Clinical image

The halo sign of Q fever pneumonia

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A R T I C L E   I N F O

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A previously healthy 29-year-old male in intimate contact with dogs presented with a five-day history of high fever, chills, headache, myalgia and nonproductive cough. He also complained of sharp right-sided chest pain worse on deep inspiration. On physical examination, the patient was febrile, tachypneic and tachycardic. Inspiratory rales were heard over the right lower lung zone. Laboratory data showed a white blood cell (WBC) count of $6.6 \times 10^9$/L with a left shift. Inflammatory markers were mildly elevated with erythrocyte sedimentation rate (ESR) 37 mm/h and C-reactive protein (CRP) 32 mg/L. A computed tomography (CT) scan of the chest revealed a $3 \times 3 \times 3$ cm, well-defined and round mass surrounded by a halo of ground-glass attenuation, namely the halo sign, in the posterior basal segment of the right inferior lobe (Fig. 1). Serologic test was positive for Coxiella burnetii (C. burnetii) by indirect immunofluorescence assay (IFA). Empirical treatment was initiated with azithromycin (0.5 g daily), which was changed to doxycycline (100 mg twice a day) for 14 days. A follow-up CT scan performed four weeks later showed total resolution of the lesions. At six-month follow-up, the patient was asymptomatic with no radiological evidence of a relapse.

Pneumonia is one of the cardinal manifestations of Q fever, which caused by C. burnetii infection. Q fever is probably the most common cause of round pneumonia in adults. The halo sign refers to a zone of ground-glass attenuation surrounding the circumference of a pulmonary nodule or mass on CT images. It has been attributed to hemorrhagic lesions mainly caused by an infectious process. C. burnetii infection can exceptionally manifest with a halo sign, which is caused by the infiltration of inflammatory cells and exudates into the

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lungs. Importantly, the halo sign is a useful diagnostic clue and may be good evidence of Q fever pneumonia.

**Conflicts of interest**

The authors declare no conflicts of interest.

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**References**