Pleural fluid characteristics in pulmonary brucellosis

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Abstract
Although pulmonary symptoms accompany up to 16% of cases of infection with Brucella melitensis, pleural effusion has rarely been reported. A 12 year old girl had brucellosis with pulmonary disease and a pleural effusion. The pleural fluid was clear and straw coloured with 2700 leucocytes/mm³ (93% lymphocytes), a protein level of 48 g/l, and a glucose concentration of 4.1 mmol/l. Culture of the pleural fluid grew Br. melitensis.

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Pleural effusion (figure). Ultrasonographic examination of the chest demonstrated a large pleural effusion with septations and loculations. Spinal radiographs and a computed tomographic scan of the thorax showed compression and destruction of T12 vertebra and the bone scan showed a similar focus of increased uptake in T12. The Mantoux test was negative. A diagnostic pleural tap revealed clear and straw coloured fluid, with 2700 leucocytes/mm³ (93% lymphocytes), a protein level of 48 g/l, and a glucose concentration of 4.1 mmol/l. No bacteria (including mycobacteria) were identified by special stains. Culture of the pleural fluid grew Br. melitensis. Serum agglutinating antibodies for Br. melitensis were positive with a titre of 1:5120. Blood culture grew Br. melitensis.

Treatment was started with a six week course of oral tetracycline (30 mg/kg/day) and intramuscular streptomycin (25 mg/kg/day). The streptomycin was changed to rifampicin after five days when an audiogram revealed hearing loss in the left ear. Her clinical condition improved rapidly after initiation of treatment and she was discharged two weeks later. The child received two additional courses each of four weeks of antibiotics comprising rifampin and trimethoprim-sulphamethoxazole. The pleural effusion and infiltrate cleared gradually. Six months later chest radiographs were normal, there were only slight changes in the vertebrae, and Br. melitensis serological tests were negative.

Discussion
Brucellosis is a disease with protean manifestations that can occur at any age and can affect various organs. Although inhalation is one of the routes of acquiring brucellosis, pulmonary disease is considered to be uncommon.3,13 Several pulmonary manifestations have been reported including bronchitis, bronchopneumonia, lung abscess, pleural effusion, pulmonary nodules, and hilar lymphadenopathy.3,6-9

In a prospective study of 400 adults from Kuwait1 respiratory symptoms including cough and dyspnoea with a normal chest radiograph were present in 16% of cases. Respiratory complications, however, were reported in only four patients (1%), three with pneumonitis and one with a pleural effusion. In children pulmonary involvement seems to be even more unusual, with only four out of 1300 children with brucellosis reported from Kuwait having pulmonary disease.10 Lubani et al.12 analysed 1500 patients with brucellosis (children and adults) and found nine cases with pulmonary involvement. In their report three patients had a pleural effusion, and in two of them Br. melitensis was isolated from the pleural fluid. However, no details of the type of pleural fluid was given. The growth of Br. melitensis from the pleural space implies that the pleural effusion is due to direct invasion by the bacteria into the pleural space. In addition, the type of effusion in our patient—exudate with predominance of lymphocytes—suggests that Br. melitensis triggered a local pulmonary lymphocytic...
Area of consolidation in the right lower lobe and pleural effusion.

Response to ketamine in status asthmaticus resistant to maximal medical treatment

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Abstract

The case is reported of a 28 year old woman with status asthmaticus unresponsive to three days of maximal medical treatment. Resolution of bronchospasm was achieved with an infusion of the intravenous anaesthetic agent ketamine.

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Ketamine is a unique intravenous anaesthetic agent with sedative, analgesic, and bronchodilator properties. Its propensity to cause distressing emergence phenomena has limited its use. It has been used successfully in patients with acute asthma1-4 but these patients had not received maximal medical treatment as judged by current standards. The treatment of acute asthma is outside the terms of its UK product licence and its role in this setting remains to be defined. This report describes its successful use in a patient in whom conventional medical treatment had failed.

Case report

A 28 year old woman with a history of asthma was admitted unconscious having suffered a respiratory arrest at home. Endotracheal intubation was performed immediately, arterial blood gases following intubation were pH 6.93, PaCO₂ 14.1 kPa, PaO₂ 14.0 kPa, (FiO₂ 1.0). Initial treatment was with intravenous hydrocortisone 200 mg, aminophylline 250 mg, and ventilation by hand with 1% halothane in oxygen. In the intensive care unit treatment was continued with intravenous aminophylline 0.9 mg/kg/hour, hydrocortisone 200 mg every six hours, and nebulised ipratropium bromide 500 µg four hourly. Mechanical ventilation...