



Browser's Bulletin 40:

Echinococcosis or Hydatid Disease

Figure 1: *Echinococcus granulosa*



Clinical hydatid disease is very rare in sheep and goats but it is not uncommon to see hydatid cysts at slaughter which can lead to the meat being condemned at abattoir. Ruminants are not treated for hydatid disease. Diagnosis is usually accomplished at slaughter or post mortem when numerous, large, larval cysts are found in the abdominal viscera, mesentery and lungs.

Hydatid cysts come from the adult tapeworm, *Echinococcus granulosa* which is found in the intestinal tract of carnivores, particularly dogs, foxes and dingoes. The hydatid tapeworm itself is very small (around 6mm) and causes no clinical signs in the dog. The adult worm passes eggs in the faeces of the dog which are then ingested by the intermediate host. These hydatid eggs can remain viable in the environment for approximately 12 months.

Sheep, cattle, goats, pigs, kangaroos, wallabies and humans can become infected with hydatid cysts. Hydatid disease in humans is potentially fatal. People become infected by accidentally ingesting eggs passed in the dogs faeces. People do not become infected by eating sheep and goat meat or offal contaminated with hydatid cysts. The hydatid eggs can be on the dog's coat, inhaled on a windy day or even spread by flies. Children are much more commonly infected due to their close contact with animals and poor hygiene. Cysts may locate in any body organ of people, including the brain. The only treatment in humans is surgical removal of the cyst. This is certainly not a common disease seen in people but certainly does occur. A few years ago a close friend of mine developed a lump in her abdomen, which ended up being a hydatid cyst the size of a rockmelon in her spleen and consequently had to have her spleen removed.

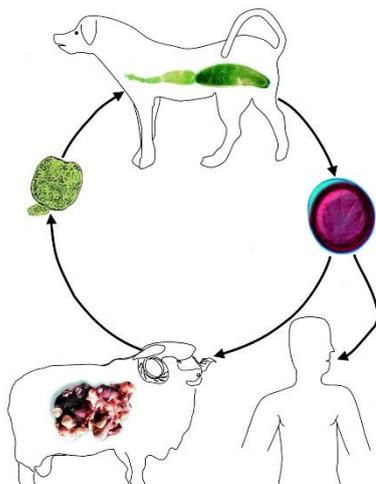


Figure 2: Life cycle

Inside the intermediate host the egg releases a larval stage which travels through the intestine via the circulation to the liver and lungs. It is in these visceral organs where you commonly find hydatid cysts. Occasionally these cysts pop and create more cysts throughout the body. Each cyst contains multiple tapeworm heads which are all capable to forming an adult tapeworm. When dogs are fed the offal of infected intermediate hosts, the lifecycle continues and the tapeworm matures into an adult within approximately 7 weeks.

The feeding of ruminant offal to dogs enhances the completion of the lifecycle. There appears to be an increase in prevalence of hydatid disease in livestock after rainy periods. Presumably the rain widely distributes the eggs in faeces on grazing land or in water supplies.

The total annual slaughter is approximately 5 million sheep, about 20 million lambs and 1.6 million goats. The majority of sheep, lambs and goats are slaughtered in AQIS-accredited export works where surveillance for disease occurs (MLA Reference). The National prevalence of Hydatids in abattoir inspected sheep, lambs and goats in 2008 was 0.13%. This doesn't look like many, but after calculating what 0.13% of 26 million animals slaughtered it came to approximately 33,800 animals.



Figure 3: Hydatid cysts in liver

Prevention of hydatid cysts in goats and other ruminants:

Prevention is aimed at breaking the lifecycle

- Don't feed offal to dogs
- Promptly dispose of dead ruminants before scavenging by dogs and foxes.
- Try and prevent dogs straying onto paddocks and defecating. Wild dogs can be trapped, baited, guardian animals and good fencing
- Treat domestic dog with praziquantel every 4-6 weeks to kill the adult tapeworm.
- Secure dogs at night to stop scavenging
- Practice good hygiene, ensure everyone washes hands thoroughly following contact with dogs and especially before eating.

Wildlife cycles of infection do exist in some areas, due to infestation of wild dogs/dingoes and kangaroos. Control of wild dogs will help reduce the level of infestation.

If you have other questions and concerns about hydatids in sheep and goats please send me an email on kylie.greentree@lls.nsw.gov.au

References:

- Animal Health Australia: Hydatids <https://animalhealthaustralia.com.au/wp-content/uploads/NSHMP-Hydatids.pdf>
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- Smith, M.A; 2009. Goat Medicine

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