Learning Objectives

• Clinical manifestations of neurocysticercosis (NCYST) are broad and commonly include seizures, cognitive impairment, headache, and focal neurological deficits
• Extraneural cysticercosis usually involves muscle or subcutaneous tissue

HISTORY OF PRESENT ILLNESS

A 76-year-old Vietnamese man with history of Alzheimer’s dementia presented to the ED with altered mental status, cyclical headaches, and right calf pain. According to his family, he complained of right leg pain for the past 3 years which acutely worsened in the prior 2 weeks.

PHYSICAL EXAM

Vital signs were within normal limits. The patient was confused and only oriented to self. Neurological exam was otherwise non-focal. The remainder of the examination was significant for diffuse swelling and tenderness in the right lower leg with a poorly demarcated area of erythema extending to mid-shin.

LABORATORY DATA

• Creatine Kinase: 294
• CBC, BMP, UA, and Toxicology screen were unremarkable

Case

Figure 1: Leg radiograph demonstrating many “rice grain calcifications” (arrows) throughout the lower limb. Long axes of the calcifications are oriented in the plane of the muscle fibers which is highly suggestive of cysticercosis.

Figure 2: Non-contrast computed tomography showing multiple punctate calcifications (arrows) throughout the brain parenchyma.

Figure 3: Life Cycle of Cysticercosis

Figure 4: Cysticerci in infected pork (A) and petri dish (B)

Clinical Course

X-ray of the right tibia revealed multiple calcified lesions resembling rice grains. Head CT showed multifocal calcifications scattered throughout the brain parenchyma. Infectious disease was consulted for NCYST with extraneural involvement. Treatment was not initiated as cysts were calcified. The patient was started on clindamycin for cellulitis and transitioned to cephalaxin for a total of 8 days treatment. The leg erythema, swelling, and pain resolved.

Teaching Points

• Cysticercosis is caused by the larval stage of the tapeworm Taenia solium. NCYST is the most frequent CNS parasitic disease worldwide with over 50 million cases.
• Significant cognitive decline may be present irrespective of phase (calcified or active). Approximately 70% of patients present with calcified lesions only. There is no correlation between cognitive scores and the number, localization, or type of NCYST lesions.
• Extraneural cysticercosis may be seen in muscle or subcutaneous tissue as “rice grain calcifications” on imaging. CT imaging of thighs in one study demonstrated muscle calcifications in 52% of patients with calcified intraparenchymal brain lesions.
• Treatment consists of steroids and antiparasitic medication (albendazole or praziquantel). Calcified cysts are not treated.

References