



The reversed halo sign and mucormycosis

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A 62-year-old man with a history of uncomplicated kidney transplantation and diabetes mellitus presented 2 months after transplantation with 1 week of cough, right-sided chest pain, and shortness of breath. He denied sputum production, haemoptysis, or fevers. Immunosuppression consisted of oral tacrolimus 8 mg twice daily and oral mycophenolate mofetil 500 mg twice daily.

A CT scan of the chest revealed a 10-cm thick-walled right-lung lesion containing areas of cavitation and ground glass opacity, consistent with the reversed halo sign (figure). Transbronchial biopsy was done, and histology showed necrotic lung tissue containing broad aseptate fungal elements suggestive of mucormycosis. Immunohistochemical stains confirmed the presence of mucormycetes. The patient was treated with intravenous liposomal amphotericin B, 5 mg/kg for 7 days, and then oral isavuconazonium sulfate, 372 mg daily for more than 2 years, with clinical and radiographic improvement. His cough, chest pain, and shortness of breath resolved after 1 month of antifungal therapy, and a repeat CT scan of the chest after 2 years of treatment showed a residual 2·4 cm opacity containing small areas of cavitation at the site of the previous lung lesion, which was thought to be scarring and bronchiectasis.

The reversed halo sign is a ground-glass pulmonary opacity surrounded by a ring of denser consolidation seen on CT. This finding has been associated with pulmonary mucormycosis in neutropenic patients with cancer; however, it has also been described in association with

several other conditions, including invasive pulmonary aspergillosis, tuberculosis, paracoccidioidomycosis, organising pneumonia, sarcoidosis, and malignancy. Given the broad range of diagnoses associated with the reversed halo sign, a biopsy might be necessary to establish the underlying cause, especially in immunocompromised patients.

Contributors

TS planned, wrote, and revised the manuscript. MR planned and revised the manuscript.

Declaration of interests

We declare no competing interests.

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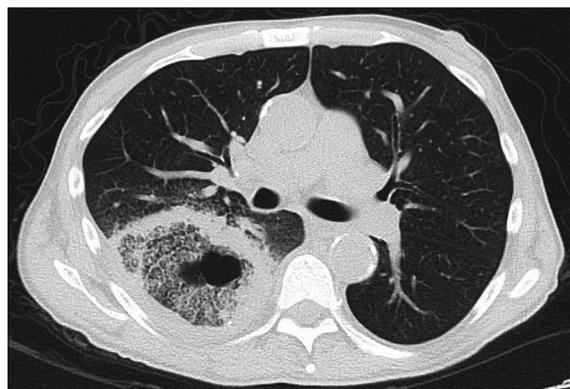


Figure: CT of the chest without contrast, axial view