A 50-year-old Asian-born man with a one-decade history of HIV presented unconscious and afebrile. He was no longer taking HIV therapy and had been previously lost to medical follow up. Investigations showed anaemia, lymphopenia, pre-renal renal impairment, a CD4 count of 1 (normal range: 389–1569 cells/mL) and an HIV viral load of 55,000 copies/mL.

A CT brain was reported as normal. A lumbar puncture was performed, and CSF showed a normal glucose level of 2.6 (normal range: 2.5–5.0 mmol/L) and an elevated protein level of 0.6 (normal range: 0.1–0.3 g/L). There were no white cells on microscopy, but budding yeast in large numbers and Cryptococcus gattii was cultured. The organism was grown on CGB media and identified by standard methods, before being confirmed by external mycology reference laboratory.

An antigen test was positive for Cryptococcus prior to the lumbar puncture.

MRI brain showed features of Cryptococcal meningitis with multiple, enlarged ‘bubble-like’ perivascular spaces predominantly within the basal ganglia compatible with gelatinous pseudocysts, and widespread leptomeningeal enhancement. Axial flair sequence shows layering material dependently in the ventricular system, compatible with CSF/Cryptococcus interface, without abscesses or Cryptococcomas (Fig. 1).

The patient was treated with liposomal amphotericin and then fluconazole and antiretrovirals with a good response and remains well at home two years later. A follow up MRI is shown in Fig. 2.

To our knowledge, the radiological appearance of layering is unusual in imaging series of Cryptococcal infection [1,2].

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Whether this is due to late case presentation or Cryptococcus gattii rather than Cryptococcal neoformans [3], which is unusual in HIV but relatively common overall in Australia [4], is open to speculation. There is a limited scope of published neuroimaging in patients with Cryptococcus gattii in HIV-affected individuals [5], since in our state of Victoria gattii is more often seen in the immunocompetent but represents about one quarter of all Cryptococcus presentations [6]. However, mass lesions and or obstructive hydrocephalus are seen more commonly in our setting, though this may be biased by the significant difference in host factors, C neoformans being more common in those immunocompromised [7]. Recognition of this appearance may be useful in future clinical studies.

References


Fig. 1. T2 weighted axial MRI brain image showing vesicular perivascular growth of C. gattii with organism/CSF level visible in the dependant portion of both lateral ventricles at the level of the basal ganglia.

Fig. 2. FLAIR image taken two years later showing residual scarring only.