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“A Case of Cryptococcal Meningoencephalitis in an Immunocompetent Patient with Chiari I Malformation”

Over 90% of cases of cryptococcal meningoencephalitis present in immunocompromised patients, with the majority of those being in patients with AIDS. However, this infection can also occur in other immunocompromised states, such as steroid use, malignancy, rheumatologic diseases, and use of immunosuppressive medications. Delay in diagnosis can often lead to rapid neurological deterioration and mortality.

We present a case of a young, otherwise immunocompetent patient, with history of Chiari I malformation and recent COVID-19 infection, found to have cryptococcal meningitis. The patient presented with syncope following two weeks of headaches, generalized body aches and weakness after COVID-19 diagnosis, and was found to have an isolated CN VI palsy. Head imaging revealed new right caudate infarcts, and a cerebellar tonsillar descent compatible with history of Chiari I malformation. Initial lumbar puncture was deferred due to congenital brain herniation. Over the next few days, patient continued to show increasing neurological deficits such as truncal ataxia and increased mood instability. The patient was transferred to the Intensive Care Unit, and LP was obtained under special neuro-critical care direction. Due to increased opening pressures and yeast on gram stain, cryptococcus was suspected and later confirmed. Although anti-fungal therapy was initiated, the patient continued to deteriorate, leading to cardiac arrest, intubation, and placement of lumbar drain. He unfortunately did not demonstrate neurologic recovery following arrest and progressed to brain death.

While cryptococcal meningoencephalitis is overwhelmingly a disease of immunocompromised patients, it can occur in immunocompetent hosts, and delay in diagnosis and treatment can lead to adverse and fatal outcomes. This patient had no known underlying conditions besides a recent mild COVID-19 infection and underlying Chiari I malformation, neither of which are known to be associated with cryptococcal meningoencephalitis. These factors may however have played a role in his disease and progression.