Echinococcus Granulosus

Echinococcus granulosus, also known as the dog tapeworm, is a cestode transmitted to humans through dog feces. When its eggs are ingested, echinococcus leads to hydatid cysts in the liver, which themselves lead to surrounding necrosis and fibrosis. Caregivers should be careful because if these cysts are broken, anaphylaxis can occur from the released antigens. The preferred treatments are albendazole or surgical removal of the cysts.



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Pathophysiology

Cestode (Tapeworm)
Crest-toad with Tapeworm
Echinococcus is a cestode, or tapeworm, whose length ranges from 2-7mm.

Ingestion of Eggs from Dog Feces
Eggs with Dog Feces
This parasite is transmitted to humans through the ingestion of echinococcus eggs. These eggs are found in the feces of the definitive host, dogs. Thus, proper hygiene helps prevent the spread of Echinococcus granulosus.

Hydatid Cysts in Liver
Hydro Cyst-sisters in Liver
Once infected, this infection causes slow-growing cysts to form in the liver (rarely, the lungs, spleen, and heart). These are called hydatid cysts and are filled with clear, fluid-containing antigens. Depending on their size, these cysts can be asymptomatic or present as an uncomfortable mass.

Fibrosis and Necrosis
Fibrous-sack and Necrosis-crow
Due to cyst growth in cases of Echinococcus granulosus, the body can often react with fibrosis and necrosis in the infected tissue.

Anaphylaxis if Antigens Released
Anvil-axes when Ant-gem is Released
Caregivers should be cautioned when examining and treating this infection; if cysts rupture while in the body, from surgical extraction or bodily trauma, the patient will go into anaphylactic shock and develop high fever, pruritis, edema, and breathing difficulties.

Treatment

Albendazole
Abe-Bond
Albendazole is the most common pharmacologic treatment used against echinococcus infection. It is typically combined with open surgical removal of the cysts.

Surgical Removal
Scalpel
If the cysts are in an accessible location, open surgical removal of cysts is used to treat patients infected with echinococcus.

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