The patient was a 72-year-old woman with microscopic polyangiitis, complicated by crescentic glomerulonephritis on chronic prednisone and rituximab. She had several recent admissions to the hospital for cellulitis and gram-negative rod bacteremia. This admission was initially similar; however, late in her hospital course she developed respiratory decline requiring transfer to the intensive care unit (ICU). She was febrile to 101.4°F (38.6°C), and peripheral white blood cell (WBC) count was 19 000 cells/μL. Due to somnolence, a noncontrast computed tomography scan of her brain was performed and revealed a 3-cm left temporal lobe lesion (Figure 1) and a small frontal lobe lesion. Previous neuroimaging obtained 1 week prior for concern of transient ischemic attack showed no lesions. A lumbar puncture was performed, which found a cerebrospinal fluid (CSF) WBC count of 135 (normal 0–5), with 80% neutrophils (normal 0%–5%). The CSF glucose level was 63 mg/dL (normal 40–70 mg/dL) and protein level was 91 mg/dL (normal 15–45 mg/dL). Gram stain was negative. Her family did not wish for her to be intubated, as it was not congruent with her goals of care; thus, the brain lesion was not aspirated. The patient suffered progressive neurologic decline despite broad-spectrum antimicrobial therapy, which included ceftriaxone, ampicillin, metronidazole, linezolid, and liposomal amphotericin B. While admitted to the ICU, the patient developed numerous, discrete, 1- to 2-cm, tender, erythematous nodules on the left thigh distributed in a sporotrichoid pattern (Figure 2), which were biopsied in an attempt to identify the underlying infectious etiology. Ultimately, all cultures, including fungal and acid-fast bacilli, from both the CSF and the skin biopsy were without growth. A CSF cryptococcal antigen was negative. Unfortunately, the patient rapidly declined and died. Postmortem examination of the histopathology from the skin biopsy revealed trophozoites and cysts (Figure 3).

What is your diagnosis?

Figure 1. A 3-cm hypodense lesion in the left temporal lobe.

Figure 2. Several discrete 2- to 3-cm erythematous nodules are present in a linear arrangement over the left thigh.

Figure 3. Hematoxylin and eosin stain demonstrates scattered cysts and trophozoites (400 × magnification).