BELGIAN SHEEPDOG
(BELGIAN SHEPHERD-GROENENDAEL)

There are 4 varieties of Belgian shepherd- the Groenendael, Laekenois, Malinois and Tervuren. In Europe these varieties may be interbred and are not considered genetically distinct thus it is likely that the same genetic diseases exist in both. In the United States the Groenendael (known as the Belgian sheepdog), Malinois and Tervuren are recognized as separate breeds while the Laekenois is not recognized at all.

	DISORDER	INHERITANCE	REFERENCE	BREEDING ADVICE
A.	Corneal dystrophy - epithelial/stromal	Not defined	1	Breeder option
B.	Chronic superficial keratitis/pannus	Not defined	1	NO
C.	Persistent pupillary membranes			
	- iris to iris	Not defined	1, 6	Breeder option
	- all other forms	Not defined	6	NO
D.	Cataract	Not defined	1	NO
E.	Retinal atrophy - generalized	Presumed autosomal recessive	1, 2, 3	NO
F.	Retinal dysplasia - folds	Not defined	4, 6	Breeder option
G.	Micropapilla	Not defined	1	Breeder option
H.	Achiasmic optic nerves with nystagmus	Autosomal recessive	5	NO

Description and Comments

A. Corneal dystrophy- epithelial/stromal

A non-inflammatory corneal opacity (white to gray) present in one or more of the corneal layers; usually inherited and bilateral.

B. Chronic superficial keratitis/pannus

A bilateral inflammatory disease of the cornea which usually starts as a grayish haze to the ventral or ventrolateral cornea, followed by the formation of a vascularized subepithelial growth that begins to spread toward the central cornea; pigmentation follows the vascularization. If severe, vision impairment occurs. Pannus may be associated with plasma cell infiltration of the nictitans.

C. Persistent pupillary membranes (PPM)

Persistent blood vessel remnants in the anterior chamber of the eye which fail to regress normally during the first three months of life. These strands may bridge from iris to iris, iris to cornea, iris to lens, or form sheets of tissue in the anterior chamber. The last three forms pose the greatest threat to vision and when severe, vision impairment or blindness may occur.

D. Cataract

A partial or complete opacity of the lens and/or its capsule. In cases where cataracts are complete and affect both eyes, blindness results. The prudent approach is to assume cataracts to be hereditary except in cases known to be associated with trauma, other causes of ocular inflammation, specific metabolic diseases, persistent pupillary membrane, persistent hyaloid or nutritional deficiencies. Cataracts may involve the lens completely (diffuse) or in a localized region.

In the Belgian sheepdog, cataract most often occurs as a nonprogressive, triangular opacity in the posterior cortex.

E. Retinal atrophy-generalized

A degenerative disease of the retinal visual cells which progresses to blindness. This abnormality, also known as progressive retinal atrophy or PRA, may be detected by electroretinogram (not part of a routine eye screening examination) before it is apparent clinically. Limited breeding studies in the Belgian sheepdog suggest an autosomal recessive mode of inheritance.

F. Retinal dysplasia-folds

Linear, triangular, curved or curvilinear foci of retinal folding that may be single or multiple. When seen in puppies, this condition may partially or completely resolve with maturity. Its significance to vision is unknown. There are two other forms of retinal dysplasia (geographic, detached) which are known to be inherited in other breeds and, in their most severe form, cause blindness. The genetic relationship between folds and more severe forms of retinal dysplasia is undetermined.

G. Micropapilla

Micropapilla refers to a small optic disc which is not associated with vision impairment. Optic nerve hypoplasia refers to a congenital defect of the optic nerve which causes blindness and abnormal pupil response in the affected eye. It may be difficult to differentiate between micropapilla and optic nerve hypoplasia on a routine (dilated) screening ophthalmoscopic exam.

H. Achiasmic optic nerves with nystagmus

Achiasmic optic nerves with nystagmus have been described in a small family of black Belgian sheepdogs. Congenital nystagmus is the clinical sign most commonly noted. All retinal ganglion cell axons extend directly into the ipsilateral optic disc with no chiasmal ducussation. No optic nerve hypoplasia/micropapilla was noted in the animals studied and reported.

References

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