

The Animal Medical Clinic

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von Willebrand's Disease in Dogs

Von Willebrand's disease (VWD) is the most common inherited bleeding disorder of both man and animals. It is caused by a deficiency in the amount of a protein needed to help platelets (a blood cell used in clotting) seal broken blood vessels. The deficient protein is called von Willebrand factor antigen.

Contributing Factors

The avoidance of certain medications is critical for the dog with VWD. Drugs that may precipitate a bleeding crisis in dogs with this disease include the following:

Aspirin	Antihistamines
Phenylbutazone	Sulfa-based antibiotics
Ibuprofen	Estrogens
Ampicillin/Amoxicillin	Penicillin
Phenothiazine tranquilizers	Heparin
Theophylline	

Emotional stress is thought to precipitate bleeding in humans with the disease. The subjective nature of such a finding makes it difficult to know if there may be a similar association in dogs, although this remains a possibility.

Prevalence

About 50 breeds of dogs are known to be affected, but the Doberman Pinscher is the breed most commonly associated with this disease. Other breeds frequently affected with this trait are German Shepherd dogs, Poodles, Golden Retrievers, and Shetland Sheepdogs.

Of 15,000 Dobermans screened, more than 70% were found to be carriers of the disease. Fortunately, most of these are not clinically affected (i.e., we see no evidence of bleeding). However, the number of Dobermans with a history of bleeding appears to be on the rise. Although Dobermans are commonly affected, they usually have the mildest form of the disease. The average age at diagnosis for this breed is about 4 years.

One study showed that 30% of Scotties and 28% of Shelties had abnormally low concentrations of Von Willebrand factor. Chesapeake Bay Retrievers and Scotties are affected with the most severe form of the disease.

Causes/Transmission

The cause of VWD is an abnormality in the genetic makeup of the dog. There are no infectious agents (bacteria or viruses) that cause it.

Clinical Signs

Many dogs with VWD never show outward evidence of having the disease. Others may hemorrhage from the nose, vagina, urinary bladder, or oral mucous membranes; prolonged bleeding after trauma or surgery is common. Females may bleed excessively after giving birth. In affected dogs with uncontrolled hemorrhage, death may occur.

Diagnosis

The routine blood clotting tests are almost always normal in dogs with VWD. Special tests are needed to detect the disorder. A screening test, called the buccal mucosal screening time, may be performed in the veterinarian's office. Prolonged bleeding on this test can raise the suspicion of the disease, especially in breeds known to be at risk. For owners who wish to confirm the diagnosis, it is possible to determine the exact amount of von Willebrand protein present in the blood.

Owners of Dobermans often report that the pet has undergone routine ovariohysterectomy (spay) or castration, ear trim, and tail docking as a pup. An uncomplicated recovery from such procedures does not eliminate that possibility that a dog may be affected; some dogs go through several surgical operations when young but do not become obvious "bleeders" until later in life.

Treatment

In an emergency situation, transfusion of blood or fresh frozen plasma may stabilize the patient. The dog donating blood may be treated with a drug called DDAVP prior to blood collection; this will raise the level of von Willebrand factor in the donor's blood, an obvious benefit for the dog with VWD.

Some dogs with VWD are able to increase the amount of protein in circulation after the administration of DDAVP, although the response is variable. At this time, it is not recommended to use this drug on a regular basis. The drug is expensive, and not all dogs will respond to it.

The drugs listed above should be avoided when possible, but especially when the dog is in a bleeding crisis.

Prognosis

The prognosis is variable depending upon the severity of the disease, amount of blood loss, and response to appropriate treatment.

Prevention

Since many affected Dobermans will never have apparent bleeding problems, any recommendation to do routine testing is debatable. However, identification of dogs that have abnormal bleeding times can be very valuable if surgery is planned. Additionally, knowing that your dog is a carrier of VWD can be very important if an injury occurs.