



Regarding tremor in barbetdogs

(with reservations for translation errors – the original report is written in Swedish)

The background to this report is that tremor (shaking) has been observed in offspring of two imported littermates. One sibling has symptoms, while the other is without symptoms. These siblings have together produced three litters, a total of 22 offspring, among whom tremor has been noted. The Swedish Barbet Club (SBBK) have, after consulting with a veterinarian specialised in veterinary neurology, formulated a questionnaire which was sent to owners of the parent animals and their offspring, ie 24 dogowners, in order to gain more knowledge on the distribution of the symptom. The veterinarian have thereafter conducted an examination on a barbet with symptoms in order to try to establish a diagnosis.

Tremor, which itself is a symptom, is difficult to diagnose in a race where the symptoms are not described previously, which is also what the investigating veterinary Cecilia Rohdin explained before the examination. It has been shown in studies in other breeds to be very difficult to detect abnormalities other than those that can be associated with the actual tremor itself. In the report the veterinarian writes that the tremor of the tested barbet is probably some form of so-called postural tremor. "Dogs develop symptoms at a relatively young age, and the symptoms seem to be worsening without the ability to work deteriorates. The conditions do not appear to disturb the dogs who live well with their tremor. There is reason to believe that there is a hereditary component in the development of this tremor, just as there are in humans with so-called essential tremor. " (See annex 3)

It is too early and uncertain for SBBK to be able to comment on how the symptoms will develop as the majority of the affected dogs are young. The club should, according to the examining veterinarian Cecilia Rohdin, do a follow up on the dogs, "Keep in touch and follow these dogs, and observe to what degree their symptoms progress?" SBBK suggest that we follow Cecilia Rhodins advice and do a thorough follow-up on affected dogs in about 2 years to see if the tremor have changed and whether it affects the dogs' quality of life. As the diagnosis is not yet assured a follow-up will be even more important in trying to establish a diagnosis /cause.

SBBK have studied the summary of the survey responses (see annex 1 and 2), which shows that tremor is present in the surveyed group. Dogs with symptoms are trembling in front and behind, which mainly seems to occur during and after any kind of exertion and excitement. Seven, of the nine survey responses, indicated that the estimated degree of shaking as a second in a three-point scale. The following may also be inferred from the survey responses:

- We know the status of 21 of 24 concerned dogs. 9 of these 21 dogs (43%) have reported tremors.
- In the oldest litter, where the dogs were born in 2010, 5 of 9 dogs (55%) have reported tremors. In these offspring the symptoms debuted at the age of 1 or 2 years.
- In the other two litters, born 2012, two dogs (40% of those with known status) in one litter have developed tremors in puppy age, while it has been noted tremor in one dog (20% of those with known status) in the second litter. Given the dogs' young age, it is especially important with a follow-up.
- Tremor is found in the offspring of two parent animals who are littermates. One of the siblings have symptoms, the other is without symptoms. The sibling without symptom has mated with another asymptomatic and unrelated dog, but pairing yielded offspring with tremor.

In discussions with respect to all breeding within the breed, attention should be paid to the fact that the Barbet is a breed with a very small population. In the current situation, there are only about 160 individuals in Sweden, which makes the breed very vulnerable. The club's basic position is that we should not breed dogs with diseases /symptoms that can be passed on. We believe that it is always important to make responsible breeding priorities to the greatest possible extent to assure us of a future viable population with good and sound genetic status.

The uncertainty about the development of tremor-related problems, and its impact on the future of the breed, feels significant today. SBBK interprets the responses as an indication that the symptoms are hereditary. The issue is further complicated by the fact that two asymptomatic individuals has given offspring with tremor. SBBK perceive that there is a risk that symptoms will spread further as the parent animals and their offspring make up about 15% of the total number of barbets in Sweden. With the above in mind SBBK recommend caution with regard to breeding, until the younger dogs have reached an advanced age, and when a more complete evaluation can be made.

The swedish barbetclub wish that owners of concerned dogs should make contact with SBBKs breeding council, for consultation and advice, before any planning of pairing is made. The contact is also important in terms of knowledge sharing and further follow-up work. We welcome any questions or comments and wish to take part of dog owners' experiences.

SBBKs breeding recommendations:

Based on the knowledge and information we have today, and after consideration of risks, the swedish barbetclub recommend to refrain from breeding with dogs that have tremors.

For breeding with dogs without symptoms, which are closely related to dogs with visible tremor, we would urge caution. This means that, for example, delaying any breeding debut. We also advise to take into account the indication of heritability and monitor the development as the dogs get older.

2013-03-25

The swedish barbetclub - SBBK

- Annexes':
1. Summary of survey responses regarding tremor in barbetdogs
 2. Schematic illustration of the occurrence of symptoms (tremor)
 3. Report of Investigative veterinarian - specialised in veterinary neurology at SLU*

Consulting team to SBBK in this matter, conclusions and recommendations:

A professor and researcher in Small Animal Sciences at SLU, and veterinary consultant to SKK**.*

*A veterinarian specialised in veterinary neurology at SLU**

*The breeding committee at SKK** – i.e their breedingconsultants and expert researchers in genetics.*

**SLU - Swedish University of Agricultural Sciences*

***SKK – Swedish kennelclub*

(Additional information in the english version)

Summary of the questionnaire concerning tremors in barbet

Total number of questionnaires that were sent out: 24 (including 1 abroad)

Total number of incoming answers to the questionnaires: 21

Unrecorded: 3 unanswered questionnaires

Of the 21 responses received 9 answer that the dog has tremors.

5 of these are males, 4 are females

Age of dogs with symptoms

- 1 dog born in 2007 (breeding bitch)

- 5 dogs were born 2010 (born in a litter of 9 puppies)

- 3 dogs born 2012 (born in two litters - a total of 13 puppies)

In what situations have the owners noticed shaking/trembling in the dog? (Several options could be ticked)

After exertion (5 of them)

During activity (5)

The excited states (5)

At rest (1)

If / When traveling by car (2)

In what/which bodypart on the dog does the shaking occur? (Several options could be ticked)

Tendon (6 of them)

Back legs (6)

(Options also included the head, tail and body, but no one has noticed tremor in these bodyparts)

To what degree is the shaking noticeable?

Barely noticeable (1 of them)

Apparent (7)

Very clear (1)

How often does the shaking occur?

Daily (1 of them)

A few times per week (6)

A few times a year (2)

At what age did the shaking appear for the first time?

At puppy age: (3 of them)

Under 1 year of age: (1)

At 1 year of age: (3)

At the age of 2 years (2)

Have the shaking increased or decreased with age?

They have increased (1 of them)

They have decreased (2)

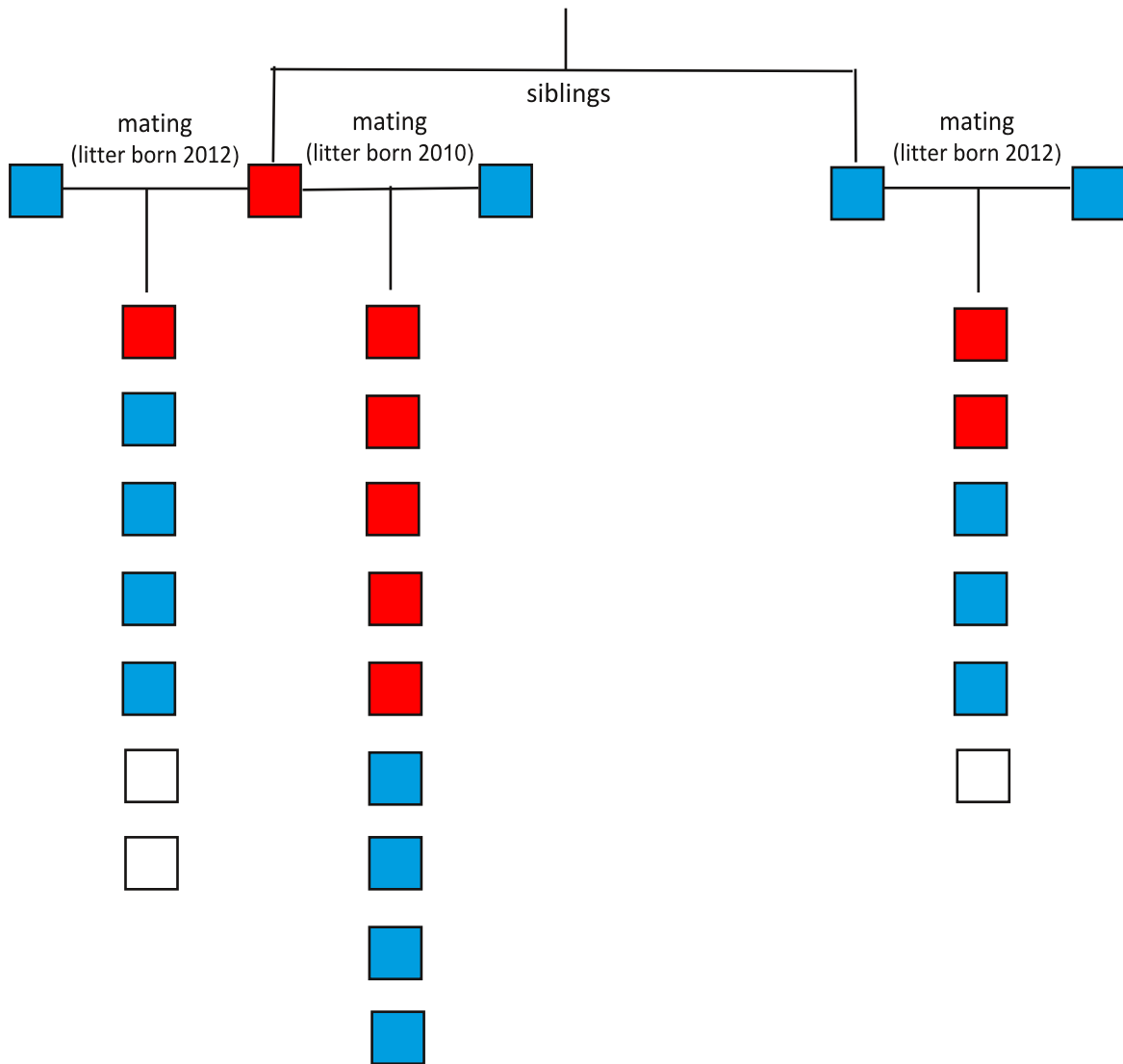
They have remained unchanged (5)




Unanswered (1)

Is there anything that your dog avoid doing?

Yes (1 of them)

No (8)



-  dog with symptoms
-  dog without symptoms
-  dog of unknown status

Schematic illustration showing family relationships and the occurrence of symptoms (tremor) according to the survey responses per 2013-01-28

Report from veterinary Cecilia Rohdin after the examination of a barbet, at the Albano Animal Hospital in Stockholm on the 13th of December 2012

(The situation has changed somewhat when additional survey responses (with partly divergent responses) have been received after the report was written. At the time of writing the responses show that 9 dogs have developed symptoms. SBBKs notes)

"Six Barbetowners had responded to the questionnaire about the tremor that their dogs show symptoms of. All of the dogowners perceived their dogs to be healthy except that their legs were shaking. All the dogs had begun to shake before the age of 2, two individuals showed tremor as puppies. 1/3 had shaking in the hindlegs, 1/3 of them in the frontlegs and 1/3 in both the hind- and frontlegs. All owners felt that tremors were associated with arousal and any kind of tension. The shaking occurred when one of the legs were relieved but still had contact with a surface. The leg did not shake when the dog burdened the leg to the full extent, nor could tremor be observed in resting or during exercise (in movement). The owners agreed that the dogs did not seem to be bothered by the shaking and it did not affect in any way its persistence or activity.

The examination of a 5-year old female Barbet with symptoms of tremor since 4 years back, showed nothing deviant at either general or clinical neurological examination. Tremor was seen at arousal and were more pronounced in the hindlegs but was also seen in the forelegs. The tremor was of high frequency and low amplitude. The bitch had normal (good) musculature and normal spinal reflexes, though tremors could be seen in connection with these tests. The tremor was apparent when the bitch was standing and relaxing any one of the legs, or sat and did not burden her front legs fully.

The electrodiagnostic test (electromyography) could show that the dog did not exhibit changes characteristic of either a myopathy (muscle disease) or neuropathy (nerve disease).

Tremor, which is a symptom, may be due to various causes. In humans tremors are divided into tremor visible at rest and tremor seen in activity. Tremor while resting is in humans often synonymous with Parkinson's disease. Parkinson's disease is not a dogdisease.

Humans and animals differ in that humans have very pronounced fine motor skills in their hands, while dogs are four-legged and has no pronounced fine motor skills. Therefore it becomes difficult to translate the different types of tremors which are described on the human to dog.

Postural tremor describes the different types of tremors that can be seen in a dog when it is in any form of activity that does not involve active movement (and consequently not in rest).

A specific type of postural tremor is orthostatic tremor. It is a kind of tremor that occurs when the individual is standing, and it ends immediately when moving or lying down and resting. This is described in the Great Dane breed as a rather troublesome state. You can often hear the changes when you listen to the musculature with stethoscope. Other individuals (I'd say most dogs who are not of the breed Great Dane with this type of tremor) is completely untroubled by their orthostatic tremor.

The type of tremor that we see in Barbet differs from what we normally call an orthostatic tremor by being more pronounced in a leg that is without burden. Furthermore no changes could be heard at auscultation of muscles (maybe that this study needs to be repeated).

In summary, it is likely that the tremor we see in the Barbetbreed is some form of postural tremor. Dogs develop symptoms at a relatively young age, the symptoms seem to be worsening without the dogs working ability being impaired. The condition does not give the impression of disturbing the dogs who live well with their tremor. There is reason to believe that there is a hereditary component in the development of this tremor, just as there are in humans with known essential tremor."

Addition from Cecilia Rohdin via mail:

"If there is to be a possibility to identify an underlying pathological change, I could see that an autopsy of an individual with symptoms (and then when a dog is put to death by ANOTHER reason such as age or possibly other disease) is probably the most effective way. It is, however, essential that this investigation is done in such a way that the nervous system immediately is taken care of after the dog has been put to death, and that the nervous system is managed by a veterinary with experience of such studies. It would probably be most convenient to contact Uppsala for this matter as I see it.

In the case with the Great Dane, a breed for which the orthostatic tremor is described, the dogs were examined completely with blood tests, electrodiagnostics, EEG, MRI of the brain and spinal fluid samples, and nothing abnormal could be detected, other than what could be related to the actual tremor itself.

Keep in touch and follow these dogs, how does their symptoms progress?"