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LETTER TO THE EDITOR

An uncommon cause of acute hypoxaemic respiratory failure during haematopoietic stem cell transplantation

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Dear Editor,

A 66-year-old man was admitted to the haematology department for the treatment of myelodysplasia. He received thiotepa, busulfan and fludarabine myeloablative chemotherapy followed by haploidentical haematopoietic stem cell (HSC) transplantation.

At day 18 of stem cell injection, the patient was transferred to the intensive care unit with acute hypoxaemic respiratory failure requiring invasive mechanical ventilation. Computed tomography scan showed interlobular septal thickening, focal alveolar consolidation, and diffuse ground-glass opacities (Fig. 1a). Microscopy of bronchoalveolar lavage (BAL) visualized large yeasts and culture was positive for *C. neoformans* (Fig. 1b). Cryptococcus antigen tests were positive from serum and respiratory samples. No other pathogens were identified. Antifungal treatment by liposomal amphotericin B was initiated. Additional treatment with ruxolitinib and polyvalent immunoglobulin was initiated due to haemophagocytic lymphohistiocytosis syndrome with multiple organ dysfunction syndrome. Unfortunately, despite improvement of acute respiratory distress syndrome, the patient died in a context of mesenteric ischaemia due to high doses of norepinephrine.

Fungal infection is a common and serious complication of HSC transplantation. Overall incidence is between 3 and 4%. The most frequent fungal infections were invasive aspergillosis (40–60%) and candidiasis (20–30%) [1–3]. *C. neoformans*, an opportunistic invasive fungus, is frequently associated with pneumonia and meningitis in immunocompromised patients [4]. It is usually isolated in patients with acquired immune deficiency syndrome, but is rarely reported in the context of HSC transplantation [2]. Because acute hypoxaemic respiratory failure during HSC transplantation can be caused by rare infectious agents, it is extremely important to perform invasive diagnostics like bronchoscopy and BAL in those patients. The microbiology laboratory then should carry out the appropriate tests to identify the microorganism.

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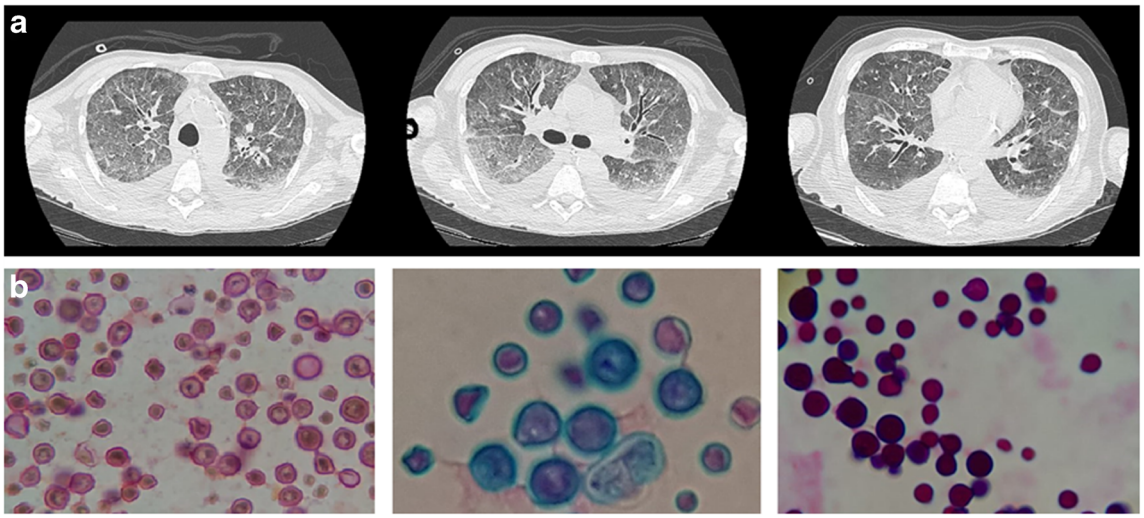

Fig. 1 **a** Computed tomography scan showing interlobular septal thickening, focal alveolar consolidation and diffuse ground-glass opacities, mediastinal lymphadenopathy, and bilateral pleural effusion. **b** Bronchoalveolar lavage showing *Cryptococcus neoformans* (from left to right: Mucicarmine magnification × 100; Alcian Blue magnification × 100; periodic-acid Schiff magnification × 100)

Author contributions All authors drafted the article and approved the final version of the manuscript.

Compliance with ethical standards

Conflict of interest All authors declare that they have no conflict of interest.

Informed consent Written informed consent was obtained from the next of kin for the publication of this case report.

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