

Background

Mucormycosis is one of the rare but most devastating fungal infections in immunosuppressed patients. Central nervous system (CNS) involvement is rare but has a high mortality rate.

Purpose

We aimed to present a case of central nervous system-involved mucormycosis with a fatal course despite long-term treatment in a patient who underwent autologous stem cell transplantation (ASCT) for multiple myeloma, followed by cadaveric renal transplantation.

Case presentation

A 48-year-old male patient diagnosed with MM Stage 3B in 2008 underwent ASCT, was on dialysis three times a week, and was receiving maintenance lenalidomide when he underwent RT in 2019. He is currently on dual immunosuppressive therapy. In January 2021, the patient presenting with vomiting and headache complaints was found to have 25×20 mm hypodense lesions in both cerebral hemispheres on brain CT (Figure 1) and peripheral ring-like contrast enhancement in the nodules on contrast-enhanced brain MRI (Figure 2). A lesion consistent with fungal infection was detected in the right maxillary sinus on paranasal CT (Figure 3) and in the lower lobe of the right lung on chest CT (Figure 4). Empirical treatment with Liposomal Amphotericin B was initiated in the patient deemed inoperable. Significant regression was observed in the lesions during the first month after treatment. Two different fungal hyphae, Mucormycosis and Candida, were observed in the biopsy obtained by applying FESC to the right maxillary sinus. Significant regression was observed in the imaging of a patient who received liposomal amphotericin B for 5 months (Figure 5). He was discharged after receiving posaconazole treatment. One month later, the patient, who had been admitted to intensive care with complaints of loss of consciousness and swelling in the right arm, died.

Discussion

This article presents a case of brain-involving mucormycosis infection in a patient treated with ASCT and RT. Immune reconstruction after ASCT can take many years; also, the ongoing immunosuppression after RT has significantly increased the risk of invasive fungal infection in this patient.

The initial interpretation of the lesions as metastases delayed the diagnostic process. Pathological evaluation revealed co-infection, and the clinical and radiological pattern suggested mucormycosis as the primary cause.

Conclusion

The presence of new neurological symptoms in patients undergoing intensive immunosuppression should also raise suspicion of invasive fungal infections. Delayed diagnosis increases mortality. In cases where tissue sampling is not possible, initiating empirical antifungal treatment is of utmost importance in terms of clinical course.



Figure 1: Cranial CT

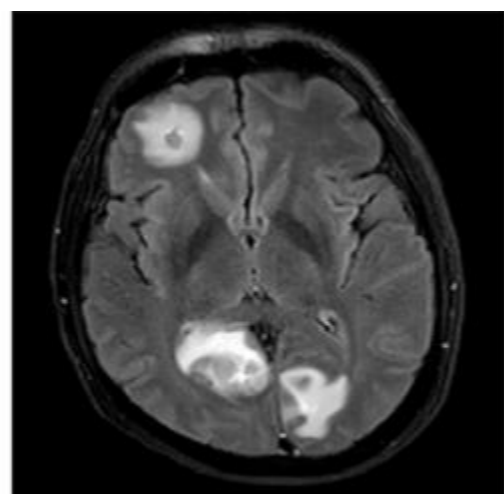


Figure 2: Cranial MRI

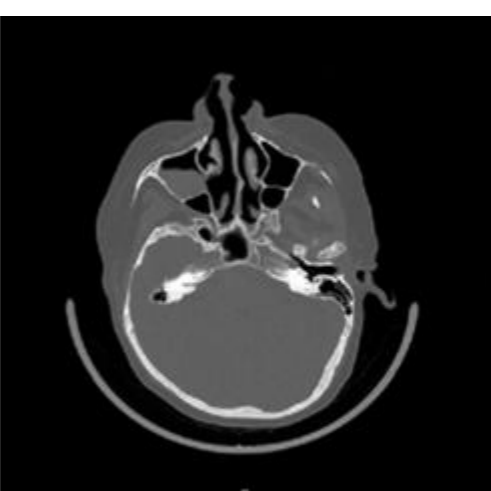


Figure 3: Paranasal CT

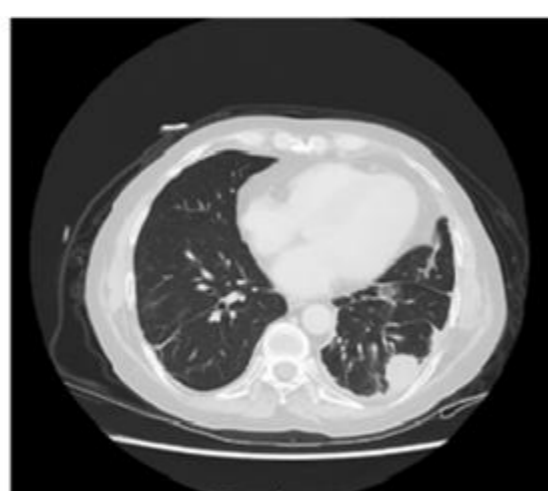


Figure 4: Torax CT

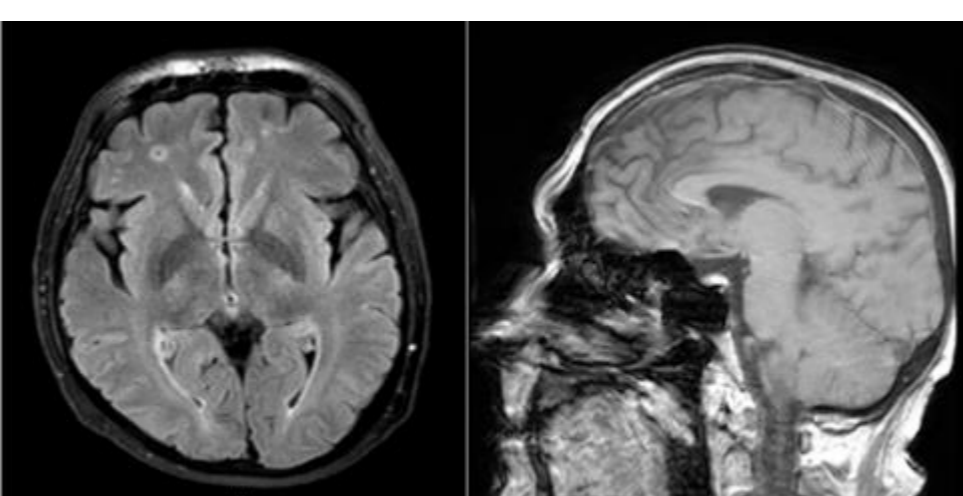


Figure 5: Cranial MRI