Unusual MR Imaging Presentation of Cryptococcosis in an Immunocompetent Patient

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Purpose
To report an extremely unusual MR presentation of cryptococcosis in a 49-year-old immunocompetent patient.

Materials & Methods
A 49-year-old healthy man presented with a change in mental status. He was involved in cleaning pigeon droppings from a pigeon coop a month prior to the presentation. MR imaging was performed.

Results
Initial MR imaging demonstrated small cystic clusters in the basal ganglia bilaterally (arrows). These were hypointense on T1 and hyperintense on T2(image 1A) and FLAIR images. Some of these lesions showed restricted diffusion. No contrast enhancement was noted initially (image 1B). Since the patient was immunocompetent, ischemia was thought initially to be cause of these findings. Later investigations revealed a positive cryptococcal antigen in the CSF as well as positive India ink culture for cryptococcus. Amphotericin therapy was started for 6 weeks and the patient was discharged. The patient returned a few days later with increasing confusion, worsening headache, and inability to care for himself. MR imaging now showed marked enlargement of the previously noted cystic lesions in the basal ganglia and florid peripheral postcontrast enhancement of the lesions (image 2B). There was marked surrounding edema seen on the T2/ FLAIR images. An interesting imaging finding was all the lesions showed isointense T2 signal with central dots of hyperintensity (image 2A). Restricted diffusion seen in the lesions previously had resolved. However, new different areas of restricted diffusion were seen now in the basal ganglia. Multiple repeated CSF cryptococcal antigen tests were negative suggesting that the infection was responding to the medication. However since no clinical improvement was noted, double drug therapy of flucytosine and fluconazole was instituted.
Conclusion
Appearance of cryptococcus CNS infection in an immunocompetent patient may be different from that commonly encountered in the immunocompromised. Cryptococcosis should be considered in the differential when multiple cystic lesions are noted in the basal ganglia even in an immunocompetent patient. Marked ring enhancement of the basal ganglia lesions may be seen which probably represents the patient's ability to mount an immune response, which would be uncommon in an immunocompromised patient. Marked surrounding edema also may be a feature of this infection. An interesting finding seen in this patient was the changing patterns of restricted diffusion in the lesions findings somewhat similar to that seen in other infections with different stages of evolution, such as toxoplasmosis.