

Causes of Dropsy Symptoms

What are the causes of the symptoms of dropsy?

By Stephen M. Meyer

Q. I keep goldfish outside in a garden pond that holds about 1,000 gallons of water. This spring I noticed that a number of my fish had swollen bodies and their scales stood out in a funny way that made the fish look like pine cones. The salesperson at the aquarium store told me that the fish had dropsy. He said it was caused by an internal bacterial infection, but there was nothing I could do to cure the fish. I noticed, however, that a number of medications on the store's shelves claimed to cure dropsy.

When I asked a friend of mine about dropsy, he said that it was caused by an incurable virus. He advised me to destroy all of the infected fish. Someone else said the problem could be a tumor. Then I came across a magazine article that said that dropsy was caused by constipation. The article recommended that I try giving the fish a laxative! I am really confused by all this conflicting information. What is dropsy? Do my fish have a treatable bacterial problem, an incurable virus or are they simply constipated?

A. It is little wonder you are confused. This is one of those instances where there is some truth in everything you have heard. Let's try to clarify things a bit. Dropsy is not a single disease (although you may find occasional references to a disease known as abdominal dropsy of cyprinids — carps and minnows). It is a condition produced by any one of a number of diseases. Thus, observing dropsy does not lead to an obvious diagnosis or treatment.

Dropsy — referred to in professional texts as ascites — is the accumulation of fluids in the visceral cavity of a fish. This fluid buildup causes the abdomen to swell. In severe cases the distention is so great that the scales stand out from the body. When viewed from above the fish takes on a pine cone-like appearance.

In North American ponds, the most common cause of dropsy is internal bacterial infection. Several bacterial diseases — including aeromonad disease (*Aeromonas hydrophila*), pseudomonad septicemia (*Pseudomonas fluorescens*) and vibriosis (*Vibrio anguillarum*) — can result in dropsy. To the best of my knowledge, studies of animals involved in outbreaks of disease among koi on the east and west coasts of the United States all revealed one of these bacterial causes.

The bacteria that cause these diseases are ubiquitous to the aquatic environment. Therefore, in an otherwise healthy fish population, any of these bacteria may be present without the fish showing any signs of disease. The delayed appearance of disease is especially likely in water temperatures below 60 degrees Fahrenheit. However, stressing the animals — which may include merely adding new fish to an existing community — can result in a sudden deadly outbreak. Bacterial-induced dropsy in koi and goldfish occurs most often in spring as water temperatures rise. It may also appear at any time during the year after extensive handling or overcrowding.

Chronic forms of these internal bacterial diseases may show symptoms other than dropsy. Reddened patches on the skin, and around the fins, anus and mouth, are common. Boils or ulcers may appear on the skin. Exophthalmos (pop-eye) is another associated sign.

Unfortunately, by the time an infected fish has blown up like a football, there is little that can be done to save it. Extensive damage has already occurred to internal organs, and infection is rampant throughout. The fish should be destroyed. At this point, you are best advised to figure out what triggered the disease outbreak and attempt to contain it. Poor water quality, overcrowding, handling the fish and poor nutrition are the most likely villains.

If caught in the early stages, these diseases can be treated successfully with a combination of improved water quality management and the use of antibiotics. If only a few pond fish seem to be diseased, they should be isolated in a hospital aquarium. A sick fish in the backyard pond does stress other fish. It also serves as a virulent breeding ground for the bacterial pathogens, making it harder for the other fish to fight off the disease.

Obviously, if the general population is sick, the fish should be treated in the backyard pond. A 50-percent change of the pond water is essential — these diseases are strongly associated with waters heavily laden with dissolved organics. Keeping the fish in superb-quality water conditions can greatly aid in recovery. So can a significant reduction in the fish load. Antibiotic treatments will have only temporary effects if water quality is not improved.

If antibiotics are used, oral or injected administration is absolutely required. Adding drugs to the backyard pond water will not have any therapeutic effect. Oxytetracycline seems to have the broadest application of the drugs readily available to the hobbyist. When injected or fed at 75 milligrams of drug per kilogram of fish per day, for 10 days, it has proven very effective. Unqualified hobbyists should never attempt to inject medications. A medicated feed combination of ormetoprim and sulfadimethoxine (sold under the trade name of Romet-30) has been quite successful in halting devastating outbreaks of aeromonad disease among koi.

Dropsy may also result from viral infections. A disease known as spring viremia of carp (SVC) — a rhabdovirus — is particularly widespread among carp (including goldfish and koi) populations in Europe. (There is a related disease that infects trout, which is transmittable to goldfish, known as viral hemorrhagic septicemia.) As is true for the dropsy-inducing bacterial diseases, SVC may exist in dormant form in a fish population and only become evident when stress triggers an outbreak. As the name implies, the warming temperatures of spring are the most common trigger. In direct contrast to the bacterial diseases, SVC also seems to become dormant when water temperatures exceed 70 degrees Fahrenheit.

SVC can spread to other fish through water. There is also evidence that the virus spreads via parasites, such as fish lice. Obviously, quarantining new fish for at least 30 days is essential to containing this disease, because the stress from quarantining may force a dormant case of SVC to manifest itself. There is no effective treatment — diseased fish should be destroyed.

I am unaware of any cases of SVC in North America. Thus, unless you purchased your fish from a European supplier, they do not have SVC. With the increased shipping of ornamental pond fish from Europe to this country, however, it is probably only a matter of time before outbreaks of SVC are identified here.

Lastly, dropsy-like symptoms may be caused by a number of other problems, including tumors, tapeworms, impacted egg masses and blocked intestinal passages. Each of these can be remedied by the proper treatment: surgery, de-worming and so on. Frequently, secondary internal bacterial infections follow these problems if they are not dealt with quickly.

Owing to the widespread use of dry pelleted fish foods, constipation is a serious problem in ornamental fish ponds. Remember that the fish's digestive tract was developed to handle fish food that is 90 percent moisture and 10 percent solids. Pellet fish foods are usually 10 percent moisture and 90 percent solids. When semi-dry pellets enter the intestines, they absorb water and expand, jamming in the many twists and turns of a goldfish's (or a koi's) digestive tract. Constipation can be relieved by the addition of 0.3 percent magnesium sulfate salt to the diet. Chopped earthworms, spinach and other vegetables also act as laxatives.

To sum up, unless you obtained your fish from a European supplier, the problem is most certainly not SVC. If more than one or two of your fish exhibit dropsical signs, then it is very unlikely that the problem is tumors, tapeworms, constipation and so on. This implies that the problem is likely to be one of the internal bacterial infections described above.