

# Cladosporium Trichoides causing multiple cerebral abscess: A case report

V Velho, P Ghodgaonkar, D Palande

## Citation

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## Abstract

Brain abscesses caused by *cladosporium trichoides* is extremely rare and have a high mortality, even after aggressive treatment. To date only 21 cases have been reported in literature. We report a case of 40 year old male with multiple brain abscesses caused by this fungus. The diagnosis was made by culture studies after the surgical excision. Earlier, the patient had undergone incomplete excision which resulted in recurrence of the condition. Subsequently complete excision was done and antifungal therapy was given for 3 months. Presently the patient is doing well and is on regular follow up.

## INTRODUCTION

CNS infections by dematiaceous fungi (i.e. fungi with dark colored hyphae) are rare and produce fatal condition. Cerebral infections caused by *Cladosporium Trichoides* results in a clinical syndrome termed as “cladosporiosis”. This infection can result in formation of single or multiple brain abscesses. The high mortality is due to their deep location and inability to excise completely. Of the 21 cases reported in literature, very few patients with cerebral involvement have survived.

## CASE REPORT

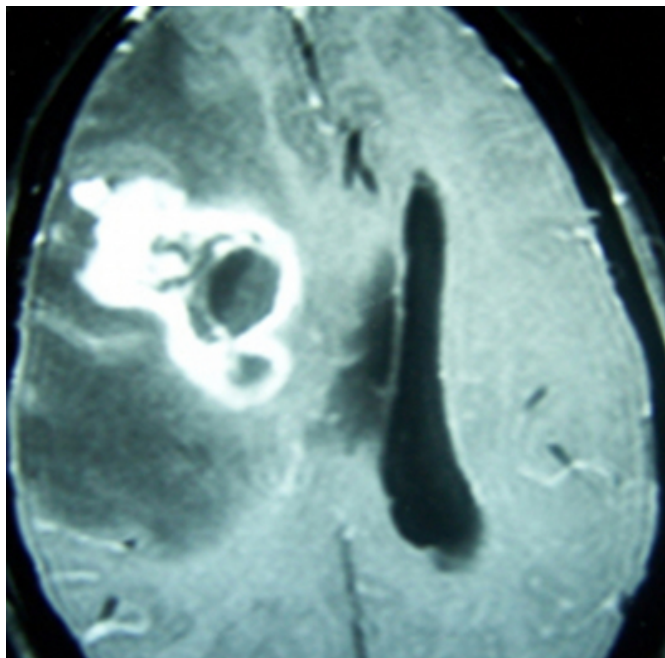
A forty year old right handed male presented with headache, vomiting and weakness in the left side of the body of four days duration. He did not have any past history of symptoms suggestive of an immunocompromised status. On examination he was alert, oriented and afebrile. The fundus examination revealed bilateral papilloedema. All cranial nerves were intact. Motor system examination revealed left hemiparesis (grade III MRC power). There was no sensory deficit or any evidence of meningitis. A contrast CT scan and MRI showed multiple conglomerate cystic ring enhancing lesions in the right fronto-parietal region with surrounding perilesional edema and mass effect. The E.S.R was 52 mm/ 1<sup>st</sup> hr, and the HIV serology was negative. Based on the radiological findings, a provisional diagnosis of tuberculous abscess was made and the patient was started on a four drug antituberculous treatment, injection mannitol and injection dexamethasone. Forty eight hours after admission, the patient neurologically deteriorated and hence

had to be taken up for an emergency craniotomy and excision. Intraoperatively, there were multiple well circumscribed thick walled abscesses, with their wall extending in different directions (fingerlike projections), which could be excised. There was significant brain edema. One part of the abscess was extending deep into the region of basal ganglia and was difficult to excise, and thus had to be left unexcised. As there was significant brain edema, the bone flap was removed and a duraplasty was done. The frozen section taken initially was suggestive of an inflammatory lesion, suggestive of a likely diagnosis of Tubercular abscess. The patient improved neurologically but the left hemiparesis persisted. A repeat CT scan done on the 5<sup>th</sup> post operative day showed a residual lesion in the right basal ganglia with surrounding brain edema. The gram staining with KOH revealed brown colored hyphae suggestive of dematiaceous fungi. Fungal culture on SDA yielded olive green colonies with a velvety surface. There was a dark brown to black pigment on the reverse surface of the colony. Slide culture revealed septate hyphae with sparsely branched long chain of elliptical conidia. These features were characteristic of *cladophialophora trichoides*. The histopathological report also revealed a granulomatous reaction with pigmented fungus. The CSF, sputum, pharyngeal, nasal swab and urine examination did not show any evidence of the primary site of infection. HIV western blot test were negative and CD4/CD8 counts and ratio were within normal limits ruling out an immunocompromised status. The patient was advised to undergo surgery for the residual abscess, but refused and chose to follow up. He was

started on IV and oral antifungal therapy (Fluconazole) and discharged on the 10<sup>th</sup> post operatively with advice to follow up regularly. A follow up scan was done after 4 months, revealed that the residual abscess had grown larger in size producing mass effect, although the patient was asymptomatic. This time the patient agreed to undergo surgery and the abscesses were excised completely under cover of antifungal therapy. The patient did well postoperatively and a repeat CT scan showed complete excision. The patient still follows up regularly and the power in the left upper and lower extremities has improved to grade IV MRC with ability to ambulate on his own.

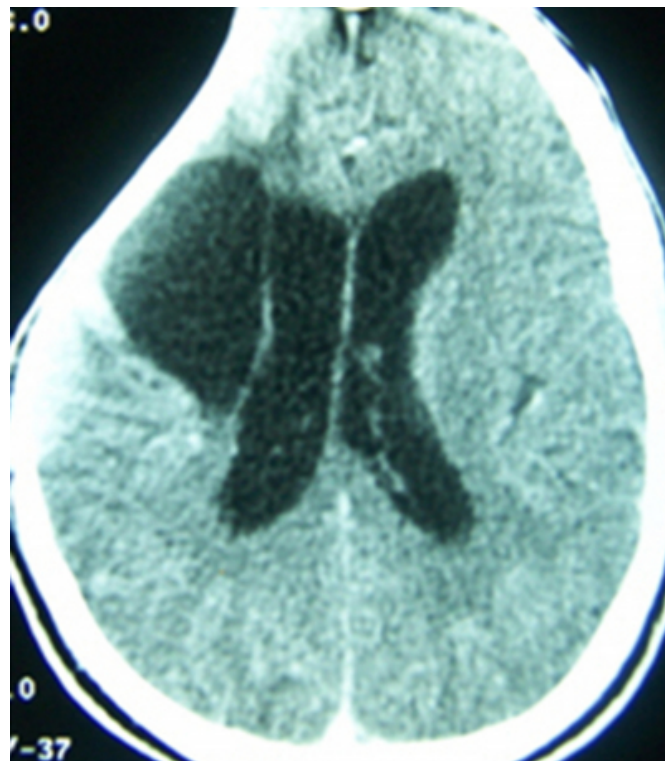
**Figure 1**

Figure 1: Preoperative T1W post contrast axial MRI image showing the fungal Abscess.



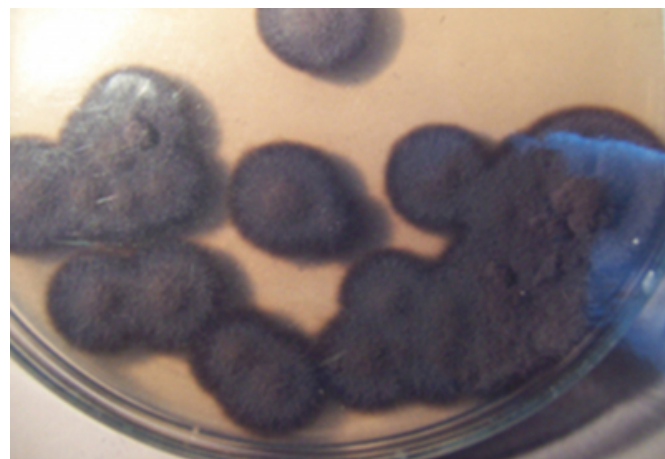
**Figure 2**

Figure 2: Post operative CT scan brain showing complete excision.



**Figure 3**

Figure 3 : Shows the colonies of Cladosporium species.



## DISCUSSION

*Cladosporium trichoides* (synonyms *cladosporium perumbanitianum* or *xylohyphabantiana*)<sub>3</sub> is a rare cause of brain abscess. Biford et al in 1952 reported a case of brain abscess caused by unusual fungus.<sub>4</sub> Emmons shoed that this fungus belonged to the genus *cladosprium* and labeled it as *cladosprium trichoides*.<sub>4</sub> *C.trichoides* is classified under *pheohyphomycosis*, which comprise a heterogeneous group

of fungal disease characterized by dermaticeous (darkly pigmented) hyphae forms in tissue involving the skin, subcutaneous and deep tissue and CNS.<sup>5</sup> This fungus was shown to have significant affinity for nervous tissue in man and animal.<sup>2</sup> It can occur in non immunocompromised individuals also.<sup>6</sup> CNS disease commonly presents with headache and a focal neurological deficit, frequently a hemiparesis.<sup>5,6</sup> Our patient was non immunocompromised and presented with similar symptoms. CNS lesions are best managed by complete excision combined with antifungal therapy but the prognosis is guarded.<sup>5</sup> In our patient, symptoms subsided only after complete excision, which at times is difficult due to the deep location of the abscesses and their finger like projections into the surrounding tissue. Complete excision should be the goal to achieve permanent cure or else recurrence is common resulting in mortality.<sup>5</sup> The use of antifungal therapy is essential, but there are controversies in various studies as to the choice of antifungal drug.

## **CORRESPONDENCE TO**

Pranav Ghodgaonkar Assistant Professor Dept of Neurosurgery Grant Medical college and Sir J J group of hospitals Byculla Mumbai 400008 India Phone: 91 22 23735555 Extn 2264 91 9819757327 E Mail: pranav.sg@gmail.com

## **References**

1. Middleton F.G, Jurgenson PF, Utz UP, Shadomy S, Shadomy J. Brain abscess caused by *Cladosporium trichoides*. *Ann Int Med* 1976; 136: 444-8.
2. Brown J W, Na dell J, Sanders C V, Sardenga L; Brain abscess caused by *Cladosporium trichoides* (Bantichnum) : a case with paranasal sinus involvement. *South Med J* 1976; 69: 1519-22.
3. Banerjee U, Mohapatra A.K., Sarkar C, Chaudhary r. *Cladosporiosis* (cerebral phaeohypomycosis ) of brain - a case report. *Mycopathological* 1989 Mar; 105 (3):163-6.
4. Biford C H, Thompson RK, Gorham H E et al. Mycotic brain abscess. *Am J Cli Patho* 1952; 22: 535-42.
5. Steinbach W.J, Perfect J R. Newer antifungal therapy for emerging fungal pathogenic. *Int J Infect Dis* 2003; 7: 5-20.
6. Dixon DM, Walsh TJ, Merz WG, et al. Infections due to *Xylohypha bantiana* (*Cladosporium trichoides*): *Rev Infect Dis* 1989; 11: 515-525.

**Author Information**

**Vernon Velho, MS, M Ch**

Associate Professor, Department of Neurosurgery, Grant medical college and Sir J J group of hospitals Byculla

**Pranav Ghodgaonkar, MS, MCh**

Assistant Professor, Department of Neurosurgery, Grant medical college and Sir J J group of hospitals Byculla

**Deepak Palande, MCh**

Professor, Department of Neurosurgery, Grant medical college and Sir J J group of hospitals Byculla