Hydatid disease

Epidemiology in New Zealand

The larval (cystic or hydatid) stage of the dog tapeworm *Echinococcus granulosus* causes hydatid disease in humans and cattle. The Ministry of Agriculture and Forestry declared New Zealand provisionally free of hydatids in 2002.

More detailed epidemiological information is available on the Institute of Environmental Science and Research (ESR) surveillance website at www.surv.esr.cri.nz

Case definition

Clinical description

Cysts usually develop in the liver or lung (occasionally the spleen, brain, heart, kidney or bones) and slowly grow to 5–10 cm in length. They may persist for years or decades without symptoms and often are detected incidentally. Local pressure effects in a confined space may lead to symptoms. Rarely, cysts rupture into the biliary tree or a bronchus causing obstruction, secondary bacterial infection, an allergic reaction or secondary spread.

Even asymptomatic cysts should be notified.

Radiologically, hydatid cysts are single or multiple and may have a rim of calcification. There may be peripheral blood eosinophilia.

Laboratory test for diagnosis

**Laboratory confirmation requires** at least one of the following:

- identification of live *E. granulosus* in cyst fluid or, rarely, sputum
- positive serological tests for *E. granulosus*.

Case classification

- **Under investigation:** A case that has been notified, but information is not yet available to classify it as probable or confirmed.
- **Probable:** Radiological or other organ imaging evidence of characteristic cystic disease with positive serological tests.
- **Confirmed:** Histopathological or other demonstration of live *E. granulosus* cysts.
Not a case: A case that has been investigated and subsequently found not to meet the case definition.

Spread of infection

Incubation period
Years to decades, depending on number and location of cysts and how rapidly they grow.

Mode of transmission
In New Zealand, the definitive host has been the dog. *E. granulosus* adult tapeworms inhabit the dog’s intestines, and eggs are excreted into the environment. Sheep, cattle, goats, pigs, horses and humans accidentally ingest these eggs, which hatch in the intestine, and the resultant onchospheres penetrate the mucosa, migrate to tissues and multiply within cysts. Hydatids is not directly transmitted from person to person.

Period of communicability
Dogs begin to pass eggs 5–7 weeks after infection. Most infections resolve in 6 months, although occasionally adult worms survive 2–3 years. Eggs are particularly resistant to environmental conditions and may survive months in paddocks or gardens.

Notification procedure
Attending medical practitioners or laboratories must immediately notify the local medical officer of health of suspected cases. Notification should not await confirmation.

Management of case

Investigation
Obtain a history of travel and dog contact, especially farm dogs. Ensure serological diagnosis has been attempted.

Restriction
Nil.

Treatment
The case should be under the care of an infectious diseases physician. Albendazole is given, together with, in some cases, surgical resection or percutaneous aspiration-injection-re-aspiration.
Counselling
Advise the case and their caregivers of the nature of the disease and its mode of transmission.

Management of contacts
Not applicable.

Other control measures

Identification of source
In instances where recent infection is suspected (within 2 years), liaise with the Ministry for Primary Industries to investigate potential dog infection in the region. See ‘Reporting’ below.

Disinfection
Nil.

Health education
The slaughtering of cows, sheep, deer, goats and pigs must be carried out in an approved killing facility within a dog-proof enclosure to prevent dogs from having access to uncooked viscera. The offal from these animals must not be fed to dogs unless it is first cooked by boiling for a minimum of 30 minutes.

Follow local territorial authority or regional council regulations on dog worm treatment.

Imported livestock should be tested and tracked.

Encourage hand washing after contact with dogs or dog faeces, especially before eating. Young children are especially at risk.

Reporting
Ensure complete case information is entered into EpiSurv. All species of *Echinococcus* are notifiable organisms in New Zealand under the Biosecurity Act 1993.

On receiving a notification, medical officers of health should immediately notify the Director of Public Health at the Ministry of Health.

The Ministry of Health will notify the appropriate staff in the Ministry for Primary Industries so that further investigation of the source can be undertaken.