Fascioloides magna in a feral pig

WL Schwartz; DB Lawhorn; and E Montgomery

A hunter observed irregular deposits of black pigment in the lungs and pleural cavity, liver, serosal surface of the stomach, and the subcutaneous adipose tissue of the abdominal wall of a feral pig he killed in Dimmitt County, Texas. The hunter was preparing the carcass for human consumption. After the samples were submitted to the laboratory, we observed adhesions and black pigment in a section of subcutaneous adipose tissue. The pigment was nonodorous and had a pasty consistency.

Microscopically, we observed proliferation of mesothelium and collagen with infiltration of eosinophils, lymphocytes, plasma cells, and macrophages in sections of subcutaneous adipose tissue stained with hematoxylin and eosin. We observed many operculated parasite eggs, about 90–114 μm and 50–70 μm wide, in the tissue and inflammatory infiltrate.

We found no adult flukes in these tissues, but the demonstration of black pigment and characteristic trematode eggs indicated a *Fascioloides magna* infection. Certain parasitologists think that the black pigment associated with *F. magna* is its excreta. The fluke probably feeds on blood and the pigment represents a breakdown product of hemoglobin.[1]

Life history

In the definitive host, white-tail deer *(Odocoileus virginianus),* adult *F. magna* are found in capsules within the liver that communicate with the bile ducts. Their ova pass to the lumen of the small intestine and are excreted with the feces. A ciliated larva (miracidium) develops within 2–4 weeks from an egg that falls into water. The miracidium enters the body of a snail and forms a sporocyst. The sporocyst grows, undergoes repeated divisions, and eventually forms rediae that enter the tissues of the snail. Second-generation rediae develop into other larval forms, the cercariae. The cercariae move from the snail tissues back into the water, migrate a short distance, encyst on the surface of an aquatic plant and become metacercariae, the infective stage. The host's small intestine digests the metacercarial cyst, releasing a marita. The marita penetrates the wall of the intestine and crosses the peritoneal cavity to the liver. The maritae bore into the hepatic parenchyma, mature into adult flukes, and begin laying eggs.

In animals other than white-tail deer (other cervids, cattle, sheep, goats, swine, etc.), *F. magna* capsules do not communicate with the bile ducts and immature flukes wander aimlessly and destructively in the liver and other tissues. Eggs deposited in these tissues are trapped without completing the life cycle. Pigs can become infected by feeding in pastures contaminated by affected white-tail deer.[2]

Slaughtered animals may be salvaged for human consumption if lesions are not widespread.[3] Affected livers should not be used for human consumption regardless of the extent of infection.[4]

References

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WLS: Veterinary Pathologist, Texas Veterinary Medical Diagnostic Laboratory, P.O. Drawer 3040, College Station, Texas 77841-3040. DBL: Extension Veterinarian, Texas Agricultural Extension Service, Clinical Associate Professor, Department of Large Animal Medicine and Surgery, College of Veterinary Medicine, Texas A&M University, 400 Research Parkway, Suite 150, College Station, Texas 77843. EM: Private Veterinary Practice, 2714-B Sprucewood, Bryan, Texas 77801.

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