Autoimmune Thyroiditis Seminar

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Abstract:
Hypothyroidism is the most common endocrine disorder of dogs, and up to 80% of cases result from an autoimmune disease that progressively destroys the thyroid gland (autoimmune thyroiditis). When more than 75% of the thyroid gland is destroyed by the process of thyroiditis, classical clinical signs of hypothyroidism appear. Because auotoimmune thyroiditis is heritable, it has significant implications for breeding stock. Accurate diagnosis of the early stages of autoimmune thyroiditis offers important genetic and clinical options for prompt intervention and case management. However, it is often difficult to make a definitive diagnosis.

Extracted From Dr Dodds' Presentation:
A complete baseline thyroid profile includes total T4, total T3, free T4, free T3, T3AA and T4AA, and can include cTSH and/or TgAA. A TgAA assay is especially important in screening for heritable autoimmune thyroid disease.

Most cases of thyroiditis have elevated serum TgAA levels, while only 20-40% of cases have elevated circulating T3 and/or T4 AA. Therefore, elevated T3/T4 AA confirms a diagnosis of autoimmune thyroiditis but underestimates its prevalence, as negative or normal antibody levels do not rule out thyroiditis. To be sure that one is doing all that can be done to identify thyroiditis, screening should include TgAA testing on an annual basis as part of the annual exam.

Q & A (taken from conversations with Dr Dodds and from the Seminar):
Q: **If twice daily treatment with thyroxine medication converts the abnormal blood levels to normal levels, does that mean that the thyroiditis has been cured? And the dog can then be used for breeding?**
A: **No, it means that while the disease is under control, it still exists. If left untreated, other autoimmune disorders may also arise.**

Q: **So does that mean that if the medication is stopped, the disease will again manifest itself with high TgAA levels?**
A: **Absolutely. An Alaskan Klee Kai with thyroiditis, on treatment, and routine laboratory testing with monitoring of the lab results, should be able to live a relatively normal life.**

Q: **Is autoimmune thyroiditis sex linked? We seem to see more of it in males than in females?**
A: **No, thyroiditis is not sex linked. It appears equally in males and in females.**

Q: **Does thyroiditis skip a generation?**
A: **No, it does not skip a generation.**

Q: **So, Mali, will be 5 years old in a couple of months, has good levels and no evidence of thyroiditis. If she remains that way, she will likely not have thyroiditis and her offspring will likely not have it. Is that correct?**
A: **Yes.**

Q: **What is the earliest we should be checking our Klee Kai for thyroiditis?**
A: **Screening should be initiated once healthy dogs and bitches have reached sexual maturity (10-14 months in males and approximately 8 weeks after the maiden heat in females [anestrus]).**

Thereafter, screening should be on an annual basis, again during anestrus for females and for males when not around a female in heat.

Q: Why is necessary to test females during anestrus and males who have not been around females in heat?
A: This is to minimize any influence of sex hormones on baseline thyroid function.

Q: So hypothyroidism is different from thyroiditis, then?
A: Yes. Hypothyroidism is **not** inherited or passed from generation to generation, and those Klee Kai with it do not need to be removed from the breeding pool, as we have such a small gene pool.

Q: What can we do to minimize or eliminate autoimmune thyroiditis from the Alaskan Klee Kai breed?
A: 1) Annual screening is essential 2) removing those with autoimmune thyroiditis from the breeding pool will prevent this heritable disease from being passed on to future generations; 3) participating in the international research study to identify the gene responsible for autoimmune thyroiditis will give us genetic markers that can be tested for. (much like we now do for Factor VII).

Q: How many Alaskan Klee Kai are in the thyroiditis database?
A: **To date -- including the dogs just tested, we have a total of 69 AKK in our data base.**

There were 43 normal, 10 hypothyroid, and 16 with thyroid autoantibodies [i.e. with heritable thyroiditis]. While, we should have 100 dogs (preferably 200) in the data base for a statistically predictive survey of the brred, these data to date show: 62% normal ; 14% hypothyroid; and 23% thyroiditis positive.

The trouble with a small total database is that people with affected dogs tend to test all their close relatives, which can skew the database towards more abnormals than in the breed as a whole. We need more dogs tested to establish the true prevalence of thyroiditis/hypothyroidism in the Alaskan Klee Kai breed.

Q: None of my dogs are hypothyroid or have thyroiditis. Why should I keep testing them?
A: While thyroiditis can occur early on, it may not appear until the dog is 5 or 6 years old. Therefore, females should not be bred before 4 years of age, to assure not passing along the heritable disease; males should not be bred until 7 years of age. But annual testing with a complete thyroid profile, as mentioned above, including TgAA, is the best way to assure the diagnosis, subsequent treatment, and continued good health of your AKK. **Submitting thyroid lab results, or blood samples to Hempoet to participate in the study, as well as participating in the international genetic marker (DNA) study. We need normals in there, too, not just dogs or relatives of dogs with hypothyroidism or thyroiditis.**

ATTACHMENTS:
Please see the Files Section for the following forms if you wish to participate in the AKK Thyroid Database.

1) Lab Request Form to send samples to Dr Dodds' laboratory, Hemopet
2) Consent form to sign and submit to participate in genetic marker DNA study
3) Instructions for sending laboratory samples, including sample for DNA study
4) Complete handout from Dr Dodds' Seminar