

# Unraveling the Enigma of Neurocysticercosis: Causes, Symptoms, and Treatment

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## Description

Neurocysticercosis, a parasitic infection of the brain and central nervous system, is a significant global health concern. This disease is caused by the larvae of the tapeworm *Taenia solium* and represents a complex medical puzzle, with varying symptoms and complications. In this article, we will delve into the causes, symptoms, and treatment of neurocysticercosis, shedding light on the hidden menace that affects millions of people worldwide.

Neurocysticercosis is primarily caused by the tapeworm *Taenia solium*. This parasite has a two-host life cycle, with humans acting as the definitive host and pigs as the intermediate host. When humans ingest contaminated food or water containing *T. solium* eggs, they become infected, allowing the larvae to mature into adult tapeworms in the intestines. These adult tapeworms produce thousands of eggs that are excreted in feces, thus perpetuating the cycle.

## Transmission and risk factors

The transmission of neurocysticercosis occurs through the ingestion of *T. solium* eggs. This can happen due to poor hygiene practices, contaminated food and water, or contact with infected individuals. Risk factors include living in regions where the tapeworm is endemic, consuming undercooked or raw pork, and close contact with pigs or infected individuals.

## Clinical presentation

The clinical presentation of neurocysticercosis is highly variable, depending on the location, number, and size of the cysts in the brain and central nervous system. Common symptoms include:

- Headaches
- Seizures
- Nausea and vomiting
- Cognitive impairment
- Vision problems
- Weakness or paralysis
- Mental health issues

It's important to note that the severity of symptoms can range from mild to life threatening, and some individuals may remain asymptomatic for years.

## Diagnosis

Diagnosing neurocysticercosis can be challenging due to its diverse clinical manifestations. Doctors typically use a combination of clinical evaluation, medical history, imaging studies such as CT scans or MRI, and serological tests to confirm the presence of the parasite. These tests help in identifying cysts in the brain and central nervous system, allowing for an accurate diagnosis.

### Treatment and management

Treatment for neurocysticercosis depends on the stage of the infection and the severity of symptoms. It usually involves a multi-pronged approach:

**Medication:** Anti-parasitic drugs such as albendazole or praziquantel are prescribed to kill the cysticerci. These medications may be complemented with corticosteroids to reduce inflammation and swelling in the brain.

**Surgery:** In cases of large, symptomatic cysts or when medications are ineffective, surgical intervention may be required. Surgeons may remove the cysts or use minimally invasive techniques to drain them.

**Symptomatic treatment:** Depending on the symptoms, additional treatments may be needed. Antiepileptic drugs can help control seizures, and pain relief medication can manage headaches and discomfort.

**Supportive care:** Patients with neurocysticercosis may require ongoing medical and psychological support to manage the disease and its associated complications.

### Prevention

Preventing neurocysticercosis involves various strategies:

**Proper hygiene:** Practicing good hygiene, including thorough handwashing and using safe water sources, can reduce the risk of infection.

**Cooking pork thoroughly:** Ensuring that pork is cooked at an adequate temperature can prevent the transmission of *T. solium*.

**Education:** Raising awareness about the disease, its transmission, and the importance of seeking medical care can help communities protect themselves from infection.

**Controlling pigs:** Implementing measures to reduce the risk of pigs becoming infected with *T. solium* is crucial, especially in areas where the parasite is prevalent.

Neurocysticercosis is a complex and often misunderstood disease caused by the tapeworm *Taenia solium*. Its varied clinical presentation, risk factors, and potential complications make it a significant global health issue. Early diagnosis and prompt treatment are essential to improve outcomes for affected individuals.

Prevention, through proper hygiene practices, education, and controlling the spread of the parasite, is equally vital. The global medical community must continue to work together to combat this silent menace, aiming to reduce the burden of neurocysticercosis and improve the quality of life for those affected by this disease.