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Infectious Disease

Unexpected parasitic disease diagnosed in a patient with seizure

Jeremy R. Towns MD | **Justin Pinkston MD** | **Matthew P. Kelly MD** | **Samuel L. Burleson MD**

Department of Emergency Medicine, University of Alabama at Birmingham, Birmingham, Alabama, USA

Correspondence
Samuel L. Burleson, MD, University of Alabama at Birmingham, 701 20th St S, Admin Building 1320B, Birmingham, AL 35222, USA.
Email: slburleson@uabmc.edu

1 | PATIENT PRESENTATION

A 19-year-old Guatemalan female presented to the emergency department after a seizure. She reported a seizure 3 months ago and was prescribed phenytoin. She complained of mild headache and nausea, now resolved. Vital signs, neurologic examination, computed tomography (CT) of the head, and laboratory testing were unremarkable. Chest radiography revealed a calcified mass in the right liver lobe (Figure 1). Point-of-care ultrasound (Figures 2 and 3) and CT (Figures 4 and 5) revealed a calcified mass and a thick-walled, partially calcified, hypoattenuating fluid-filled cyst with dependent hyperdensities in the right liver lobe, consistent with cystic echinococcosis, likely stage CE3a. During admission, infectious disease was consulted, confirmatory serology was sent, and magnetic resonance imaging of the brain was negative. The patient was discharged with a plan for watchful waiting and repeat imaging.

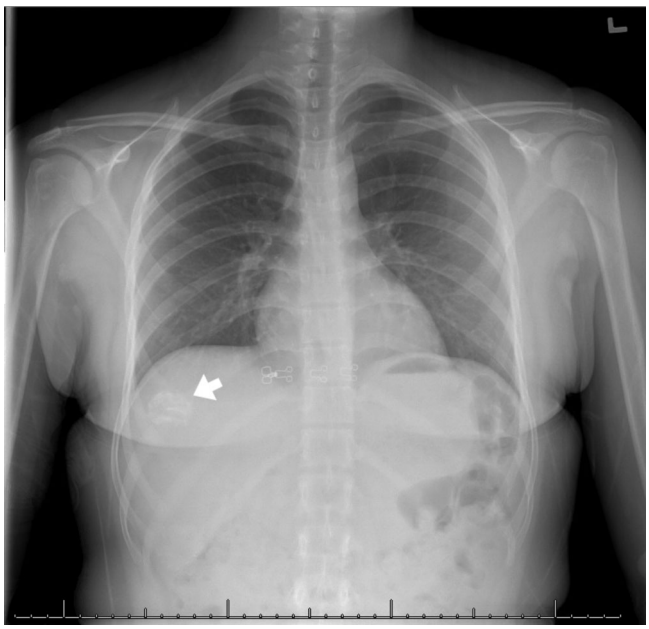

FIGURE 1 Posteroanterior chest radiograph revealing rounded calcified mass (arrow) in the right lobe of the liver

2 | DIAGNOSIS

2.1 | Cystic echinococcosis

Cystic echinococcosis is a widely endemic parasitic disease caused by the *Echinococcus granulosis* tapeworm, commonly found in pastoral populations, as sheep and pigs serve as intermediate hosts. Humans are incidentally infected by ingestion of eggs in feces, soil, or water. Parasites pass through the intestinal wall, into the portal venous system, allowing cyst formation in the liver (most commonly), lungs, and other organs.[1] Cysts are generally slow growing and asymptomatic unless large or compressing nearby organs.[1] Diagnosis is based on epidemiology, serology, and imaging.[1,2] The World Health Organization has a standardized ultrasonographic staging algorithm, and treatment consists of antiparasitics; percutaneous aspiration, injection, respiration (PAIR); surgery; or watchful waiting and is based on stage, size, and location.[2]

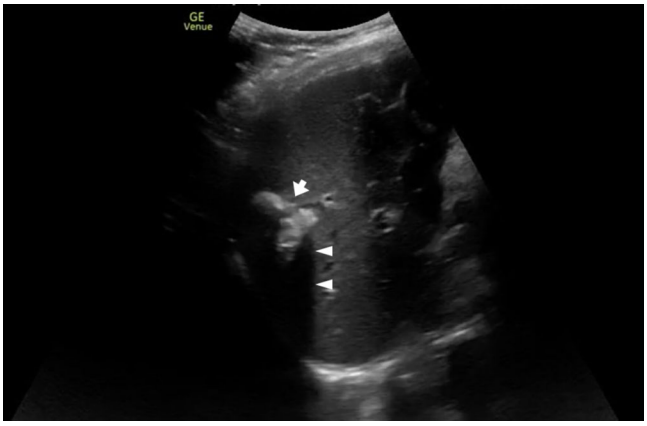

FIGURE 2 Point-of-care ultrasound of the right lobe of the liver revealing a hyperechoic lesion within the liver parenchyma (arrow), with dense shadowing (arrowheads) posteriorly indicating calcification

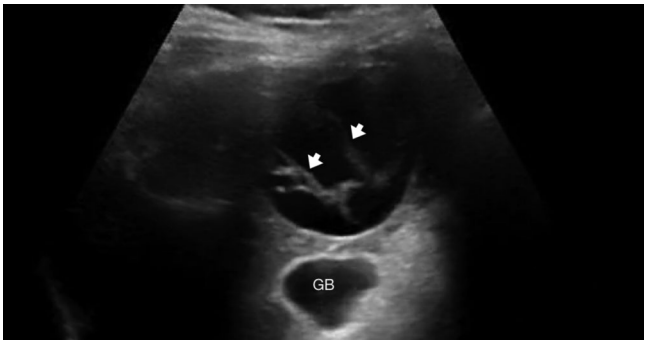

FIGURE 3 Point-of-care ultrasound of the right lobe of the liver revealing a circular, fluid-filled cystic lesion with multiple septations (arrows) indicating the involuting cystic wall of a stage CE3a hydatid cyst. The gall bladder (GB) is also seen in short axis

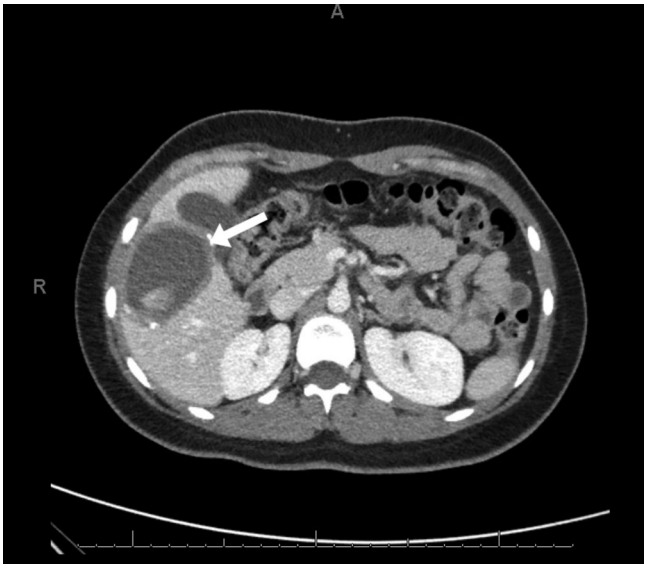

FIGURE 4 Axial computed tomography scan of the abdomen showing thick-walled, hypoattenuating right liver lobe cystic structure

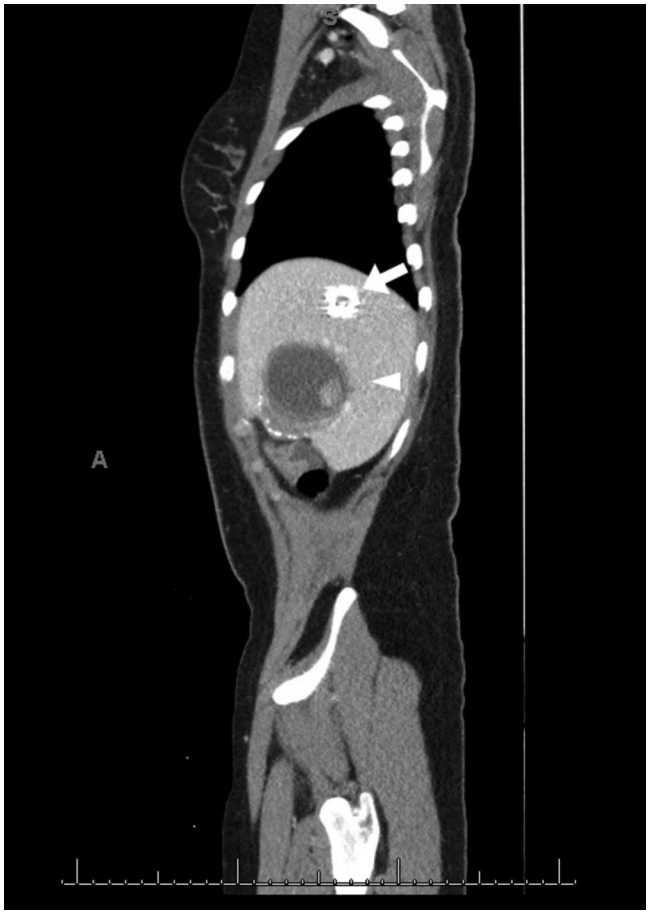

FIGURE 5 Parasaggital computed tomography scan of the abdomen reveals large, complex hypoattenuating liver cyst with partial calcification in the posterior wall (arrowhead) with hyperdense, calcified nodule posterior, and superior (arrow)

ORCID

Samuel L. Burleson MD https://orcid.org/0000-0002-6305-4677

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