Toxocariasis as a cause of multiple pulmonary nodules in a paediatric patient

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DESCRIPTION

An asymptomatic 8-year-old boy with a history of myasthenia gravis presented for MRI thorax to assess for a thymoma. The child had a chronic history of pica that involved the consumption of stones and mud.

Incidental MRI findings included multiple, circumscribed soft tissue nodules present in both lungs (figure 1) and a small area of abnormal signal intensity in the right liver lobe.

Subsequent contrast-enhanced CT revealed multiple ill-defined nodules throughout both lungs (figure 2). All nodules demonstrated an ill-defined halo. No cavitation, hilar or mediastinal lymphadenopathy was identified. The liver demonstrated multiple, poorly-enhancing lesions. Routine haematology and biochemistry revealed iron-deficiency anaemia and eosinophilia ($4.04 \times 10^9/L$).

The imaging findings, eosinophilia and subsequent positive serological testing for *Toxocara*, interpreted in conjunction with the history of pica, were considered strongly suspicious for toxocariasis. Following treatment with Albendazole, resolution of the hepatic lesions was confirmed by MRI after 4 weeks and the majority of lung nodules had resolved following 3 months.

Pulmonary nodules in a paediatric patient should raise the possibility of toxocariasis especially if suitable risk factors are identified such as pica or the

Figure 2 Contrast-enhanced axial CT image of the chest. There is a well-defined nodule in the lower lobe of the left lung demonstrating an ill-defined halo.

consumption of raw meat. CT findings include multiple pulmonary nodules with or without a halo of ground glass opacity and focal ground glass opacity.^{1 2} In patients subjected to follow-up imaging, nodules may demonstrate lesion migration due to the host response to wandering larvae.² Multiple, poorly enhancing hepatic lesions are also typical reflecting the characteristics related to granuloma and abscess formation.³

Figure 1 Axial T2-weighted MRI of the thorax. There is a 1.6 cm rounded nodule in the posterior aspect of the right lower lung lobe and a smaller, less well-defined 0.8 cm nodule in the posterior left lower lobe. Additional nodules were present throughout both lungs.

Learning points

- ▶ Humans are accidental hosts of *Toxocara* spp, zoonotic nematodes of the dog, cat and fox.
- ▶ Infection is usually asymptomatic, however, larval migration through host tissues induces eosinophilic inflammation and may lead to a range of imaging findings depending on the organ or tissue affected.
- ▶ The imaging findings in pulmonary visceral larva migrans are non-specific and include multiple pulmonary nodules with or without a halo of ground glass opacity and focal ground glass opacity on contrast-enhanced CT.
- ▶ The incidental finding of multiple pulmonary nodules in a paediatric patient should raise the possibility of toxocariasis, especially if eosinophilia and suitable risk factors are identified such as pica or the consumption of raw meat.

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