

Hydatid Disease

Hydatid disease (also known as hydatidosis or echinococcosis) is a potentially serious, sometimes fatal, condition caused by cysts containing the larval stages of the *Echinococcus granulosus* (*E. granulosus*) tapeworm (Dog Tapeworm).

Adult *E. granulosus* tapeworms infect dogs and other canines, and the tapeworm eggs are shed in faeces of these infected animals. People become infected by ingesting (swallowing) the eggs. This can occur via hand-to-mouth transfer after handling dogs or objects contaminated with the eggs, or from consuming contaminated food or water.

The larval form of the tapeworm may lodge in various body sites where they form a fluid-filled sac known as a hydatid cyst. The cysts contain immature forms of the tapeworm and can increase in size from 5–10 cm or more over a period of time. While some cysts may die, others can remain alive for many years. Cysts also contain 'daughter cysts' which, if released, may spread to other areas of the body.

Hydatid disease occurs worldwide and is especially common in grazing areas. Notification of hydatid infection in humans has not been required in Queensland since 2008. From 2000 to 2008 there were between 4 -13 notifications each year.

Signs and Symptoms:

The time from ingestion of the eggs to developing symptoms of hydatid disease can range from months to many years.

Ultrasounds or CAT scans may be used to detect the presence of hydatid cysts in the body. Blood tests to check the person's immune response to the parasite may be useful, but are not always positive even when an infection is present. Sometimes a sample is taken from a cyst to check for the presence of the tape worm.

Hydatid cysts are most commonly found in the liver and lungs, although they may also occur in other organs, bones and muscles. The cysts can increase in size to 5 – 10 cm or more and may survive for decades.

Non-specific signs include loss of appetite, weight loss and weakness. Other signs and symptoms depend on the location of the hydatid cysts and the pressure exerted on the surrounding tissues; and may include vomiting, abdominal pain and shortness of breath.

If a cyst leaks or ruptures it can cause a severe allergic reaction and even death.

Treatment:

Treatment is often complicated and will depend on the size and location of the cysts. Surgical removal is often required. Drugs that kill the tapeworms are also used in some circumstances and may require the drug to be injected into the cysts.

Sometimes no treatment is needed; however the infected person will need to be monitored for a long period of time.

Transmission:

Domestic dogs, dingoes and foxes can carry thousands of the tiny adult tapeworms in their intestines without any sign of infection. Tapeworm eggs are passed in the dog's faeces and may survive in soil, pastures and gardens for several months.

Animals such as sheep, cattle, goats, pigs, camels, horses, kangaroos, wombats and wallabies become infected by eating grass contaminated with eggs in dog faeces. Hydatid cysts form in the meat and organs of these

animals; the cycle is completed when dogs are infected by eating the cysts in uncooked meat and offal of infected animals.

Dogs will start passing the eggs about 5 – 7 weeks after they are infected. Even without treatment the infection will clear in dogs within 6 months to a year; but the dog can be reinfected if it eats contaminated meat.

Human infection occurs when a person swallows tapeworm eggs. This may occur by patting a dog then touching your mouth, by kissing a dog, through contact with contaminated soil or through consuming food or water contaminated with dog faeces containing tapeworm eggs.

Humans can only be infected by eating eggs passed by an infected dog or other canine. Hydatid disease is not transmitted from person to person, or by a person eating the meat of an infected animal.

The disease is most commonly found in people raising sheep. Young children are particularly at risk of becoming infected with the tapeworm eggs, but symptoms may not appear for many years.

Prevention:

- Wash fruits and raw vegetables before eating.
- Wash hands before eating or smoking, after handling dogs and after contact with items that are likely to be soiled with dog faeces.
- Discourage dogs from licking people's faces, and do not kiss dogs.
- Do not allow dogs to defecate near vegetable gardens or children's play areas
- Reduce the amount of disease in dogs
 - Ensure dogs are kept away from areas where animals are slaughtered and are not allowed to scavenge on carcasses.
 - Prevent dogs from eating uncooked offal.
 - Dispose of infected offal by deep burial or burning to prevent it from being consumed by dogs or other canines.
 - Reduce dog populations on farms to the occupational need for them.
 - Seek advice from your veterinarian about effective treatment to prevent infection in working, pet or visiting dogs. This is particularly important for dogs in rural areas or those that may have contact with wildlife or feral animals.

Health outcome:

Hydatid disease is a potentially serious but treatable infection that may be fatal in a small number of cases. Hydatid disease occurs worldwide and is especially common in grazing areas.

Help and assistance:

For further information contact your doctor or health clinic; or call 13HEALTH (13 43 25 84) 24 hours a day, 7 days a week, for the cost of a local call.

References

Heymann, D. (2015). Control of Communicable Diseases Manual. (20th edition). Washington, DC: American Public Health Association, pp178 - 183.

Bennett, J., Dolin, R., Blaser, M., Mandell, G. & Douglas, R. (2014). Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases (8th edition). Philadelphia, PA: Elsevier/Saunders.

[World Health Organisation Echinococcosis Fact sheet N°377](http://www.who.int/mediacentre/factsheets/fs377/en/)

(<http://www.who.int/mediacentre/factsheets/fs377/en/>) Updated March 2014

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