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PREVENTION OF HYDATID DISEASE

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Hydatid disease of man is also called echinococcosis. The causative agent is the larval stage of a tapeworm of dogs (*Echinococcus granulosus*). The adult stage of this tapeworm is very small and difficult to see; the eggs are microscopic and are not visible. These tiny eggs are sometimes transferred from the dog (hair to hand) or environment (grass, dirt to hand) to a person's mouth (wiping lips, chewing fingernails). After the eggs pass into the digestive tract, they penetrate the gut wall, enter the bloodstream and are carried to the liver, lung, etc. Here they attach and form cysts which will gradually increase in size until they are surgically removed or until the person dies.

Man is considered a “dead end” host in this disease because the infection doesn't spread from an infected person to another person, or even to a dog. The intermediate host is sheep, where the cysts are formed in them just as in man. However, if dogs are allowed to eat the internal organs of infected sheep the dogs become infected and the larval tapeworms develop into adults. That dog begins to shed eggs from its intestinal tract within about 7 weeks and the cycle repeats. Dogs may also be affected by other tapeworms but these are much larger and easily visible.

Parasites, in general, survive by sheer masses of numbers and that is the case with hydatid disease. A heavily infected dog may shed thousands of eggs each day. Only ONE of these has to get from the tail hair to the dog muzzle, to a person's hand, to mouth and it can result in hydatid disease for that person.

Sanpete County was identified in the early 1970's as being persistently infected with this tapeworm, in both the sheep and dogs. Control efforts have reduced the incidence of hydatid disease in Sanpete county but have not eradicated it. People in other areas of Utah should not feel they are without any danger. Sheep and dogs from Sanpete have been transported to all parts of the state and it is very likely that the Echinococcus tapeworm has gone along for the ride. It just needs the right circumstance and time for it to show its effect.

Control is most effective when implemented on a community, area, or county-wide basis. It must include:

1. Deworming of all dogs that MAY have eaten uncooked sheep viscera (internal organs). This must be repeated at later times after any possible exposure.
2. Disposal of dead sheep and sheep viscera to prevent dogs access to eating it.
3. Elimination of stray dogs.

4. Control of all dogs to keep them from defecating in and around children's play areas.
5. Washing hands after handling or playing with dogs.

Not all deworming products are effective against tapeworms and not all that are available for the common tapeworms are effective against Echinococcus. At least three products are available which are highly effective against Echinococcus and they are very safe for use in dogs. One of these products should be used on any dog that has eaten raw sheep viscera. For dogs which may continue to have periodic exposure to sheep carcasses, consult with your veterinarian and plan a routine deworming program for as often as once every 4 to 6 weeks. The three products which have been shown to be effective are:

DRONCIT (from Miles Animal Health Products): A prescription product available as an injection or tablet. The active ingredient is praziquantel. The label indicates usage against Echinococcus as well as the common tapeworms.

VERCOM (also from Miles): a prescription product available as a paste. The active ingredients are febantel and praziquantel. The label only indicates usage for roundworms, hookworms (febantel) and common tapeworms (praziquantel). But research has shown it to be highly effective against the Echinococcus tapeworm as well (Andersen, et al., AJVR 46:253-255 (1985)).

CESTEX (from SmithKline Beecham): A prescription product available as a tablet. The active ingredient is epsiprantel, which is very closely related chemically to praziquantel. The label only indicates usage for the common tapeworms but research has shown it to be highly effective against the Echinococcus tapeworm as well (British Veterinary Journal (1989)145:384; Research in Veterinary Science (1990) 49:378-379; and RVS (1991) 51:332-334).

In the past, repeated deworming has not been strongly encouraged by some because of the fear it would remove the emphasis from the other control measures and also give a false sense of security. However, the products now available are much more effective against Echinococcus than those of 20 years ago. Greater emphasis should be given to their routine and continued use and we should be grateful for the availability of more than one product. The other aspects of a community control program must still be emphasized and implemented. But families who own dogs should know that they can implement a control program of their own to give them a reasonable degree of security against hydatid disease, even if others in the community are not complying with the total program.

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