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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2010, 27(1):136–137

# Medical Imaging Quiz – Case 9

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The patient was admitted to the Neurology Department with right leg muscle weakness of a three days' duration, and a subsequent fall to the ground, with resulting trauma. A previous medical history revealed chronic lymphocytic leukemia diagnosed 6 years previously, and currently in remission (not receiving any treatment), type 2 diabetes mellitus, benign prostatic hypertrophy, and episodes of low back pain. One month before admission, the patient was presented with a low-grade febrile episode without chills, which was treated with antipyretics and a short course of antibiotics, without any significant improvement. Ten days before admission, the fever had resolved spontaneously. On physical examination, a right-sided muscle weakness was verified (3/5), and bilaterally enlarged axillary lymph nodes and a bilateral carotid bruit were detected. Routine chest x-rays were found to be normal. An initial CT scan of the head (fig. 1) was performed on the day of admission. Neurological deterioration was present on the fourth day of hospitalisation, and a second CT scan of the head (fig. 2) was performed, along with brain MRI (fig. 3). After reviewing the results of the examinations, brain surgery was performed.

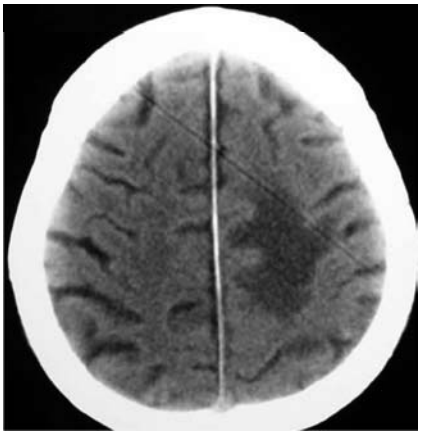

**Figure 1.** Initial brain CT scan shows a large hypodense region in the white matter of the left parietal lobe.

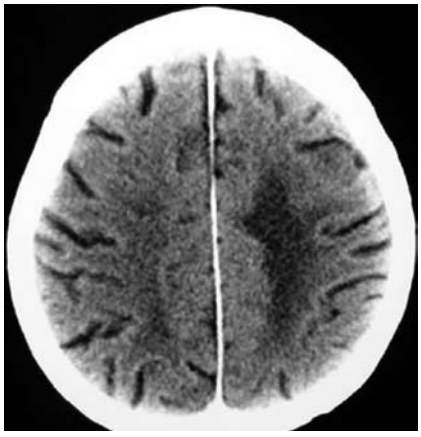

**Figure 2.** A second brain CT scan shows minimal changes compared with the first CT scan. No significant peripheral enhancement is seen.

## Comment

*This patient presented with a neurological deficit of non-acute onset, which initially may be attributed to a vascular/ischemic etiology. Important medical history findings that should be noticed concern the past febrile episode and the fact that the patient is in an immunocompromised state due to his chronic leukemia. The first CT scan (fig. 1) showed a large irregular hypodense lesion on the left parietal lobe. The second CT scan (fig. 2) showed a picture similar to that of the first CT scan, but the MRI examination showed low intensity signals surrounded by high intensity borders after contrast infusion*

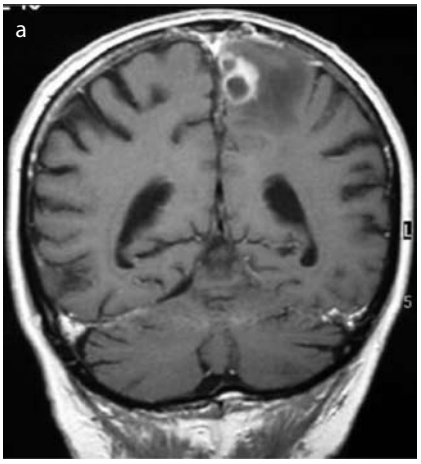


**Figure 3 (a, b).** Brain MRI; coronal T1-weighted image showing an enhanced rim surrounding the lesion, raising the suspicion of an abscess.

*on T1-weighted imaging, compatible with an abscess. The patient was operated on, and a histological-microbiological examination of the removed specimen showed Nocardia infection. Nocardia spp can infect patients with a decreased immune status. It is ubiquitous in soil, and enters the body through a discontinuation of the first line of defence, that is, a skin or mucosal abrasion. The initial infection may mimic a Staphyloccocal infection, with a skin lesion and low-grade fever, which resolves after some time. Systemic involvement includes the lungs, which are most commonly affected, and the central nervous system (CNS), which is affected in about 45% of patients with pulmonary nocardiasis. In this patient, after the diagnosis of Nocardia infection of the CNS was made, a chest CT scan was performed, showing no pathological findings. Nocardia infection of the brain without pulmonary involvement is not common.*

## References

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***Diagnosis:*** *Nocardia infection of the brain*