



## **Progressive Neurological Dystrophy of the Miniature American Shepherd/ Miniature Australian Shepherd**

Cause: Necropsies performed by boarded neuropathologists in several Universities in the United States and abroad have documented widespread lesions throughout the brain (Cerebrum and Cerebellum). These lesions seem to be progressive and without a pattern of occurrence.

### Symptoms:

- Symptoms reported by owners begin in the young adult dog. Usually at 2-4 years of age.
- Pacing gait with a wide rear stance and an arching of the back. This gait begins intermittently but progresses to be used more and more frequently until the dog has this abnormal pacing 100% of the time. Progression of the gait differs from case to case. However, bitches that have whelped litters seem to progress much quicker than males or bitches that are spayed.
- Dragging of the hindfeet and legs, one or both. You will notice a scuffing sound when they gait. The dogs progress to dragging their overturned rear feet causing hair loss and eventually sores on the top of the foot.
- Abnormal neurologically incorrect high stepping gait in the front legs. Appears that they are trying to step over something in front of them but there is nothing there.
- Head tremors. Can be minor and seem to come and go at first but progress to more frequent tremors that occur more vigorously if the dog has intent to do something.
- Mental dullness. The dogs can become slow to respond. Appear to have moments of daydreaming.
- Vision issues. They seem to have a lack of coordination between what they see and what they intend. Causing difficulty catching things or getting things into their mouth. They open their mouth and shift from side to side to take things when offered to them. May appear like depth perception issues.

- Incontinence. At first, they may lose urine while jumping or doing activities that require effort. Later they completely lose all control of their bladder. Similar progression occurs with bowel movements.
- Chronic Urinary Tract Infections. Respond to initial treatment but reoccur as soon as medication is stopped.
- Abnormal Liver values on bloodwork in later stages of the disease.
- Difficulty navigating up stairs. They appear to trip or bang their legs as they go up.
- Laryngeal paralysis. Causes coughing when exercising that becomes significant over time.
- Episodes of hemorrhagic diarrhea or severe intestinal upset that usually requires veterinary intervention.

Most dogs start with just a few symptoms that progress over time. Progression of developing all of these symptoms depends on whether the dog is euthanized due to mobility issues early on. Dogs that are not euthanized eventually succumb to respiratory failure.

The veterinary neuropathologists and veterinarians that have encountered affected dogs and been able to gather information surrounding these cases strongly believe there is a hereditary component to the disease. To date no study has been completed.

MAS exhibiting symptoms of this disorder have been reported in every breeding lineage in the United States. The only lineage where it has not appeared are lineages utilizing AKC Australian Shepherd show lines that were transferred over to MAS. Some lineages have a higher incidence of occurrence. The only explanation for the widespread occurrence across lineages would be if this originated at the infancy of the breed back in the 1960s. Unknowingly this could have been passed along innocently in the beginning. As programs progressed and began linebreeding/inbreeding to set specific lineages the disorder was seen more frequently. As I stated, the disease does appear more frequently in certain lineages but has been reported in all lineages here in the states. There are dogs that appear in all pedigrees of affected dogs but you have to track back over ten generations to find the commonalities.

\*\*\*\*The more pressing issue is where do we go from here?\*\*\*\*

- EDUCATE!!! It's important that as many MAS breeders as possible are aware that this disease exists. The more breeders are aware the more likely we can eradicate

it. Breeding programs should be adjusted accordingly. If you see something suspicious you should alert your veterinarian that this exists in the MAS and should be on the rule out list for diagnosis.

- Report. This is where things get difficult. Remember, you as a breeder didn't knowingly breed this!! This disease began generations ago. Anonymity can be important to some breeders for the integrity of their program. Don't let that stop you from getting a necropsy done by a Board-certified Neuro Pathologist at a teaching University. Medical records are private unless released by the owner. If you don't wish to release results that's ok but if there is a study in the future these necropsies will be invaluable. And if it is identified on necropsy it will help you decide how to move forward in your own program.
- Ask questions!! I've been asking people hard questions and getting denied answers for 13 years! But I still ask and have gotten many answers and information from people that will be necessary to move the breed forward free from this disease. Several breeders that have given me solid information about this disease are now deceased. If we don't discuss this the information leaves with every generation of breeder that leaves the breed.
- Understand that this is happening TODAY in the United States. I hear many breeders say it's only overseas or it was happening in the past. That is not factual information. People are reporting and getting positive necropsies for this disease NOW in the United States. The affected dogs are not from backyard breeders or puppy mill dogs. This disease is active in current breeding lineages. The dogs affected overseas are offspring of dogs from the United States.

As breeders of the MAS we all have different ideas as to what is best in our respective programs. We aren't always in agreement with breeding decisions, showing decisions, or even how to move forward to the future. However, I am confident that not one of us wants to see our MAS afflicted with something so devastating as this. In this one thing we have the duty as wards of the breed to work together and help each other. If we do the Miniature American Shepherd that we ALL know and love will only benefit from it.

Written by: Tammy DeVito 12/5/2022

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