A ProMED-mail post
Date: Mon 3 Sep 2012

An alveolar hydatid cyst, the intermediate stage of _Echinococcus multilocularis_, was removed from a pet canine in British Columbia in Canada. This particular region of Canada is generally free of _E. multilocularis_, indicating either the introduction of a new strain of _Echinococcus_, or a range expansion of a strain present 600 miles [966 km] from the identified location. Molecular epidemiologic techniques on the tissue identified the cestode as a European strain, presumably the result of a recent introduction from Europe via translocation of dog(s) or an earlier translocation through the red fox.

Subsequent investigations of wildlife definitive hosts from central British Columbia revealed that this strain is established in red fox and coyote in this region, suggesting that this parasite has emerged in a newly endemic region of North America (K Gesy, E Jenkins, H Schwantje, unpublished data). This has significance for both public and veterinary health, as _E. multilocularis_ is the cause of alveolar hydatid disease in people and other aberrant intermediate hosts and is emerging worldwide as a result of anthropogenic translocation and changes in climate, landscape, and wildlife-human interfaces.

The whole report is available at

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[ProMED-mail has posted some interesting insights and corrections regarding information on _E. multilocularis_. Readers are encouraged to review ProMED-mail post 20110303.0699, especially the 2nd letter and the moderator's comments regarding the human health hazards of this tapeworm.

Some excellent photomicrographs of the tapeworm in various life-stages may be found at

_E. multilocularis_ is a tapeworm involving a definitive host and intermediate hosts. Both of these hosts are required for the tapeworm during various stages of its life cycle. The definitive host, where the adult tapeworm resides, is usually a canine (fox, dog, wolf, etc.). The adult tapeworm attaches to the intestinal mucosa and produces a vast multitude of eggs, which pass out in the feces of the animal.

Intermediate hosts are rodents (mice, rats, etc.). These animals unwittingly ingest the parasite eggs, which develop in the animal's body in the lungs, liver, and other locations of the body. These eggs develop into multilocular cysts. When these infected secondary hosts are ingested by the primary host, then the life cycle can be completed as the worms develop to adulthood and the cycle begins again.

Humans may become infected through infected food or water. Humans are generally dead end hosts. The life cycle of the tapeworm may not be completed in a host that is not part of the general life cycle.
However, the disease can have many complications in humans. The larval form may cause alveolar echinococcosis, which is a highly lethal helminthic disease in humans. This may be a trigger for the induction of hepatic cancer.

Your pet should have a regular exam for parasites by your veterinarian. Please follow the veterinarian’s recommendation for treating tapeworms and other parasites in or on your pet.

If you believe you have been infected with a parasite, seek out a human parasitologist within the medical community.

Some epidemiological evidence has suggested that _E. multilocularis_ may be spreading through the Midwest portion of the United States. If this is true, then it may be spreading in Canada as well.

A HealthMap/ProMED-mail interactive map of Canada may be found at <http://healthmap.org/r/1*kk>. [Mod.TG]

[see also:
Echinococcus multilocularis, fox - Denmark: (SD) OIE 20120419.1106800 2011
Echinococcus multilocularis, fox - Sweden (06): (KO), OIE 20110618.1858
Echinococcus multilocularis, fox - Sweden (05): (SD) new area, OIE 20110517.1497
Echinococcus multilocularis, fox - Sweden (04): comments 20110303.0699
Echinococcus multilocularis, fox - Sweden (03): comment 20110227.0648 Echinococcus multilocularis, fox - Sweden (02): comment 20110224.0606 Echinococcus multilocularis, fox - Sweden: OIE 20110219.0543 2010
Echinococcus, coyote & fox - USA: (ID) 20100211.0485 2007
Echinococcosis, foxes - France 20071222.4114]