

## Image Report

# Endoscopic removal of intraventricular neurocystercercosis

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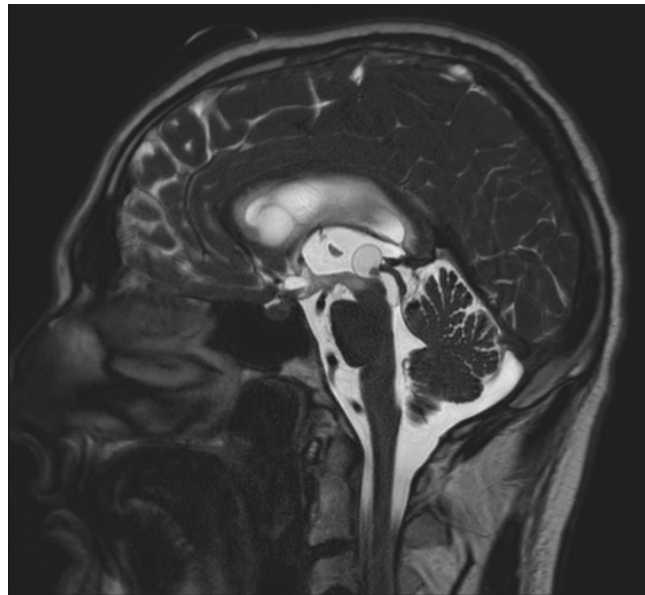
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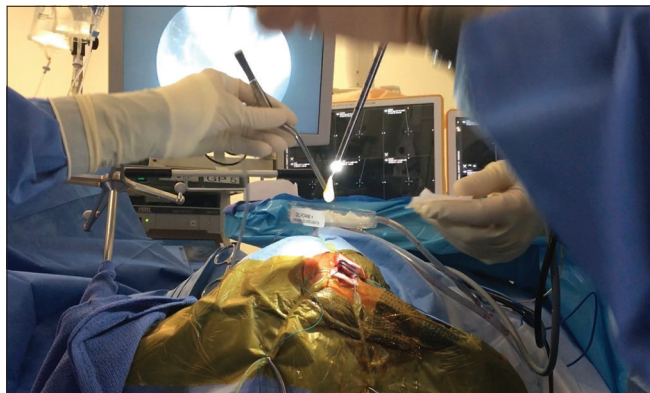
A 29-year-old male with extensive travel history presented with altered mental status and headaches. Head computed tomography imaging revealed obstructive hydrocephalus and an external ventricular drain was placed with neurologic improvement. Serum and cerebrospinal fluid (CSF) testing were nondiagnostic, including negative cysticerci antibodies. Magnetic resonance imaging revealed a cystic lesion centered in the posterior third ventricle obstructing the cerebral aqueduct [Figure 1]. Following informed consent, the patient underwent right frontal



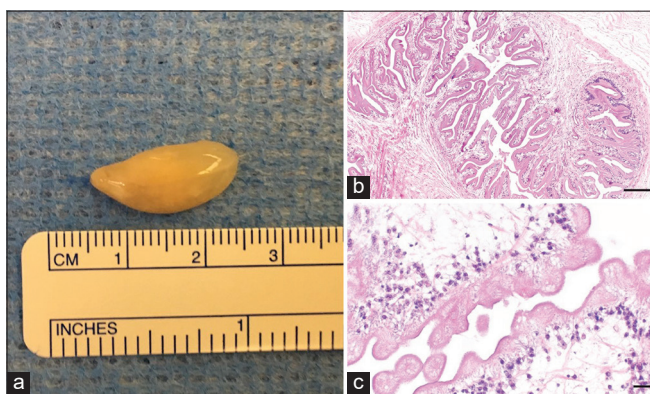
**Figure 1:** T2-weighted magnetic resonance imaging of the brain with a cystic lesion centered in the posterior floor of the third ventricle along the opening of the cerebral aqueduct, measuring approximately  $1.3 \times 1.0 \times 1.7$  cm. The mass demonstrated trace peripheral enhancement and a punctate focus of internal susceptibility, which may reflect internal calcification. The scan further characterized the known ventriculomegaly with periventricular T2 hyperintensities consistent with transependymal cerebrospinal fluid flow, further supporting the diagnosis of obstructive hydrocephalus.

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**Figure 2:** Intraoperatively, the cyst was removed by extracting the endoscopic sheath and the grasping forceps in one maneuver. The cyst was removed in total without any recognized discontinuities of the cyst and then sent for pathologic diagnosis and analysis.



**Figure 3:** (a) Grossly, the specimen is a smooth surface, yellowed cyst with a central portion of more firm nodularity. Microscopically at low (b – scale bar 200  $\mu$ m) and high (c – scale bar 20  $\mu$ m) power on H&E staining, the specimen exhibited the structure of a tapeworm with a morphology consistent with *Taenia Solium*, the parasitic etiology of neurocystercercosis.

craniotomy for stereotactic endoscopic removal of the intact cyst. The endoscope was passed into the frontal horn of the lateral ventricle and then navigated into the third ventricle. At that time a smooth surface, yellow-gray cyst membrane was recognized below the massa intermedia. The cyst was then subsequently removed by extracting the endoscopic sheath and grasping forceps in one maneuver. The cyst was removed

in total without any recognized or apparent discontinuities of the cyst [Figure 2]. On gross examination, the specimen was a smooth surfaced, yellow cyst with an eccentric firm nodularity, representing a scolex [Figure 3]. Following ingestion of food contaminated with larvae of the tapeworm *taenia solium*, this parasite can arise in the central nervous system and presents as a mobile intraventricular mass capable of intermittently obstructing CSF flow, thereby causing acute hydrocephalus.<sup>[2,3]</sup> Although the majority of central nervous system neurocystercercosis is intraparenchymal, various studies report up to 33% occur within the ventricular system as seen in this case.<sup>[1,4]</sup> On routine 3-month follow-up, the patient, without antiparasitics, remained without evidence of neurocystercercosis and at his neurologic baseline [Video 1].

#### Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Nil.

#### Conflicts of interest

There are no conflicts of interest.

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