Pneumonia as the sole presentation of brucellosis

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INTRODUCTION

Brucellosis remains a world-wide public health problem (1). Although it has disappeared in many developed countries, it is still common in the Mediterranean and Middle Eastern countries (2,3), including Jordan. The disease affects various parts of the body with wide clinical manifestations. Pulmonary involvement in brucellosis is infrequent (4,5), however we report a 4-year-old boy who presented with fever and cough only, which proved to be due to brucellosis. However, to our knowledge there is no description of similar case in the literature.

CASE REPORT

A 4-year-old boy was admitted to hospital due to history of fever and productive cough for 4 days. There was no history of joint pain, loss of weight, backache, fatigue or abdominal symptoms, and no definite history of raw milk ingestion. Physical examination of the child on admission revealed an ill-looking child, with a temperature of 39.5°C rectally, a respiratory rate of 25 min⁻¹, and a heart rate of 110 min⁻¹. Chest examination revealed crackles on auscultation over the right upper zone of the lung. Other physical findings were normal.

Laboratory finding included blood leukocytes of 9600 mm⁻³ with a differential count of 62% neutrophils, 35% lymphocytes and 3% monocytes. Chest radiography showed right upper consolidation (Fig. 1). He was started on intravenous ceftriaxone and azithromycin orally. The child showed no response after 4 days of therapy and continued to have spikes of high fever up to 40.3°C rectally with cough. Repeated physical examination and chest X-ray confirmed the previous findings. The following laboratory investigations were carried out: complete blood count, blood culture, urine culture serum electrolytes level, kidney function, liver function, Mantout test and widal titre. All these tests were within normal limits. Blood culture was done once before antibiotics were started and repeated again later, using an automated Bact/Alert system. Brucella serum agglutination titre, repeated twice, was < 1: 20, using the standard tube-agglutination technique. The antibiotic was changed to intravenous vancomycin and augmentin. The patient continued to have spikes of fever for another week despite the new antibiotics regimen. Chest radiography repeated for a third time showed the same initial findings. Brucella serum agglutination test titre was repeated and showed 1: 320 for Brucella melitensis. The antibiotic was shifted to oral co-trimoxazole and gentamicin intramuscularly. Fever disappeared within 48 h of the new antibiotics and cough improved dramatically. Chest X-ray was normal after 3 weeks of treatment of brucellosis.

DISCUSSION

Although inhalation is a recognized route of acquiring brucellosis (6), pulmonary manifestations remain uncommon (4,5). The following pulmonary manifestations of brucellosis have been reported: bronchitis, bronchopneumonia, pleural effusion, lung abscess, pulmonary nodules and hilar lymphadenopathy (4,9).
In a prospective study of 400 adults by Lulu et al. (5), respiratory symptoms including cough and dyspnoea with normal chest radiography were present in 16% of cases.

Pulmonary complications in the form of pleural effusion and pneumonitis were present in 1% of cases. Pulmonary involvement in children seems more unusual, with only four out of 1300 children with brucellosis reported from Kuwait having pulmonary disease (4,10).

Our patient presented with fever and productive cough only with no other signs or symptoms, which makes the diagnosis of brucellosis a remote possibility initially. The lack of response of the patient to a multiple antibiotics regimen and persistence of high fever with right upper lobe consolidation make unusual infection a possibility. The standard tube-agglutination technique was used in our laboratory to confirm the diagnosis. The serum agglutination titre was 1: 320 which was significant because the initial two tests were negative. This method has been extensively evaluated, yielding the highest degree of reproducibility and accuracy (II). However, very often false-positive agglutination reactions exist due to cross-reactivity with *Francisella tularensis*, *Vibrio cholera* or *Yersinia enterocolitica* (12), but the patient had no other symptoms consistent with the previous diagnosis. Lubani et al. (4) analysed 1500 patients (adults and children) and found four children with pulmonary involvement and only one of them (an 8-year-old) with consolidation. To our knowledge this is the youngest child presenting with pneumonitic consolidation as the only manifestation of brucellosis.

We conclude that brucellosis should be added to the list of causes of pneumonia which is resistant to different antibiotics, even in the absence of other associated symptoms of brucellosis.

REFERENCES