

Tuberculous keratoconjunctivitis

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Abstract

A 15-year-old West Indian boy had a left keratoconjunctivitis (KC) initially thought to be allergic in origin. He then developed a facial vesicular skin rash and a diagnosis of herpes simplex was suspected. Viral cultures were negative and there was a poor response to topical antiviral treatment. The KC progressed and became bilateral causing considerable reduction in the visual acuities. He complained of general fatigue and was pyrexial with generalised non-tender lymphadenopathy. There was a shadow in the upper lobe of the right lung. The bronchus was semiocluded by a non-caseating granuloma but no acid fast bacilli were found in the sputum or bronchial washings. In the presence of a strongly positive Heaf test, anti-tuberculous treatment was instituted which led to rapid resolution of all the systemic and ocular signs.

Case report

A 15-year-old West Indian boy with no significant history and apparently in good general health developed a sore, red left eye. He was born in the UK and had not been abroad. Treatment with topical antibiotics achieved only a slight relief of symptoms. On referral he was found to have limbal follicles with hyperaemia and moderate papillary reaction of the upper tarsal conjunctiva in the left eye. The visual acuities (VA) were 6/5 right and 6/6 left. He was diagnosed as limbal vernal and treated with sodium cromoglycate 2% drops.

Two weeks later he returned with a 3 day history of photophobia and swelling of both cheeks. The right VA was unchanged but the left was reduced to 6/9. There was a left central superficial corneal stromal infiltrate. He had raised, hyperaemic limbal lesions in both eyes. There was a vesicular rash around the nostrils with bilateral preauricular lymph node enlargement. Specimens from the conjunctiva and skin vesicles were obtained for serology and virus isolation. Treatment with topical acyclovir to the skin and the eyes was started.

One week later the left eye was painful and the VA reduced to 6/18. The skin rash had spread to involve the chin and the forehead. There was bilateral marked papillary conjunctivitis. The left cornea had a 1 mm diameter epithelial defect with an underlying infiltrate associated with an anterior uveitis. The preauricular, submental, and submandibular lymph nodes were enlarged. Mydriatics were added to the antiviral treatment.

Three days later the left eye became more comfortable. The epithelial defect had healed but the stromal infiltrate was deeper and denser. The left VA was 6/60. The right VA had also deteriorated to 6/18 and there were multiple

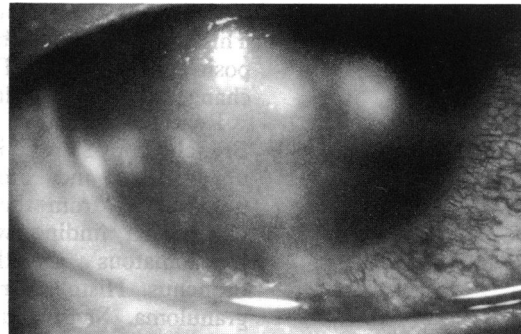


Figure 1 Tuberculous keratoconjunctivitis. Corneal erosions with underlying stromal infiltration.

corneal erosions with underlying stromal infiltration (Fig 1). There was a right endotheliitis and anterior uveitis. The patient was generally unwell with a temperature of 37.4°C and mild generalised lymphadenopathy. Virus isolation was negative. Serology did not show significant antibodies to *Chlamydia*, herpes virus, or adenovirus.

Only mucoid and epithelial material with some polymorphs were found in corneal scrapes. Trypsin digest lid swabs grew *Staphylococcus aureus*.

Chest x ray revealed paratracheal and hilar lymphadenopathy with some consolidation in the anterior segment of the right upper lobe.

The IgE was 458 kilounits/l (normal, 20 kilounits/l), monospot (glandular fever test) was negative, ESR 37 mm/h and there was a 7% eosinophilia: $1.07 \times 10^9/l$ (normal, 0.04-0.4).

The differential diagnosis of the skin lesions (Fig 2) included eczema or infected eczema while

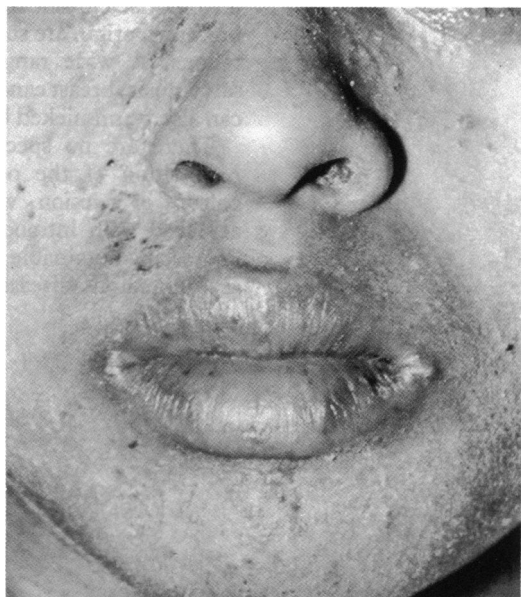


Figure 2 Tuberculous vesicular skin rash.

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the ocular manifestations could have been attributed to bilateral herpes simplex virus with atopy or keratitis secondary to staphylococcal hypersensitivity. However, considering the chest x ray findings it was felt that the underlying pathology could have been sarcoidosis or tuberculosis, the latter being more likely in view of the initial pyrexia. A presumptive diagnosis of tuberculous phlyctenular keratoconjunctivitis was made. This was supported subsequently by a grade IV positive Heaf test. The eye treatment was changed to topical prednisolone acetate 1%.

Repeated sputum samples were sterile. Bronchoscopy showed inflammation of the right upper lobe and bronchial dilatation with pus coming from the anterior segment. An unexpected finding was the presence of a papillomatous growth semioccluding the bronchus. Histology revealed a non-caseating granuloma. Stains for acid fast bacilli were negative.

Anti-tuberculous treatment was started with Rifater tablets (isoniazid, pyrazinamide, rifampicin). Over the following month the patient's general condition improved. The ocular inflammation and the keratitis resolved. The acuities recovered to 6/5 each eye.

Discussion

In England and Wales 7406 new cases of tuberculosis were notified in 1982.¹ The majority of cases occur in immigrants from the Indian subcontinent. The overall rate of tuberculosis for all ethnic groups is 18.3 per 100 000 population; the rate for the white ethnic group being 10.7; the Indian subcontinent group 38.2; and the West Indian group 31.2.² Other risk factors include drug addiction, diabetes, and old age.³ AIDS could become an added risk factor.⁴

The morbidity and mortality from tuberculosis has declined steadily for several decades. This disease is now treatable and curable. However the diagnosis can be difficult particularly with extrapulmonary disease which is becoming more common⁵ and can masquerade as various conditions.³ Myocardial disease,⁶ peritonitis,⁷ meningitis,⁸ chronic renal failure,⁹ and pyrexia of unknown origin are some of the possible presentations. A wide range of conditions such as sarcoidosis, breast cancer,¹⁰ and Crohn's disease¹¹ can also be mimicked by tuberculosis.

There are no specific tests apart from the recognition of the organism on histology or culture of a lesion, which is something rarely achieved with intraocular disease. Tissues are not easily obtainable and typical histology of granulomatous disease is rarely seen.¹² Current

techniques require several weeks to months before cultures can be read.¹³ Therefore in many cases the diagnosis is presumptive.

Ocular involvement in tuberculosis is comparatively rare¹⁴ and the spectrum of presentation is very wide. There has been a relative decrease in the prevalence of tuberculous uveitis during the last 40 years.¹⁵ There have been a number of ophthalmic cases reported because the diagnosis of tuberculosis was unsuspected. These range from a case of tuberculous uveitis presenting 34 years after a primary articular focus,¹⁶ to cases where tuberculosis mimicked a retinoblastoma¹⁷ or a pseudoglioma which, after enucleation, was diagnosed on histopathology to be retinal tuberculosis.¹⁸ Phlyctens are probably the most common ocular manifestation of tuberculosis.¹⁹

It is important that while the rate of tuberculosis is falling our awareness of the disease and its widening spectrum does not. This relatively uncommon diagnosis is often difficult to confirm; however it should be particularly considered as a cause of phlyctenular keratoconjunctivitis.

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