



H1N1 Flu Virus, Hand Sanitation, and Neurocysticercosis

Albert C. Cuetter, M.D.

The recent H1N1 flu pandemic ignited a compulsory campaign to wash and sanitize hands in public buildings, schools, and hospitals. As a consequence the main mode of transmission of human cysticercosis has been nipped in the bud. We are starting to notice a steady reduction of the number of cases of active and involuntional cysticercosis at Texas Tech Clinics and at the University Medical center.

The high prevalence of neurocysticercosis in the El Paso area has been demonstrated in the past.^{1,2} Another evidence of the high prevalence in El Paso is the finding of cerebral calcifications due to inactive cysticercosis in a sample of the population taken at random. A recent review of 200 CT scans of people who were seen at the UMC for trauma showed that the prevalence of multiple calcifications of the brain in the population of El Paso is 2%. (Dr. Jose Gavito's personal communication)

Due to compulsory hand sanitation implemented since September 2008, the number of active and involuntional cysticercosis cases has dropped at the Texas Tech Clinics and University Medical Center of El Paso from an average of one new case every 90 days to no new cases since February 2009. The referral sources have not changed in last 4 years.

This decrease is most likely the result of the interruption of the natural but aberrant cycle of the parasite that brings *Taenia* eggs from the feces of the person with *Taenia* to the mouth of the victim. The adult *Taenia solium* lives in the intestine of humans, the only definite host. Embryonated eggs excreted in feces can remain viable in the soil for many weeks. The usual life cycle of *Taenia solium* involves swine as the intermediate host. In countries with inadequate sewage treatment, pigs may ingest eggs from the soil. Human acquire cysticercosis by ingesting food contaminated with human fecal material containing tapeworm eggs. This infestation often occurs when an infected food handler prepares the food. Fecal/oral autoinfection may also occur in persons with an adult tapeworm. The ingested eggs hatch in the intestinal wall. Larvae penetrate the intestinal wall and are carried to the soft tissues of the body particularly muscle and brain where they form a cyst, called cysticercus, 5 mm to 18 mm in diameter. The development of an active cysticercus cyst, from the time the eggs are ingested to encystment, is completed in 60 to 70 days.³ Cysticerci are most commonly found in the muscles of pigs and in the central nervous system of humans.⁴ When people ingest cysticerci in undercooked pork, the larvae are liberated in the stomach, attach to the intesti-

nal wall, and become mature tapeworms in 5 to 12 weeks. Humans may have not only the adult worm in the intestinal tract but also the larval form (cysticercus) in the brain. Thus, humans acquire the intestinal parasite by eating undercooked pork infected with cysticerci; and cysticercosis is acquired by ingesting food contaminated with fecal material from a person who harbors the tapeworm in the intestine.

We certainly hope that hand sanitation will continue to be implemented in this area. We would like the Public Health officials to be aware of this phenomenon. If the current sanitation measures are enforced and maintained this will help eradicate cysticercosis from El Paso area once for all.

REFERENCES

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Albert C. Cuetter, Professor, Department of Neurology, Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center.