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IMAGING HIGHLIGHT

Cerebral Nocardiosis: a diagnostic challenge

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Nocardia is a gram-positive, filamentous bacterium, capable of producing a plethora of organ pathologies, including the central nervous system. Cerebral nocardiosis is considered a rare entity, accounting for less than 2 % of brain abscesses.[1] Overall mortality has decreased from 60% to 37% over the last decades.[2] A continuous diagnostic challenge has been the mimicry between abscesses and other CNS pathologies, such as neoplasm, post-surgical scarring, or radiation-related inflammation. Herein, we report a patient who suffered multiple brain abscess infested by filamentous *Nocardia*. A 62-year old woman with lung adenocarcinoma stage IV, underwent a surgical resection and radiation therapy for a brain metastasis in the right cerebellar hemisphere. On the 3-month follow-up MRI, a new thin, irregular enhancement on the peripheral rim of the post-surgical cavity was noted. At the time, it was uncertain if this represented post-surgical change, residual neoplasm, radiation reaction, or infection. One-year after the brain mass resection, the patient presented to the hospital with new-onset expressive aphasia and focal weakness in the left lower extremity. Repeat MRI showed 3 new ring-enhancing lesions within the left cerebellum, left temporo-parietal junction, and left para-median superior parietal lobe (Figure 1). There was persistent irregular enhancement within the right cerebellum, now extending to the right middle cerebellar peduncle. Aspiration biopsy revealed a large amount of *Nocardia farcinica,* which was resistant to ceftriaxone, imipenem, clarithromycin, tobramycin, doxycycline, and minocycline. The patient was started on trimethoprim-sulfamethoxasole 400 mg three times/day, but despite continued antibiotic treatment, she became bacteremic. This was complicated by acute toxic

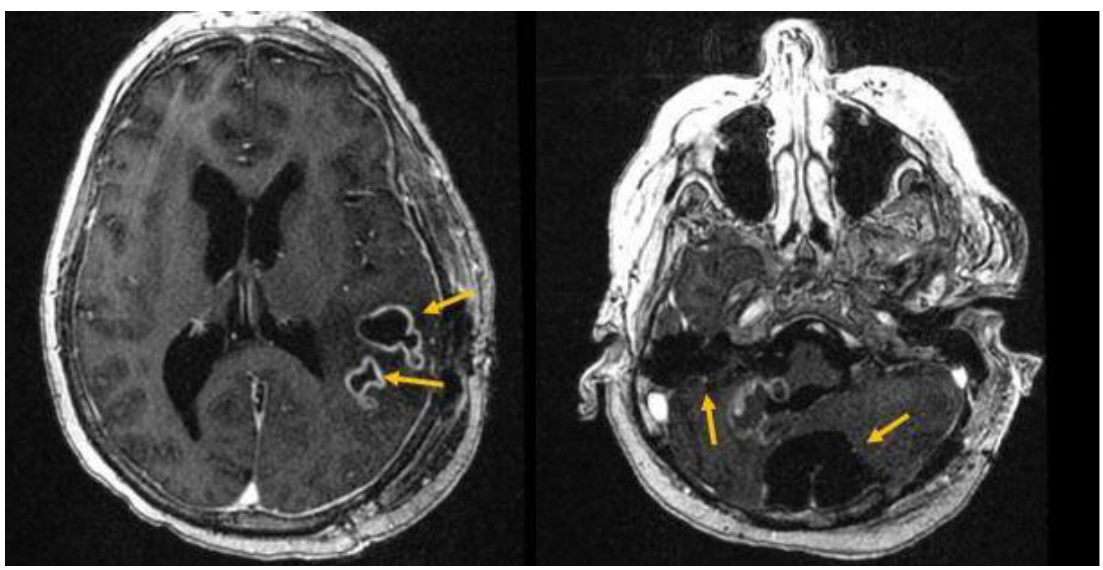

Figure 1. Ring enhancing cerebral lesions (arrows) are demonstrated within the left cerebellum, left temporo-parietal junction, left para-median superior parietal lobe, and right cerebellum on T-1 weighted magnetic resonance imaging of the brain, taken 15-months after brain mass resection.

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metabolic encephalopathy, invasive pulmonary nocardiosis, and multiple skin abscesses. She eventually expired after 8 weeks of antibiotic treatment. This case illustrates the diagnostic challenges associated with cerebral nocardiosis in the setting of multiple co-morbidities.

DISCLOSURE

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