TITLE: Chronic meningitis and hydrocephalus due to Sporothrix brasiliensis in an immunocompetent adult

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ABSTRACT:

The specie *Sporothrix brasiliensis* is more virulent and appears to contribute more atypical and severe cases than other related species. It has recently been increasingly reported in AIDS patients as part of a cat-associated epidemic of sporotrichosis in Rio de Janeiro State, Brazil. Sporotrichosis has therefore been suggested as a differential diagnosis of chronic meningitis in immunosuppressed patients living in endemic or hyperendemic sporotrichosis areas. The clinical outcomes of chronic meningitis due to *Sporothrix sp*. in immunosuppressed patients are poor, with an overall 50% mortality. We present a case of hydrocephalus due to unsuspected chronic meningoencephalitis caused by *Sporothrix brasiliensis* in a non-immunocompromised adult. The patient was a previously healthy 40 year-old male with progressive weight loss and lethargy dating from October 2016. In April 2017 a cranial computerized tomography (CT) showed hydrocephalus and signs suggestive of mild meningeal enhancement in some areas (posterior fossa). The patient received a provisional diagnosis of idiopathic hydrocephalus and a ventriculo-peritoneal shunt (VPS) was performed. After four months the patient returned to the hospital because of VPS obstruction. At this time, microbiological examination was performed and direct mycological exame (DME) of cerebrospinal fluid (CSF) showed yeast forms and culture revealed *Sporothrix sp.*, molecular identification revealed the specie *S. brasiliensis*. Qualitative immunoelectropheresis test for detecting anti-Sporothrix sp. antibodies was also carried out and was positive in CSF and serum. Although this test presents a high specificity, this still has low sensitivity (≤40%) and needs improvement. Furthermore, serological test is restricted to a few research laboratories. This case highlights that both current epidemic by *S. brasiliensis* is causing atypical and more severe cases and that the diagnosis is still challenge due the difficulty in obtaining positive fungal cultures from CSF. Over all, we conclude that sporotrichosis should be in mind in cases of chronic meningitis and serological tests should urgently be improved and made widely available in order to enable earlier diagnosis of this disease.

Keywords: *Sporothrix brasiliensis*, sporotrichosis, chronic meningitis, hydrocephalus

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