



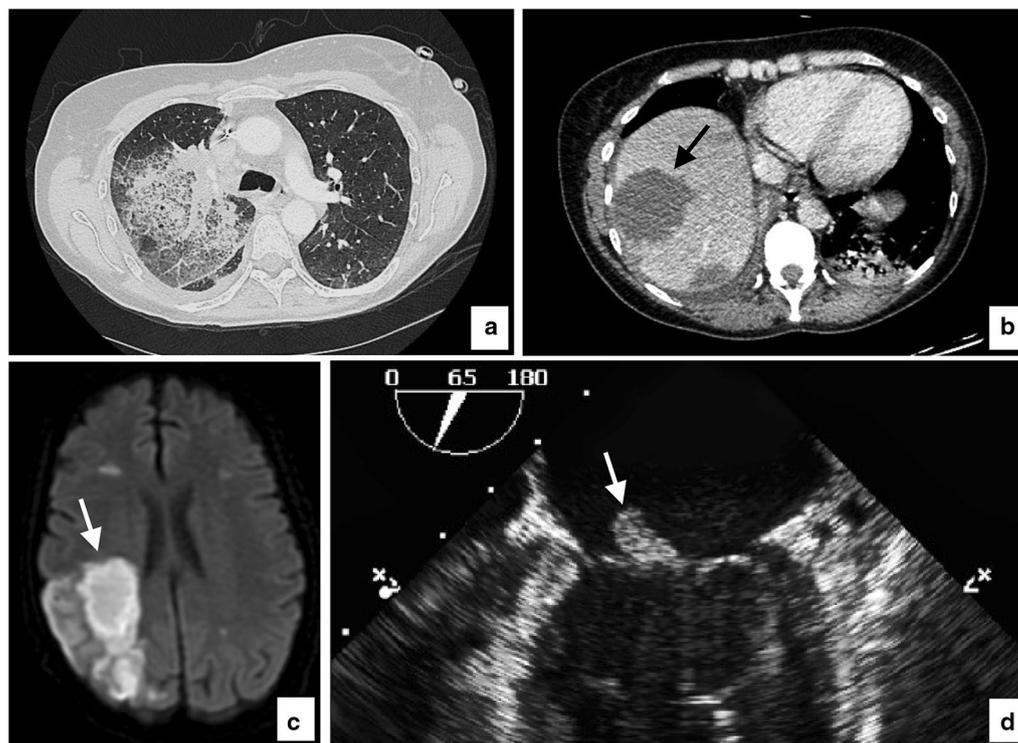
# Disseminated mucormycosis

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During the treatment of an acute myeloid leukemia, a 49-year-old woman developed a fever and was admitted to the ICU because of septic shock and respiratory failure. Broad spectrum antibiotics were started and computed tomography showed pulmonary ground-glass opacity in

the right upper lobe (Fig. 1a), multiple hypodense hepatic nodules (Fig. 1b), and hypodense lesions of the spleen and the right kidney. A first transesophageal echocardiography (TEE) did not find endocarditis. High-dose liposomal amphotericin B was added, and the larger liver

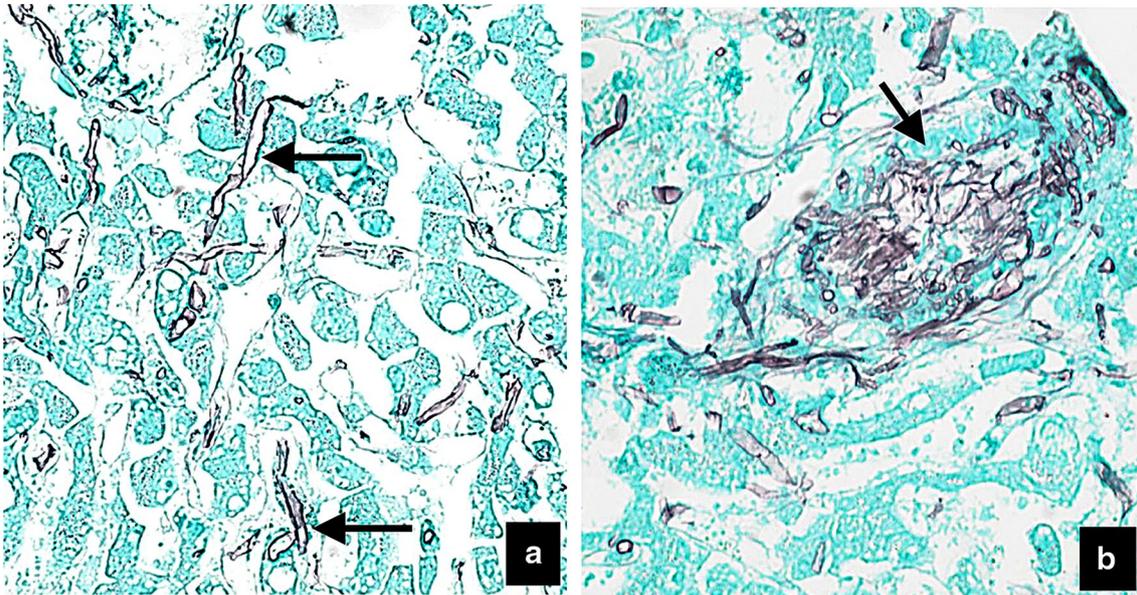


**Fig. 1** Imaging findings. **a** Chest CT scan showing ground-glass opacity with crazy paving pattern in the right upper lobe. **b** CT scan showing multiple hypodense nodules, the larger in the hepatic dome (black arrow). **c** Cerebral MRI (axial, DWI) showing acute ischemia in the right parieto-occipital area (white arrow). **d** Transesophageal echocardiography showing vegetation (white arrow) in the mitral valve

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**Fig. 2** Histological examinations (biopsy of the hepatic nodule). **a** Presence of fungal spores and filaments of various size with right-angled connexion (black arrows) within hepatic necrosis (Grocott staining,  $\times 200$ ). **b** Presence of fungal spores and filaments within vascular lumen (black arrow) compatible with angio-invasive fungal infection and/or fungal embol (Grocott staining,  $\times 200$ )

nodule was biopsied. Microscopic histological examination showed many fungal spores and filaments with right-angled connexion, suggesting *Mucorales*, within hepatic necrosis (Fig. 2a) and vascular lumen (Fig. 2b). Serum mucorales qPCR was strongly positive for *Rhizomucor* and intravenous isavuconazole was added. A cerebral MRI showed multiple ischemic lesions (Fig. 1c) suggesting fungal invasion of brain arteries and/or fungal emboli. Further TEE highlighted the occurrence of vegetation in the mitral valve (Fig. 1d) compatible with mucormycosis endocarditis. Despite aggressive therapy, her condition evolved towards death.

Disseminated mucormycosis is essentially reported among patients with haematological malignancies and is associated to a poor prognosis. Associated native valve endocarditis is uncommon with very few cases described in the literature.

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#### Compliance with ethical standards

#### Conflicts of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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