Pulmonary Erythema Migrans?

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Key Words

Ground-glass opacity · Reversed halo sign · Cryptogenic organizing pneumonia

A 27-year-old, previously healthy woman complained of gradually worsening fatigability, sweats and a cough over a period of 4 weeks. A chest X-ray revealed multiple, bilateral ring-shaped opacities of variable sizes (5–12 cm) and areas of lung consolidation (fig. 1a). A chest CT (fig. 1b–d) revealed spherical lesions with solid consolidation or different stages of central clearance of the infiltration (a reversed halo sign). Cavitations were not present. The bronchoalveolar-lavage fluid differential cell count was: 25% alveolar macrophages, 54% lymphocytes, 16% polymorphonuclear granulocytes and 5% eosinophils. Transbronchial biopsies revealed intra-alveolar buds of granulation tissue. The diagnosis of cryptogenic organizing pneumonia was considered and therapy with prednisolone 30 mg/day was initiated. Repeat CT after 10 weeks of steroid therapy showed a near-complete resolution of these findings.

The ‘reversed halo sign’, ‘atoll sign’ or ‘fairy ring sign’ is defined as central ground-glass opacity surrounded by a ring or crescent-shaped area of consolidation of at least 2 mm thickness [1]. It is a relatively specific sign for cryptogenic organizing pneumonia [1, 2], but the differential diagnosis list should also include: bacterial pneumonia, lymphomatoid granulomatosis, Wegener’s granulomatosis, tuberculosis, mucormycosis, paracoccidioidomycosis, sarcoidosis, cancer and pulmonary infarction. Although the pathogenesis of the ‘reversed halo sign’ is not yet understood, a recent tick-bite (Ixodes ricinus) is not a recognized risk factor. Identification of this imaging feature in correlation with clinical data, medical history and laboratory investigation results serves as a useful clue for establishing an accurate diagnosis.

References

Fig. 1  

a A chest X-ray shows multiple, bilateral, ring-shaped opacities of varying sizes (5–12 cm) and areas of lung consolidation. 

b–d Chest CT scans show spherical lesions with solid consolidation or different stages of central clearance of the infiltration (a reversed halo sign).