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Anisakiasis in Glennallen Resident

An acute case of anisakiasis was diagnosed in a Glennallen resident who coughed up a worm five days after eating raw halibut with her family. Her physician alertly obtained the worm and drew acute and convalescent sera on the four family members. A blood count drawn on the patient on June 10, showed 920 eosinophils.

The worm was tentatively identified as Anisakis by the state laboratory. An expert in tropical medicine at the University of Hawaii also speciated the worm and ran the acute and convalescent sera from all family members for IgG and IgE antibodies specific for Anisakis.

On November 10, the worm was confirmed to be Terranova (Phocanema) decipiens which is a third stage larvae of an anisakid parasite whose adult stage is in seals and whose larval stage is in fish.

Serum samples taken on the four family members were tested by ELISA for Anisakid- specific IgE antibody and by counterimmunoelectrophoresis against Anisakis larval antigen for IgG antibody. All family members were negative for IgG antibody. IgE tests were positive from the acute case and her husband who had no symptoms. Both children were negative for IgE.

No chemotherapy for anisakiasis is advised unless bleeding is found at which time the patient should be thoroughly evaluated. Most individuals produce only one worm, and once this worm is coughed up there should be no further complications.

The family Anisakidae contains a number of ascarid parasites in marine mammals that produce a syndrome of eosinophilic gastritis in persons accidentally infected while eating raw fish. These parasites (Anisakis and Phocanema) normally reside in the intestines of sharks or marine mammals such as whales, dolphins, and seals. Their eggs are passed into the water where larvae hatch and are ingested by planktonic crustacea. Many other sea fish act as secondary hosts and the infected larvae become encysted in their body cavities. Human anisakiasis occurs frequently in areas where raw fish is a common part of the diet.

The larvae burrow into the bowel wall and induce a vigorous eosinophilic inflammatory response. Symptoms, if any, may begin almost immediately or may appear months later. If worms penetrate the bowel wall and enter the peritoneal cavity, peritonitis, partial intestinal obstruction, or other acute abdominal symptoms may result. Eosinophilia is a frequent finding in anisakiasis. Many cases are diagnosed after surgery for resection of the affected region of the bowel or stomach. In a few cases in which diagnosis has been strongly suspected, visualization of the larvae in the gastric mucosa and removal has been achieved using a fiberoptic gastroscope.

The larvae are able to survive many common methods of smoking and marinating raw fish. Thorough cooking or freezing (-20°C) are two effective methods for killing the parasite. Migration of parasites from the body to the muscles of fish can take place even after the death of the fish. Commercial operations often clean saltwater fish as soon as they are caught and maintain them on ice until processing occurs to help reduce the parasite burden in the muscles of these fish by blocking this migration.

(Reported by Roscoe Van Camp, M.D., Glennallen. Special thanks to Dr. Robert S. Desowitz, PhD, DSc, University of Hawaii at Manoa)