PRIMARY CONJUNCTIVAL TUBERCULOSIS*†

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The first cases of tuberculosis of the conjunctiva were collected by Sattler (1874). Numerous cases have since been reported, but it has always been an uncommon condition, and with improved treatment of pulmonary tuberculosis it is now becoming extremely rare. The affection most commonly occurs in young women and was last recorded in England by Juler (1949). Further cases were reported in Ireland (Wheeler and Sinclair, 1952) and in Edinburgh (Eadie, 1954).

The condition should not yet be dismissed as no longer occurring, and a further case of primary conjunctival infection is described below.

Case Report

A 12-year-old school-girl came to the Birmingham and Midland Eye Hospital in November, 1965, with a 4-day history of a painful swollen left eye.

Examination.—The unaided visual acuity was 6/9. The globe and lids were severely chemosed. There was follicle formation in the lower fornix and development of a fibrinous membrane over the upper tarsal plate. There was one enlarged pre-auricular lymph gland. At this examination no other abnormalities were found.

Treatment was commenced with local neomycin and systemic penicillin.

Conjunctival scrapings showed pus cells and lymphocytes but no inclusions. Cultures for bacteria and viruses were reported sterile.

The blood picture was normal, with a white cell count of 5,400, and erythrocyte sedimentation rate of 7 mm. in the first hour. X-ray studies of the sinuses and left orbit were normal. A Mantoux test was positive at 1:10,000 dilution.

Progress.—The condition improved slightly, and then remained unchanged for nearly a month, in spite of changing the antibiotic treatment. Repeated cultures from the conjunctiva showed no growth, and the erythrocyte sedimentation rate remained normal at 8 mm. in the first hour. At this time a chain of enlarged lymph glands developed on the left side of the neck. At the next visit some small follicles were seen in the lower fornix of the right eye and a small nodule developed at the limbus on the left eye.

Diagnosis.—Primary conjunctival tuberculosis was then considered to be a possibility, and a full general medical examination was carried out by Dr. A. Paton, consultant physician to the Birmingham and Midland Eye Hospital, who was asked to look for evidence of tuberculosis. He found no signs of general disease, and the chest x-ray was normal. Under general anaesthesia a biopsy and conjunctival scrapings were taken from the left lower fornix for microscopy and guinea-pig inoculation.

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Treatment was changed to gutt. streptomycin with oral isoniazid 100 mg. three times daily with para-amino salicylic acid 5 g. three times daily, and there was a rapid improvement in the clinical picture.

No acid/alcohol-fast bacilli were seen in the scrapings, and no tubercles developed in the guinea-pig. However the pathologist, Dr. R. Barry, reported that the microscopical appearances were those of tuberculosis, with areas of necrosis resembling caseation, collections of inflammatory cells peripherally, and giant cells, some of Langhans type (Figure.)

![Figure](image)

Figure.—Caseating tuberculous follicle in the conjunctiva with Langhans-type giant cells. ×400.

Two or three acid/alcohol-fast bacilli, morphologically resembling *Mycobacterium tuberculosis*, were seen on searching eight sections stained by Ziehl-Neelsen technique.

Intra-muscular streptomycin was added to the regime of treatment. The patient continued to improve and the cervical glands receded; 2 months later there was some residual thickening and scar formation in the lower fornix of the left eye, but the adenitis had almost completely settled. Questioning showed that the family was fit and well, and the source of infection was not found.

Discussion

Variations in the clinical picture of tuberculosis depend on the immuno-allergic state of the patient. Infection of the conjunctival sac can occur as a primary infection which is probably airborne, or, more commonly, as a secondary infection.
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In this instance the spread to the conjunctiva can result from contact with a contaminated finger or handkerchief, or from a nearby focus of infection. Sometimes the metastasis is blood-borne (Duke-Elder, 1965). In this patient the infection of the left eye appeared to be primary, with secondary involvement of the other eye at a later stage.

The only certain means of diagnosis is by the microscopical appearance or by development of tubercles in a guinea-pig after inoculation with infected material. The microscopical picture is characteristic, and transmission of infection to a guinea-pig is important but not essential (Wheeler and Sinclair, 1952). Kamel (1950) found that the bacillus had been seen in only 25 per cent. of cases reported in the literature. In some instances recovery occurs with conservative treatment (Bruce and Locatcher-Khorazo, 1947), but others resolve only slowly with an anti-tuberculous regime.

Summary

A recent case of primary conjunctival tuberculosis is described. It responded well to anti-tuberculous treatment.

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REFERENCES