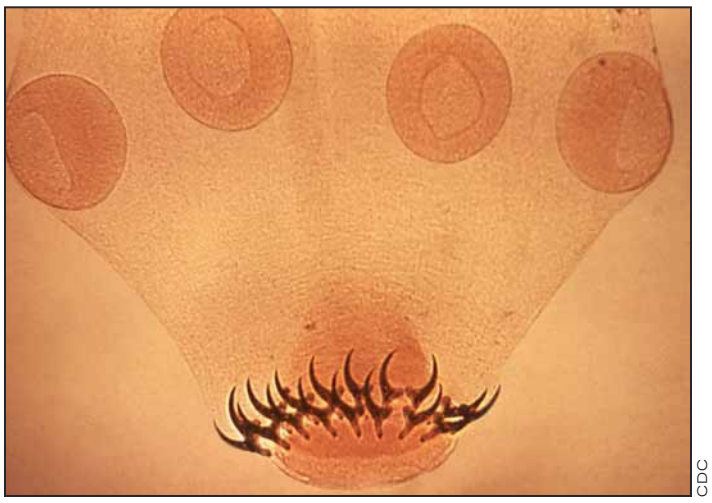
In the human intestine, the cysticercus (larval stage) develops over 2 months into an adult tapeworm, which can survive for years. The parasite attaches to and resides in the small intestine by using the suckers and hooks located in its head region, or scolex.



CDC

Parasite May Be at Root Of New-Onset Seizures

BY DAMIAN McNAMARA
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MIAMI BEACH — Public health officials are stepping up efforts to combat cysticercosis, a parasitic infection with dire neurologic consequences that is on the rise in the United States, according to James H. Maguire, M.D., chief of the parasitic diseases branch of the National Center for Infectious Diseases at the Centers for Disease Control and Prevention, Atlanta.

Each year in the United States, there are an estimated 1,000 new cases of cysticercosis, a leading cause of adult-onset epilepsy in endemic areas such as Central America and Africa, Dr. Maguire said at the annual meeting of the American Society of Tropical Medicine and Hygiene.

Cysticercosis is acquired after accidental ingestion of the eggs of the pork tapeworm *Taenia solium*. Infected people shed the eggs in their feces; infection spreads through contaminated food, water, or surfaces. Once the eggs hatch in the stomach, they penetrate the intestine and travel through the bloodstream. The eggs produce characteristic cysts anywhere in the body; cysts in the brain cause neurocysticercosis and produce seizures and other neurologic sequelae, according to Dr. Maguire.

"The real message is if someone comes in with seizures and they have a single lesion on CT or MRI, it could be cysticercosis," Dr. Maguire said. Physicians need a high index of suspicion; an accurate diagnosis could spare a patient neurosurgery.

If a central nervous system cyst blocks the flow of cerebrospinal fluid, hydrocephaly can ensue. Surgery or shunt placement is indicated in some of these patients, but in most cases the cysts resolve on their own. Other neurologic sequelae include a permanent, stroke-like syndrome. Even the scar left behind by a former cyst can become the focus for future seizures, Dr. Maguire warned.

Patients are generally treated with antiparasitic drugs in combination with anti-inflammatory agents.

Infection typically comes from eating contaminated pork, fruits, and vegetables, but *T. solium* is also spread through contact with infected people or fecal matter. Federal standards for the U.S. pork industry protect most Americans, Dr. Maguire said.

Larval stage infection with *T. solium* leads to symptomatic cysticercosis, but people with an adult tapeworm can be unknowing sources of infection. Four cases of neurocysticercosis in New York City among Orthodox Jews—who do not eat pork—were initially puzzling to investigators (N. Engl. J. Med. 1992;327:692-5).

Only one had traveled to an endemic area. Of six domestic employees tested; one was found to have an active infection and another had a positive serologic test. "If a person is infected by someone with an adult tapeworm, contact tracing becomes very important," Dr. Maguire said.

Cysticercosis is becoming increasingly recognized in U.S.-born residents, although it is still primarily a disease of immigrants from countries such as Mexico, Central America, sub-Saharan Africa, India, and East Asia, Dr. Maguire said.

Increasingly, prevalence of cysticercosis is reported in New Mexico, New York, and especially California, states with a large number of immigrants. However, "We saw 6-12 cases per year in Boston when I worked there—not a hotbed of immigration," he added. ■