

Summary of lecture about Alaskan Malamute Polyneuropathy, given by Lars Moe for the Norwegian Alaskan Malamute breeders in 1987.

Written originally in Norwegian by breeder Tove Tveiten

Translated into English by Turid Teigen(2011)

Lars Moe works at the clinic at the Norwegian School of Veterinary Science. He bumped into the first Alaskan Malamute with polyneuropathy in 1976. At the time it was an unknown disease, and Moe became interested in it. Today we therefore know quite a bit about this disorder.

The first symptoms are usually noticed when the puppy is 12-14 months old, but often you can see signs when it is 6-8 months old. The first thing you notice is the poor stamina. The condition worsens gradually and you can see clear signs in the dog's movements:

- unsteady / shuffling movements
- often sits down
- rear collapses after rather small efforts
- after some rest, the dog can rise to its feet again, but with difficulties
- in the worst cases, the dog does not rise

The dog will also have difficulties breathing. It clears its throat and coughs a lot, because its diaphragm is not working properly. The pattern also shows that if you have patience with the sick dog, the paralysis will pass and the dog will get better and be able to function again - though never as a sled dog.

Moe showed two movies of dogs with this disorder. We saw clearly all the symptoms. We also saw that the different reflexes were reduced or completely ceased. But fortunately the dogs had clearly no pain.

A variety of treatments have been tried, such as various drugs, training of the dog, keeping the dog from exercising. None of this has yielded results.

Moe also gave an account of their neurological examinations on AM, performed at Ullevål Hospital where appropriate facilities exist. He found differences between healthy and sick dogs. The sick dogs have uncontrollable twitching of the hind legs. This also occurs during sleep and anesthesia. In healthy dogs this cannot be registered.

Moe has found that the cause of this disorder is a defect in the dog's genes. The primary changes are in the nerves, which provide no or weak impulses to the muscles. As a result of the disease, the dog also gets muscular atrophy (muscle wasting). There is good evidence this is an inherited disorder.

(Here different modes of inheritance are listed and explained and then concluded)

This disease seems to be inherited recessively, which means that both parents must carry the sick gene in order to produce sick offspring.

(More explanation of simple autosomal recessive mode of inheritance – I have not translated this as I consider it known to the reader)

The last four years we have not seen any new cases of polyneuropathy. Since the first case was discovered in 1976, we have had 10 spontaneous cases. This is a relatively small percentage (approx. 3%) of the AM registered in Norway, but Moe sees the importance of taking serious the breeding program in order to avoid further sick dogs and reduce the number of carriers of the defective gene.

With regard to the future breeding program, Moe says:

- Do not breed the sick dogs
- Do not breed littermates of sick dogs (75% risk of being carriers)
- Do not breed parents of sick dogs (100% risk of being carriers)
- Littermates of parents: Moe is uncertain if these should be bred.
- Avoid breeding dogs from the lines which have expressed the disease.

Moe said this disease can be hidden if you do not make test matings of apparently healthy dogs. We have the ability to clear the individual dogs by means of test matings. Moe has a female available if you have a dog that is relevant for breeding and which could be a possible carrier.

When asked if there is money to fight this disease, Moe said there unfortunately is little. By any test breeding puppies should be placed in a kennel rather than placed in different homes, but the Norwegian School of Veterinary Science has no such kennel. Some asked if the Norwegian Polar Dog Club or Norwegian Kennel Club could make funds available, but no decision was made.

Turid's comments 2011:

The early cases seen in Norway, were after dogs imported from the US. All except one came from Wakon Kennels. Therefore, the imports from Wakon kennels are hard to find in Norwegian pedigrees today.

Back in the early 80'ties, Lars Moe gave the Norwegian Breeding Board an overview over which of the first imports were carriers, and which were clear. The board approved combinations after offspring from carriers only if they were combined to non-carriers. Combinations between two dogs with a carrier in their pedigree, were not approved unless the carrier was at least four generations out (12.5% or less of the pedigree) on each side. Import restrictions to Norway were harsh, so very few imports were added to the gene pool during the remaining 80'ties and 90'ties, and the breeding board had a pretty good overview of the carriers.

After this, the disease was not heard of and no other cases were reported in Norway until 2002-3 when a male received the diagnosis at the Norwegian School of Veterinary Science. The sire of this male was an import from Canada. Lars Moe worked at the Norwegian School of Veterinary Science until 2010 – first as a neurologist, later as the principal. When giving a lecture at the Norwegian Alaskan Malamute Clubs Breeders Seminar in 2010, he said that no vet in Norway had contacted him about the disease until the case in 2002.

Around 2000, import restrictions to Norway eased and several dogs from abroad were used for breeding. At this point the carriers were so far out that the breeding board no longer put restrictions on combinations.