Tropical pulmonary eosinophilia in a Saudi Arabian female

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Summary

The first recorded case of tropical pulmonary eosinophilia from Saudi Arabia is reported. A 57-year-old female presented with paroxysmal cough, wheezing and shortness of breath. The white cell count was $27.0 \times 10^9/l$ with 80% eosinophils, the serum IgE was grossly elevated and there were flitting pulmonary opacities on X-ray. Following treatment with diethylcarbamazine the patient's symptoms were relieved dramatically, the white cells, eosinophil counts and the serum IgE returned to normal and the pulmonary opacities cleared. The source of filarial infection is uncertain.

Introduction

The syndrome of paroxysmal cough, wheezing, low grade fever and persistent eosinophilic leucocytosis known as tropical pulmonary eosinophilia, occurs mainly in India, South-East Asia, the West Indies, and northern South America in areas where filariasis is endemic. The characteristic features of the syndrome are cough and breathlessness, a persistent blood eosinophilia of $3.0 \times 10^9/l$ or more, a raised erythrocyte sedimentation rate, persistent pulmonary shadows radiologically, positive filarial serology and resolution of the illness following treatment with diethylcarbamazine (Danaraj, 1971).

Case report

A 57-year-old Saudi Arabian female from Medina presented in September 1979 with a 10-day history of paroxysmal cough, wheezing and shortness of breath, all worse at night. She had lived all her life in Medina and had never been abroad. On examination she looked ill, was dyspnoeic and had rales and rhonchi over both lung fields. The liver, spleen and lymph nodes were not palpable.

Investigations showed a white cell count of $27.0 \times 10^9/l$, with 80% eosinophils. The erythrocyte sedimentation rate was 98 mm in the first hour. Sputum examination showed numerous eosinophils but no larvae nor ova. Serum IgE was grossly elevated at 4010 i.u./ml (Neva *et al.*, 1975). Other immunoglobulins were normal. Liver function tests,

serum urea and electrolytes, urinalysis and electrocardiograms were normal. A filarial complement fixation test performed 3 weeks after treatment was negative. Earlier samples were lost in transit to a laboratory abroad. Serial chest X-rays showed ill-defined soft, fluffy, poorly circumscribed pulmonary opacities which were transient and varied from day to day.

Treatment was begun with diethylcarbamazine 900 mg daily in divided doses for 5 days. Two days after initiation of therapy there was marked symptomatic improvement. Towards the end of therapy the eosinophil count began to fall, and 6 weeks later had returned to normal.

Follow-up chest X-rays showed clearing of the pulmonary opacities and 6 weeks after therapy the chest X-ray was normal. When last seen 6 months after treatment the patient was well and asymptomatic. The white cell, eosinophil counts and serum IgE were normal.

Discussion

In this case, 5 out of 6 criteria are fulfilled for the diagnosis of tropical pulmonary eosinophilia. The only criterion not fulfilled was the negative filarial complement fixation test which may have been due to disappearance of filarial antibodies following cure. However this test is not positive in all cases (Danaraj, da Silva and Schacher, 1959). The response to diethylcarbamazine was dramatic and although this drug is a piperazine derivative neither *Ascaris* larvae nor ova were found in sputa or stools and thus the possibility of Loeffler's syndrome is unlikely.

Other conditions such as chronic eosinophilic pneumonia, allergic aspergillosis, the collagenoses, eosinophilic leukaemia and idiopathic hyper-eosinophilia do not show a response to diethylcarbamazine. Toxocariasis, although not excluded seems unlikely in view of the patient's age, the normal liver function tests and the dramatic response to treatment.

As filariasis has not been reported from Medina

(Sebai, Morsey and El-Zawabry, 1974), the source of infection in this case is conjectural. The city of Medina is a major holy centre and receives tens of thousands of Muslim pilgrims annually from overseas. Despite the probability that some of these people have filariasis, the risk of transmission is low because the number of possible vectors is usually small. Animal filaria such as *Dirofilaria immitis* may be implicated as dogs are the major urban animal in Saudi Arabia; but infection rates in dogs are unknown.

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