Delayed Diagnosis

Bancroftian filarial pleural effusion

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Summary: This paper describes a case of filarial pleural effusion, the fifth such to be reported. Microfilariae of *Wuchereria bancrofti* were detected in the pleural fluid on cytological examination. There was a prompt and complete response to treatment with diethylcarbamazine. There were, however, no symptoms and signs of tropical pulmonary eosinophilia nor any peripheral eosinophilia.

Introduction

Chylous pleural effusion as a manifestation of filariasis is well documented. However, serous pleural effusion is not a common feature of bancroftian filariasis. The finding of microfilariae in the pleural fluid is all the more rare;¹ we know of only four other reported cases of filariasis^{2–5} associated with pleural effusion in which microfilariae were demonstrated.

Case report

An 18 year old boy was admitted with the complaints of persistent backache, recurrent episodes of cough with expectoration, dyspnoea on exertion and occasional haemoptysis for the last 5 years. One year back a diagnosis of pleural effusion had been made outside for which he had received anti-tubercular treatment. However, despite the anti-tubercular treatment and repeated thoracentesis over the past year, the pleural effusion recurred.

Examination revealed evidence of left-sided pleural effusion. Both liver and spleen were palpable 2 cm below the costal margin. Investigation revealed a total leucocyte count of $4.5 \times 10^6/l$ with a normal differential. No microfilariae were detected in diurnal or nocturnal peripheral blood smear. Chest X-ray revealed a calcific density at the left apex, a mediastinal shift to right and a left-sided pleural effusion.

The straw-coloured pleural fluid showed a sugar of 4.1 mmol/l and protein of 5.7 g/dl. Aerobic and anaerobic culture did not grow any organism nor were any acid-fast bacilli detected on direct smear

examination. The pleural fluid was processed for cytopathological examination and microscopy revealed numerous microfilarial larvae of *Wuchereria bancrofti* (Figure 1). Pleural biopsies done on two occasions showed proliferation of mesothelial cells only. There was no histological evidence of tuberculosis or microfilariae.

The patient was put on diethylcarbamazine 100 mg thrice daily for 3 weeks. On follow-up one month later the pleural effusion had completely cleared both clinically and radiologically, there was no recurrence of the pleural effusion at 6 months follow-up.

Figure 1 Larva of *Wuchereria bancrofti*: (top) head end; (bottom) tail end, in pleural fluid (Papanicolaou stain, $\times 120$).

Discussion

Microfilariae have been identified in samples submitted for cytological examination such as laryngeal and pharyngeal brushings,⁶ cervical smears,⁷ nipple secretions,⁸ pericardial fluid,^{9,10} urine,¹¹ and aspirated material.¹²⁻¹⁵ However, microfilariae in pleural effusions have been demonstrated only in four cases.²⁻⁵ In one case microfilariae of *Mansonella perstans* were detected⁵ while in the other three cases microfilariae of *Wuchereria bancrofti* were identified.²⁻⁴ Two patients had pulmonary eosinophilosis² and tropical pulmonary eosinophilia,³ respectively. The third case presented with some but not all the symptoms of tropical pulmonary eosinophilia and lacked the characteristic peripheral blood eosinophilia.⁴ Our case, therefore, is the fifth case of filarial pleural effusion in which microfilaria have been demonstrated in pleural fluid.

The commonest cause of pleural effusion in India is tuberculosis and therefore, entertaining a diagnosis of tubercular pleural effusion in the beginning was not amiss particularly since there was evidence of an apical lesion in the chest X-ray. However, the recurrence of the pleural effusion, despite adequate antitubercular treatment should alert the clinician to an alternative diagnosis. Filariasis is endemic in India and, therefore, the co-existence of pleural effusion and filariasis may be coincidental rather than causally related.¹² However, the presence of microfilariae in the pleural fluid and the successful response to treatment with diethylcarbamazine is strong evidence of the filarial aetiology of the pleural effusion. It is therefore stressed that in tropical countries filariasis must be considered as an aetiological agent in pleural effusion.

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