also noted to have submandibular, axillary and epitrochlear lymph-node enlargement and a generalised papular-pruritic skin rash but nothing else of note. The rest of her physical examination was normal. Her HIV status was unknown and there was no history of a tuberculosis (TB) contact.

Initial investigations included fundoscopy, which was normal, a normal full blood count, and a positive HIV test.

She was subsequently started on treatment and on follow-up in clinic four weeks later her visible eye signs had almost completely resolved; Figure 2. However, the corneal lesion persisted. Slit-lamp examination revealed a small, dense superficial corneal opacity at six o'clock that was quiescent. The entire inferior quarter of the cornea was more diffusely affected, with mild residual thickening and the formation of a superficial demarcating iron line separating it from the superior uninvolved areas of the cornea. Keratic precipitates were present and were most marked on the inferior quarter of the corneal endothelium. There was a mild iritis, but no posterior synechiae and no iris nodules or other abnormalities.

**1. What classical clinical sign did examination of her eye reveal?**

**2. What further investigations would help to identify the underlying cause of her eye signs?**

**3. What are the most common causes of this condition?**

**4. How would you manage this case?**



Figure 1: Examination of left eye at presentation



Figure 2: Examination of left eye one month after treatment commenced



Figure 3: Mantoux site one week after test completed.

## Discussion of the case

1. Examination of her eye showed phlyctenular conjunctivitis (PC) / phlyctenulosis. (From the Greek, meaning a blister or pustule) (See figure 1)

2. A Mantoux (tuberculin skin test) test produced a massive, indurated lesion measuring 30mm in diameter, which subsequently ulcerated; Figure 3.

A chest x-ray was completely normal. Induced sputum samples were collected and sent for microscopy and *M. tuberculosis* culture.

3. The most common cause of phlyctenular conjunctivitis is a delayed hypersensitivity reaction usually as a result of tuberculosis (TB) or staphylococcal infection (which is often associated with blepharitis). Rarely it may be due to other infectious agents such as coccidiomycosis, candidiasis or lymphogranuloma venereum.

4. In view of the positive Mantoux test the patient was commenced on four-drug TB treatment according to the standard National TB Programme (NTP) schedule – Rifampicin (R), Isoniazid (H), Pyrazinamide (Z), and Ethambutol (E)<sup>1</sup>. One percent hydrocortisone cream was also applied to her inflamed Mantoux site to reduce the irritation, prevent scratching and secondary bacterial infection. Dexamethasone eye drops were commenced to reduce local inflammation together with topical antibiotic cover to avoid exacerbating any co-existent bacterial infection.

At follow-up one month later the conjunctival nodules and inflammation had almost subsided but the corneal lesion persisted. Healing usually occurs over a 10–14 day period, with residual stromal scar. Ideally, the patient should be reviewed within the first week because of the potential for side effects with topical ocular steroid use. In addition

to worsening co-existent infection these include: cataract formation and raised intra-ocular pressure, especially when used for several weeks or more. When the symptoms have significantly improved the corticosteroid eye drops are slowly tapered over two weeks. The patient was referred to the HIV clinic for a CD4 count, staging and commencement on cotrimoxazole prophylaxis. Her CD4 count was 1050 which, according to current Malawi National HIV guidelines, is well above the minimum level of 350 for initiating anti-retroviral therapy (ART) in a child over 5 years of age<sup>2</sup>. However, given that PC may be a presenting feature of TB she was categorised as having WHO Stage 4 disease (extra-pulmonary TB), referred for ART and commenced on AZT, 3TC and efavirenz according to the Malawi National HIV guidelines. Antiretroviral therapy was started within two weeks of commencing her on RHZE<sup>2</sup>.

PC may be a presenting feature of TB especially in areas of high TB endemicity such as Malawi. It frequently presents in children between 5-10 years of age and more often in girls. Like erythema nodosum, which may also be associated with TB, it is generally thought of as a hypersensitivity reaction to mycobacterial antigens. The hypersensitivity can also be associated with uveitis, retinitis, and ischaemic retinal vasculitis with widespread vascular occlusion and

neovascularisation of the retina<sup>3</sup>. In these patients, the source of the TB causing the immune response might be difficult to locate, as was the case in this patient, and treatment for the eye may need systemic steroids to reduce the inflammatory response in addition to anti-tuberculous therapy. Any patient in whom TB is suspected should always be tested for HIV.

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We regret that, since the writing of this article, one of its co-authors – Mr. William Chagona – has passed away. His recognition of the significance of the eye signs in this case are a testament to his skill and knowledge as an eye specialist

### References

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