



Fig 2 A macrophage in the pleural fluid contains intracytoplasmic aggregates of *Legionella pneumophila* antigen (Direct immunofluorescent test $\times 400$).

therapy, he was switched to oral erythromycin stearate 500 mg qid because of persistent radiological abnormality. One month later there was full resolution except for residual pleural scarring.

Discussion

Pleural involvement in infection by *Legionella pneumophila* is common. Pleuritic chest pain occurs in approximately one-third of those infected and a pleural rub may be heard.¹⁻⁴ Pleural effusion, usually unilateral, is associated with the pneumonic illness in less than one-third to over one-half of reported cases.⁴⁻⁶ In some cases it has been considered secondary to associated congestive heart failure.⁶ Though effusions may precede the pneumonic infiltrate, most coincide with it.⁴⁻⁵ None has been reported without a pneumonic infiltrate.

Pleural involvement with Legionnaires' disease has not been clinically significant except in patients receiving corticosteroids.⁷⁻⁸ Empyema from *Legionella pneumophila* has not been described, though the organism has been found in pleural fluid.⁹ The few pleural fluid analyses reported showed the effusion to be either an exudate or transudate, to have a variable leucocyte

content, and to have a normal glucose concentration.^{1-4,7,8} Though pulmonary cavitation has occasionally occurred, especially in immunocompromised patients, pleural loculation has not been reported.^{7-8,10}

Our patient had infection with *Legionella pneumophila* documented by demonstration of the organism in pleural fluid and a high convalescent titre of antibodies to the organism. The pleural fluid was an exudate and its glucose concentration was extremely low, even though fluid leucocytosis was minimal. *Legionella pneumophila* must now be considered in the differential diagnosis of both loculated pleural effusions and pleural exudates with low glucose concentrations.

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