Life-threatening *Mycoplasma pneumoniae* infection

RICHARD MCGONIGLE*
M.B., M.R.C.P.

JOHN K. WAGSTAFF
F.R.C.P.

Royal Sussex County Hospital, Brighton, Sussex

Summary

Pneumonia due to *Mycoplasma pneumoniae* is common, but it is rarely life-threatening. A case is reported in a previously healthy adult whose illness was severe enough to require treatment with intermittent positive pressure ventilation (IPPV) for 14 days and which resolved after treatment with corticosteroids.

Case report

A 36-year-old housewife was admitted to hospital with a 7-day history of increasing malaise, breathlessness and cough. On examination she was an extremely anxious and dyspnoeic patient. Her temperature was 39°C, her pulse rate 140/min and her BP 130/170 mmHg. There were crepitations throughout both lungs. Initial investigations showed Hb 13.6 g/dl and WCC $26.4 \times 10^9/l$ with 95% neutrophils. Her chest X-ray showed widespread nodular consolidation, most prominent at the bases. The diagnosis of *Mycoplasma pneumoniae* pneumonia was confirmed by the detection of a high titre of cold agglutinins in the peripheral blood and later by the results of the complement fixation tests (Table 1).

TABLE 1. Serological investigations

	Day after admission	
	2	14
<i>Mycoplasma pneumoniae</i>		
CFT	1:1024	1:2048
Cold agglutinins		
At 4°C	1:8000	>1:10 ⁶
At room temperature	1:256	1:1024
At 37°C	non detected	1:4

The sputum contained numerous plus cells and a few Gram-positive cocci, but no organism was cultured. Her arterial blood gas results were P_{O_2} 6.4 kPa (48 mmHg), P_{CO_2} 4.6 kPa (35.5 mmHg). Treatment was started with ampicillin, cloxacillin and oxytetracycline. Two days after admission her clinical condition had deteriorated. She had become

cyanosed and exhausted. Her arterial blood P_{O_2} was 4.5 kPa (34 mmHg) and P_{CO_2} 3.2 kPa (24 mmHg). She was transferred to the Intensive Care Unit and treatment with IPPV started. Her serum immunoglobulin concentrates were normal except for a raised IgM 320 mg/100 ml (normal 60-250 mg/100 ml) and low C4 level 14 (normal 20-40).

On the fifth day after admission IPPV was temporarily discontinued, but spontaneous ventilation was still inadequate, P_{O_2} 5.6 kPa (42 mmHg) and a tracheostomy was performed. Despite continued ventilation with high inflation pressures up to 40 ml H_2O , the P_{CO_2} remained elevated at 6.6 kPa (50 mmHg). On day 14 treatment with hydrocortisone 200 mg 6-hourly was started. Clinical improvement occurred promptly and by day 16 the inflation pressures had fallen to 10 ml H_2O and the P_{CO_2} to 3.3 kPa (24 mmHg). Forty-eight hours later it was possible to discontinue IPPV. Prednisolone 100 mg daily was substituted for the hydrocortisone and reduced in dosage over the following 4 weeks. The patient's further recovery was uneventful. She was discharged home 7 weeks after admission when the sputum was clear and a full blood count was normal. Four weeks later she was asymptomatic and a chest X-ray still showed some basal shadowing.

Discussion

Mycoplasma pneumoniae infection of such severity is rarely seen in otherwise healthy patients, although Foy *et al.* (1973) described 4 serious cases in patients with immunodeficiency. There was no evidence of immunodeficiency in this patient; the raised IgM and low complement levels were compatible with an acute infection associated with immune complex formation. Secondary bacterial infection was unlikely in view of the persistently negative blood and sputum cultures. She improved eventually when corticosteroid treatment was started. Such a response has been reported previously (Holt, Ryan and Epstein, 1977; Noreiga *et al.*,

*Address for reprints: Dulwich Hospital, London SE22 8PT.

1974), and is probably due to a resolution of the inflammatory alveolar reaction. Noreiga *et al.* postulate that steroids may be useful in containing the immunological response to mycoplasmal antigens by inhibiting the cellular immune mechanisms and thereby preventing tissue damage resulting from this host response. This experience supports previous impressions that corticosteroids are of value in promoting resolution in severe *M. pneumoniae* pneumonia.

References

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