Researcher identifies eye disease in canines

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Sinisa Grozdanic, assistant professor of veterinary medicine at Iowa State University, has identified and named an eye disease not previously known. The disease, Immune-Mediated Retinopathy, or IMR, causes loss of function in retinal cells and, in some cases, blindness in canines.

Grozdanic's findings are published in the March edition of *Veterinary Clinics of North America: Small Animal Practice*.

IMR is very similar to a previously known malady called Sudden Acquired Retinal Degeneration Syndrome or SARDS.

Both diseases occur when the dog produces auto antibodies that attack the retinal cells. The antibodies mistake retinal cells for cancerous tumors or tissues that need to be destroyed.

In the process of attacking the retinal cells, the auto antibodies cause the retinal cells to lose function and the dog to lose some or all of its vision.

The difference between IMR and SARDS that Grozdanic identified is that the auto antibodies that attack the retinal cells in SARDS patients are produced in the eye. In the newly identified IMR, Grozdanic found that these auto antibodies are produced elsewhere in the dog and travel to the eyes in the blood.

This is a critical step in treating the disease because the source of the problem is better understood, according to Grozdanic.

"The whole purpose is to start to understand the disease better," he said. "The more we understand these diseases, the more proficient we will be developing new treatments."

Grozdanic says the evidence shows that approximately 2,000 cases of SARDS occur every year. Some of those cases may now be identified as IMR, and treated differently.

Treatment for IMR can have a relatively high success rate.

"In approximately 60 percent of the Immune-Mediated Retinopathy cases, we have been able to treat it," he said. "In some cases very successfully, in some cases moderately successfully."

Since IMR has only recently been identified, there are no statistics on how many dogs this disease affects.

Grozdanic has also developed a test to differentiate the two types of retinopathy. Grozdanic shines colored lights in the dog's eyes to see if the pupils constrict. If the pupils constrict poorly while the doctor uses the red light, and have normal constriction when blue light is used, the patient most likely suffers from IMR. If the eyes respond to blue lights, but not red lights, then the diagnosis is SARDS.

Tests show SARDS-affected eyes have almost no electrical activity. IMR-affected eyes have some electrical activity, and the retinal cells are not destroyed but have only lost function. These are the retinal cells that Grozdanic thinks can function again now that the origin of the problem is known.

In his work with canine patients with IMR during the past few years, Grozdanic has restored sight in several dogs.

According to Grozdanic, these two diseases are similar to illnesses that afflict humans, so treatment for people may not be far off.

"This was a giant leap. We are getting better at understanding it, and based on this information, we may be able to modify and improve treatment of dogs and eventually human patients," said Grozdanic.

Source: Iowa State University