Got worms! A case of Neurocysticercosis

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Got Worms? A case of obstructive hydrocephalus secondary to Neurocysticercosis

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INTRODUCTION
Cysticercosis infection is associated with the larval stage of the tapeworm Taenia Solium. It is most commonly found in the developing world, is associated with the ingestion of T. Solium eggs shed in the stool of a human tapeworm carrier, and is often identified as the cause of adult onset seizure disorders.1,2 Associated clinical syndromes are neurocysticercosis and extraneural cysticercosis. Neurocysticercosis specifically describes a parasitic infection of the central nervous system caused by migration of larval cysts from the gastrointestinal tract into the vascular and, ultimately, the central nervous systems.3 Neurocysticercosis is further classified as parenchymal and extraparenchymal, with extraparenchymal neurocysticercosis specifically involving intraventricular, subarachnoid, spinal or ocular involvement.

CASE DESCRIPTION
A 59-year-old Nigerian male was transferred to our institution following initial workup at an outside hospital for acute onset gate changes, general malaise and urinary incontinence. Imaging at the sending hospital was concerning for parasitic infection given patient’s clinical findings and recent immigration from Nigeria. Further imaging at Baystate was most concerning for obstructing hydrocephalus from cystic lesions in the third and fourth ventricles. Initial medical management focused on an anti-helminthic regimen and hourly neuro-monitoring in the intensive care unit. As the patient’s clinical picture waxed and waned, the decision was made to proceed with surgical decompression of the obstructing lesion via a posterior fossa craniotomy.

DISCUSSION
Anesthetic management of a patient with an active parasitic infection in the setting of obstructing hydrocephalus can be quite challenging. This patient presented with symptoms of increased intracranial pressure as well as systemic signs and symptoms of active infection requiring an urgent posterior fossa craniotomy. The patient underwent close neuro-monitoring throughout the case and was intubated using a glidescope to ensure appropriate placement of a NIM EMG monitoring endotracheal tube. The patient was maintained on remifentanil, Precedex™ and propofol infusions; paralysis was avoided to ensure that appropriate motor monitoring could be achieved. Intraoperatively, the patient was given anti-seizure prophylaxis as well as agents to decrease cerebral edema. Close arterial monitoring was achieved by utilizing an arterial line. Two large bore intravenous catheters were placed following induction. The neurosurgeon entered the third and fourth ventricles, where hundreds of cysts were identified and removed. Postoperatively, the patient was transferred, intubated, to the surgical intensive care unit for hourly neurochecks. Interestingly, the clinical presentation typically associated with neurocysticercosis is one of later progression of the infection and adult onset seizures.2,4 This patient presented with what appeared to be an active parasitic infection and the most immediate symptoms requiring urgent surgical intervention were associated with obstruction and an acute iatrogenic inflammatory response related to the anti-helminthic regimen. Unfortunately, the patient’s clinical course was complicated by continued episodes of obstructive symptoms requiring multiple surgical re-explorations and placement of a lumbar drain, which was further complicated by Klebsiella meningitis. Although the patient initially showed signs of improvement and was discharged three months after his first admission, he was quickly readmitted and succumbed six months after initial presentation.

REFERENCES

IMAGES OF T. SOLIUM CYSTS

Figure 1. T. Solium Cysts being removed from patient. Photo by author.

Figure 2. Close-up of T. Solium Cysts removed from patient. Photo by author.