Halo Sign and Eosinophilia: What Is Your Diagnosis?

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Abstract

Blood eosinophilia associated with transient and migrating nodules with a halo sign on chest computed tomography scan should suggest larva migrans related to toxocariasis or *ascaris suum*.

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A 44-year-old never-smoker was evaluated for recent isolated dry cough and urticaria. Blood cell analysis revealed an eosinophil count of 2,080/μl. Antinuclear antibodies and antineutrophil cytoplasmic antibodies were negative. Chest radiograph was normal. High-resolution computed tomography (CT) showed 8 ground-glass opacities with ill-defined margins and 4 nodules with halos measuring from 12 to 25 mm with a distribution predominantly in the lower and peripheral part of both lungs

Fig. 1. **a, b** Multiple nodular lesions with halo sign and ground-glass opacity nodules. **c, d** Magnification of ground-glass opacities with halo sign.

(Fig. 1). A diagnosis of larva migrans was suspected. *Toxocara* antibodies were strongly positive. We started treatment with ivermectin. Our patient's clinical symptoms improved within 2 weeks. One month later, follow-up CT showed a migration of the nodules. The eosinophil count normalized within 4 months.

Humans are an accidental host of *Toxocara*, which normally infects dogs (*Toxocara canis*) and cats (*Toxocara cati*). In western countries, 2–5% of all adults in urban areas and 14–37% of all adults in rural areas are seropositive for *Toxocara*. “Larva migrans” is associated with acute eosinophilic inflammation and allergic manifestations. With regard to the lung, patients may suffer from

cough, dyspnea, asthma, or acute bronchiolitis, and infrequently infiltrative pneumonitis or acute respiratory distress.

Beyond the serological diagnosis, the radiological findings are crucial to strengthen the diagnosis. Multiple nodules, consolidations, pleural effusions, and migrating ground-glass opacities have been described on chest CT. The peculiar transient nodules with a halo sign may migrate and have been specifically described in toxocariasis [1] and *ascaris suum* [2]. They are usually multiple, of variable size, and disseminated in the peripheral areas of the lungs [3]. Their presence seems to correlate with high eosinophilic blood levels [4].

References

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