Von Willebrand's Disease (vWD) Type 1

In brief

The clotting pathway is a complex process. The vWF glycoprotein complexes with factor VIII and both are required for platelet adhesion and preventing the rapid clearance of factor VIII. Von Willebrand's disease (vWD) is a bleeding disorder affecting multiple breeds and several genetic variants have been characterised. Type 1 is the mildest form of vWD in which the level of von Willebrand's factor is reduced though all the multimers are present. Many cases are subclinical but can be associated with an increased bleeding tendency after surgery or trauma. The disease is inherited in an autosomal recessive manner, though some carriers can have clinical signs.

Clinical overview

Type 1 von Willebrand's disease is the mildest form of vWD and while many dogs may be subclinical, some dogs may exhibit more severe clinical signs. Excessive bleeding may be observed after a trauma or surgery. Not all affected pups will exhibit the same severity of clinical signs as these are related to the amount of vWF present, which vary between affected individuals. An affected dog will have a normal PT/aPTT but have prolonged bleeding (which can be assessed using a buccal-mucosal bleeding time). When assayed, these dogs usually have low levels of vWF. Some carriers may show clinical signs though dogs with two copies of the mutation tend to be more severely affected. Medications known to interfere with clotting should be avoided. Some dogs may exhibit some improvement when treated with desmopressin acetate.

References

Online database
Online Mendelian Inheritance in Animals, OMIA (http://omia.angis.org.au/). Faculty of Veterinary Science, University of Sydney; OMIA001057-9615.

Scientific articles
Brooks MB, Erb HN, Foureman PA, Ray K. von Willebrand disease phenotype and von Willebrand factor marker genotype in Doberman Pinschers. Am J Vet Res. 62(3):364-369, 2001. Pubmed: 11277201.

Ackerman L. The Genetic Connection. Lakewood: American Animal Hospital Association Press, 2011.

Disease severity
Moderate

Clinical signs
- Bleeding tendency

Mode of Inheritance
Autosomal Recessive

Results of the genetic test are reported as follows:
Clear
Carrier
At risk

BLOOD DISORDERS

VON WILLEBRAND'S DISEASE (VWD) TYPE 1 (2/2)

Mutation(s) found in:

Barbet

Bernese Mountain Dog

Coton de Tulear (FCI and AKC registered)

Coton de Tulear (mCTCA registered)

Dobermann

Drentsche Partridge Dog

Dutch Shepherd Dog

Dutch Shepherd Dog - Longhaired

German Pinscher

Irish Red and White Setter

Kerry Blue Terrier

Kromfohrländer (FCI-registered)

Kromfohrländer (FCI-registered)

Kromfohrländer (ProKro-registered)

Kromfohrländer (ProKro-registered)

Kromfohrländer (non-FCI-registered)

Kromfohrländer (non-FCI-registered)

Manchester Terrier

Manchester Terrier - Toy

Mixed breed

Papillon

Phalene

Poodle (AKC)

Poodle - Medium size (FCI size standard) - Black, brown and white

Poodle - Medium size (FCI size standard) - Grey, apricot and red

Poodle - Miniature (AKC size standard)

Poodle - Miniature (FCI size standard) - Black, brown and white

Poodle - Miniature (FCI size standard) - Grey, apricot and red

Poodle - Standard (AKC size standard)

Poodle - Standard (FCI size standard) - Black, brown and white

Poodle - Standard (FCI size standard) - Grey, apricot and red

Poodle - Toy (AKC size standard)
Poodle - Toy (FCI size standard)
Stabyhoun
Terrier Brazileiro
Volpino Italiano
Welsh Corgi Pembroke
West Highland White Terrier