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# Cerebral Phaeohyphomycosis : A Rare Case report from SVIMS

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## BACKGROUND AND IMPORTANCE

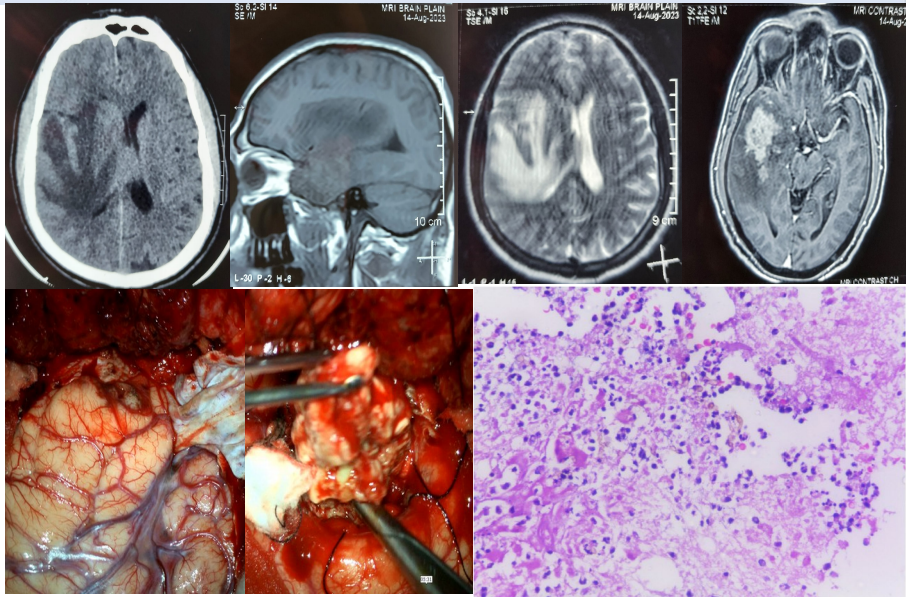
Cerebral phaeohyphomycosis is rare, but many times fatal clinical entity diagnosed in patients with deep-seated cerebral infections **secondary to dematiaceous fungi**.Even though the severe immunocompromised status is the most important risk factor for life threatening fungal infections, they are **increasingly recognized in the immunocompetent as well**. These fungi are common soil inhabitant, true pathogens that are known for their neurotropism. CNS seeding may occur through **hematogenous route**, probably initiated by **respiratory colonization** consequent to inhalation or through inoculation in the skin of extremities following a **slight or minor trauma**. It is associated with **poor prognosis without appropriate treatment**.

## CASE PRESENTATION

A 48-year-old immunocompetent male with no comorbidities presented to SVIMS EMD with history of headache since 10 days mainly in the frontal region and 1 episode of vomiting 4 days ago. There was no history of trauma or sinus infection. On examination, patient conscious, well-oriented in time, place, and person, and with stable vitals. No signs of cranial nerve palsies and other deficits present. MRI brain(P+C) done outside and reported as possibility of right temporoparietal high grade glioma with midline shift. Our differential diagnosis is high grade glioma/tuberculoma. Patient underwent right temporo parietal craniotomy and gross total excision of the lesion under neuronavigation. Intraoperatively the lesion is whitish and moderately vascular with minimal pus and the lesion is removed in piecemeal fashion. HPE shows fungal suppurative granulomatous inflammation with morphology favouring pheohyphomycosis

## DISCUSSION

The species known to have a high neurotropic potential include Cladophialophora bantiana, Ramichloridium mackenziei, Ochroconis gallopavum, and Exophiala dermatitidis, out of which, Cladophialophora bantiana accounts for majority of cases. Most sensitive imaging technique is contrast enhanced MRI. On T1-weighted MR imaging, fungal abscesses show a central hypointense area with an iso to the mildly hyperintense peripheral rim. Corresponding T2-weighted imaging demonstrates increased signal intensity in the centre with the hypointense rim. Intracavitary projections protruding from the fungal abscess wall into the abscess cavity core were noted in many cases,which demonstrated the presence of fungal elements along with iron and other paramagnetic substances on the inner surface of the abscess wall. The postcontrast study showed peripheral enhancement. On MR spectroscopy, fungal abscesses may contain lipids, lactate, alanine, acetate, succinate, and choline. However, a distinctive feature is the disaccharide trehalose peak (3.6 ppm) in the abscess wall. Treatment of most of the cases of cerebral phaeohyphomycosis has been unsatisfactory. It must be individualized with surgical resection and optimized antifungal therapy. Since azoles are very effective against dematiaceous fungi and can be prescribed safely for a longer period, they are the commonly used antifungal agent. Amphotericin B is also used in the treatment by many, but itraconazole is even known to cure the relapses after amphotericin B therapy.



## CONCLUSION

Fungal CNS infections present diagnostic challenges. Neuroimaging of fungal CNS infections are often nonspecific. However, recognition of certain imaging patterns on CT and MRI are of vital importance to help narrow down the differential diagnosis and initiate prompt treatment. Cerebral phaeohyphomycosis should be considered while analysing the specimens from ring enhancing CNS lesions in immunocompetent patients. Specimens should be dealt with biosafety level 2 because of the known pathogenesis of these organisms for immunocompetent individuals. Surgical resection and antifungal treatment with azoles should be considered in all patients with cerebral phaeohyphomycosis