Introduction

Black Spot disease is caused by digenean trematodes (flukes) that are members of the Diplostomatidae and Heterophyidae families. In freshwater fish, Black Spot is caused by *Uvulifer ambloplitis*, *Crassiphiala bulboglossa*, *Neascus spp.*, or *Apophallus donicus*. In marine fish, Black Spot disease is caused by *Cryptocotyle lingua*. When fish become infected with this parasite, they present with raised black nodules where the parasite has encysted itself in the skin of the fish.

Species Affected

Black Spot disease can affect both marine and freshwater fish. Black Spot disease cannot infect humans. Cook fish thoroughly to deactivate the parasite, parasite infection does not affect quality of the meat.

Clinical Signs

Small black nodules usually no larger than 1mm appear on the skin, fins, and sometimes flesh of infested fish. When the parasite becomes encysted in the skin and muscles of fish; the fish produce melanin pigment in that area as a response to the parasite. Infestations are non-pathogenic.

Transmission

Fish that inhabit bodies of water with parasitized snails are at the highest risk for this disease as they are an intermediate host. Fish become parasitized by free-swimming cercariae (larval form of the trematode class of parasites). Cercariae embed themselves in the skin, flesh and fins of fish where they become encysted and continue to develop into their final larval form called metacercaria. Fish-eating birds and mammals then eat parasitized fish. Parasite eggs are released within feces into the water. When eggs reach the water, they will hatch into miracidia that will go on to parasitize snails.
Diagnosis

Presumptive diagnosis can be made by observation of raised black spots on the flesh of fish. Diagnosis is confirmed with wet mounts or histological sections.

Epidemiology

Black Spot disease in freshwater fish is caused by the metacercaria stage of nematodes including *Uvulifer ambloplitis*, *Crassiphiala bulboglossa*, *Neascus* spp., or *Apophallus donicus*. In marine fish it is caused by *Cryptocotyle lingua*.

Additional Information

- Black Spot Disease (Neascus and Heterophyids), Diseases of Wild and Cultured Fishes in Alaska
- Neascus (Black spot disease) | Minnesota DNR (state.mn.us)
- What are those spots in my fish? - MSU Extension
- Flukes (Black, Yellow, and White Grubs, Eye Flukes) | Missouri Department of Conservation (mo.gov)
- Parasite Ecology of Fish with Black Spot Disease (liberty.edu)
- Genetic parameters for black spot disease (diplopestomiasis) caused by *Uvulifer* sp. infection in Nile tilapia (Oreochromis niloticus L.) - ScienceDirect