

Genodermatosis Research Foundation Newsletter

Spring 1999

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Establishing a Tissue Bank for the Future Study of Akita Skin Disease

by Robert W. Dunstan, D.V.M., M.S., D.A.C.V.P.

This represents a preliminary attempt to define two diseases that assumedly have a genetic basis in the Akita. Although relatively uncommon, both are devastating because they affect young adult Akitas — dogs that may already have been on the show circuit or perhaps may even have been used for breeding. These diseases are also important to define as neither has a safe, effective therapy.

The first disease is a condition we call panepidermal pustular pemphigus (also known as pemphigus erythematosus). This is believed to be an autoimmune disease that generally starts on the bridge of the nose with crusts (scabs) and loss of pigmentation. As the lesions progress, the skin of the ears, around the eyes and, in severe cases, the entire body may be affected.

The second disease, sebaceous adenitis, is a condition whose cause continues to elude us. The disease presents as scales (dandruff) that typically start on the face and ear tips but may involve large areas of the body, especially the back. The most characteristic lesion is the presence of scales that tightly adhere at the base of hair shafts. A disease with great variability in its presentation, cases can range from mild scaling and hair loss to a condition in which there is almost complete hair loss and prominent scales.

We want to study these two diseases, but before that is possible, we need to have a bank of serum, whole blood and skin biopsies from affected and non-affected dogs. The serum will be examined for the presence of circulating antibodies to the epidermis (pemphigus) or sebaceous glands (sebaceous adenitis). The whole blood will be used to isolate DNA that will be used to ultimately identify the gene(s) associated with these disorders. The skin biopsies will be used to confirm the diagnosis and define the presence of antibodies deposited on the skin, and will serve as an additional source of DNA.

We have thought a lot about how to get the materials we need to begin this study and have decided the best way is to work with Akita breeders and Akita owners. We are doing this because the success of this study depends on getting samples before any steroid therapy has been instituted. By educating the Akita owner, we believe that they can inform their veterinarian about the study and by working with their veterinarian, can assure that samples are taken correctly and before steroids have been administered.

1. When should an Akita have skin biopsies and blood?

We would like you to consider submitting samples to our tissue bank if:
A) you find that your dog is starting to develop facial crusts, often in a symmetrical pattern (pemphigus) or scales on the ear tips and trunk that are

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Poodles Test Positive for SA in Finland

Earlier this year the GRF was contacted by a Finnish Standard Poodle breeder for information about sebaceous adenitis. Although Poodle SA was not altogether unknown in Finland, it had been rather rare and was not generally believed to be much of a problem in the breed. Now, however, it seemed that more dogs were being diagnosed among related show lines.

In response to a proposal submitted by member breeders, the Finnish Poodle Club recently adopted a policy designed to reduce the spread of SA throughout Finnish Standard Poodles. In order to receive the FPC's recommendation for breeding, Standard Poodles are now required to have a negative SA biopsy (done at least annually), and in order for puppies to receive the FPC's recommendation, both sire and dam must have tested negative for SA within the last year.

The story of how the FPC came to adopt this new policy is related in the following article by Finnish Standard Poodle breeder and FPC member Pirkko Ranta-aho.

— Kathryn Foran

The Board of the Finnish Poodle Club (FPC) has accepted the following proposal made by the Finnish Standard Poodle breeders: Only those Standard Poodles with negative SA test results will be recommended for breeding. In addition, the FPC will recommend only those puppies whose parents have negative SA test results. The SA test result is good for one year. The board of the

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The Genodermatosis Research
Foundation was organized in 1990 by
a group of dog owners, breeders and
veterinarians with a common interest
in genetic skin disorders in dogs.

The Foundation provides education
and scientific support for research
leading to the alleviation of animal
suffering through understanding, diagno-
sis, treatment, cure and prevention of
heritable skin diseases.

The GRF is a non-profit organization
with headquarters at 3818 22nd St. N.W.,
Canton, Ohio 44708.
Contributions are welcome.

Membership dues are \$20 annually.

SA in the Golden Retriever

by Joanne Essinger

Unless you are a part of the veterinary field or a well-informed breeder, you would have little reason to have learned of sebaceous adenitis except through personal experience. That's how I came to know of SA.

In February 1997 we adopted Rosco, a bouncing 3-1/2-month-old Golden Retriever. As our other dog was maturing (13 at the time) we really longed for another dog that our kids could grow up with. This Golden puppy was listed in the "Give-Away" section of the newspaper. Of course our primary thought was to ensure there were no health concerns. I contacted my vet prior to seeing the dog to be aware of what to look for and also made an appointment for the dog to be checked over. The owner had all the original papers from the breeder, records of first shots, eye, hip checks, etc. Since the owner had fallen on financial hardship, he was behind in getting shots for the dog by a couple weeks. Other than that, the dog received a clean bill of health.

Over the next year, Rosco grew up to be a handsome "ultra light" Golden with a gorgeous coat! At 16 months old, I took him into the vet for a routine checkup and shots. At that time we found a couple crusty spots on his back, no larger than a pencil eraser. It did not appear to the vet as anything to be concerned about. The spots were pretty much pimple-like in nature. However, within a week Rosco's skin turned bright pink and he itched terribly. As I've learned can be the case, there were many unsuccessful attempts at diagnosing the problem. Possible allergies, possible mites (although we really doubted it) or infection. Two months after the initial onset and after more complications occurred, punch biopsies were taken.

I still recall the vet saying when he phoned with the results..."I never expected anything like this..." SA in Golden Retrievers is still very rare. They are prone to skin problems and allergies, so it is entirely possible that many are misdiagnosed. I learned early on that one of Rosco's litter mates is also afflicted with SA. It has been a comfort to keep in touch with the owner and "compare notes" with someone sharing the same difficulty.

A year in the life with a dog afflicted with SA is an emotional roller-

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Sorry, photos(s) not available
in this format. See original newsletter.

*Rosco in
March 1999*

A Retrospective on the Use of Baby Oil Soaks in the Treatment of Sebaceous Adenitis

by Alice Jeromin, D.V.M., Veterinary Dermatologist

As advanced as the cosmetics and pharmaceutical industries have become in determining what to use on dry skin to rehydrate or on oily skin to cause drying, little is understood about an important anatomic structure that plays a key role, the sebaceous gland. The true function of the sebaceous gland has not been determined in its entirety. Theories of its function to keep the skin soft and supple, manufacture lipids (fats) that prevent drying and have antimicrobial properties, and perhaps play a role in hair growth have all been offered.

These are probably all correct yet the glands appear to have a multi-functional role of which we are just scratching the surface in defining their importance. Those of us interested in the disease responsible for the destruction of the sebaceous glands, sebaceous adenitis (SA), respect the importance of these glands even though we may not be scientific enough to understand everything about them.

It is difficult to devise a treatment for a disease of a structure that is poorly understood! However just as in any disease, sometimes "by accident" therapies are discovered that actually elicit an improvement in clinical symptoms. Treatments for SA include synthetic vitamin A (oral retinoids), natural vitamin A, fatty acids, Cyclosporine and topical emollients such as baby oil soaks, propylene glycol and bath oils/conditioners. Oral retinoids such as Accutane, Cyclosporine and high doses of fatty acids can all be quite expensive and many clients will not be able to afford these treatments. In addition, at best, the success rate in one study using oral retinoids found only a 50 percent response rate and that could take up to three months! Also, with any medication there is the potential for side effects, i.e., oral retinoids can cause dry eye and elevated cholesterol, high doses of fatty acids cause diarrhea in some patients.

For these reasons, my first line therapy for a patient with SA is topical baby oil soaks followed by Palmolive dishwashing soap. (There are many permutations of this therapy — some owners have used Humectress conditioner, Alpha Keri oil, etc.) In my dermatology practice I have diagnosed various breeds of dogs with SA — Golden Retrievers, Standard and Miniature Poodles, Samoyeds, Dalmatians, Havanese, Maltese, Vizslas, Labrador Retrievers, German Shepherd Dogs, Springer Spaniels, Old English Sheepdogs, Akitas, Lhasa Apsos and mixed breeds. I have had nearly a 100 percent success rate using baby oil soaks (or variations) weekly as therapy. The treatment is largely without side effects and inexpensive. The main drawback is that it is time-consuming but most owners do not mind, seeing that they are saving quite a bit of expense. Most patients begin to show improvement after the first couple of baths.

The lack of knowledge about what the sebaceous glands actually do proves to be a stumbling block in understanding a disease that involves these structures. For years my area of research has been trying to develop a non-invasive test for SA that hopefully will be able to detect subclinical SA (before visible symptoms become evident). Initially my research was in collaboration with Procter & Gamble which employs or consults with the top skin lipid experts throughout the world. Working with Procter & Gamble we actually pinpointed the lipid structure of canine skin and found it to be quite different from human skin. Skin lipids of the dog had been studied some 20 years earlier using antiquated methods such as dipping dogs in vats of solvents! I was fortunate enough to make use of the most up-to-date technology through Procter & Gamble to study skin lipids.

Determining what exactly makes up the skin lipids in dogs was step one.

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Control of Canine Genetic Diseases

by Dr. George A. Padgett

A Review by Diane Laratta

For those individuals who have had the good fortune to attend a lecture given by Dr. George Padgett, professor of pathology at Michigan State University, this book will make them feel like Dr. Padgett is sitting right beside them as they read each chapter. Dr. Padgett writes like he speaks! From the beginning of the book to the end, Dr. Padgett talks to breeders in language they can understand as he explains that responsible breeders don't want dogs that just win, but rather "healthy, winning dogs."

Chapter by chapter, Dr. Padgett walks the breeder through the process of eliminating genetic diseases from a breeding program. The book is peppered with helpful diagrams and tables. An entire chapter is devoted to pedigrees, how to understand and use them to determine the genetic status of specific dogs.

Just as in his lectures, Dr. Padgett urges breeders to be open and honest about genetic disorders that appear in their breeding program. He gives guidelines to breed clubs that will help their members control genetic diseases. And he states his reasons for supporting Open Registries like those operated by the Institute for Genetic Disease Control in Animals (GDC) versus the closed registries operated by both OFA and CERF.

The last chapters of the book list all known genetic disorders for every breed, along with a brief description of each disorder. Sadly, the breed with the most known genetic diseases is the Poodle with 144 disorders listed.

By following the advice in Dr. Padgett's book, breeders should be able to get a handle on the genetic disorders in their breeding program.

This book is a "must have" for anyone who breeds dogs! M

Note: Control of Canine Genetic Diseases, 264 pages, is published by MacMillan Publishing Co., 1998, \$27.95.

Poodles Test Positive for SA in Finland

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FPC had an easy job accepting the proposal because it was signed by almost all our most prominent Standard Poodle breeders.

How did we achieve all that? I would like to share with you my view on how it happened.

The first SA-affected Standard Poodle was diagnosed in Finland at the beginning of 1992. At that time, I had already heard SA reports from my American friends and read articles about SA from American breed magazines. So I decided to share that information with Finnish breeders. I translated an excellent and rather detailed article about SA written by Diane Larrata. The article was published in our breed magazine *Puudeli* (The Poodle). In addition, SA was discussed at several meetings organized by the FPC for breeders.

Shortly after the first SA diagnosis, about 10 Standards were tested, but no further SA-affected Poodles were found at that point. Some breeders continued to be concerned, however, and started to test their dogs on an annual basis. To promote SA examinations, the FPC began to refund almost half the cost of SA biopsies to the owner of the dog, provided the owner agreed to share the test results with the Club, i.e., to permit the SA test result to be published in *Puudeli*.

Around 1996, two more SA-affected Standard Poodles were diagnosed. Because one of these was of my own breeding, SA became an even more personal issue to me. It seemed at the time that my heart almost stopped beating. I was heartbroken, both for the dog itself and also for the owner; I wished I had kept that dog myself. I had the SA test result published in our breed magazine, and so did the owner of the other SA-affected Poodle.

It must have seemed to many that these SA-affected dogs were not closely related to the rest of our Standards, as they did not share any immediate common ancestors. Because of this, these two SA diagnoses did not seem worry many people. At the time, the board of our breed club seemed to think that these SA-affected Poodles were only isolated cases, so there was no need for concern. But there was another SA diagnosis made last year, and in looking at the pedigree of that dog it was now evident that the SA problem now concerned all our Standard Poodle breeders.

As the problem became evident to Finnish Standard Poodle breeders, they acted in a very responsible way. They wanted to promote SA testing of all breeding stock, at

a minimum, so they submitted a testing policy proposal to the Board of the FPC. Many breeders who had not tested their dogs previously now had their dogs SA-biopsied. Unfortunately, more SA-affected Standard Poodles were identified. These dogs apparently have subclinical SA because they have no overt symptoms.

With our annual Poodle Club Specialty show coming up in two weeks' time, many breeders seemed very eager to learn more about SA. Therefore, although there was not much time, I decided to write an illustrated SA information leaflet to be distributed at the Poodle Specialty. It seemed like a miracle that material for the booklet, back-issues of GRF newsletters and photographs, arrived so quickly.

In addition to information on SA itself, our leaflet also contains some general guidelines for breeding, including some discussion about the dangers of inbreeding. I have heard that many breeders are handing out this leaflet to the owners of their puppies. The leaflet is published in a very easy-to-read format, thanks to a concerned Standard Poodle breeder, Merja Jokela, who also happens to be a professional in advertising. The information will also be published in the next

issue of our Poodle magazine, together with the SA test results identifying affected Poodles.

I think that in addition to the things discussed above, another factor that has had a huge influence on the change of attitude toward SA is the fact that many breeders have now seen how a Standard Poodle with severe SA may really look: a dog that has practically no hair, serious skin infections, and massive scaling.

I commend the Finnish breeders for their actions: speedy cooperation for our beloved Standard Poodle and sharing information openly. There is no way you can breed away from a problem if you do not have accurate information about it. Although having an SA-affected dog is definitely a tragedy for everybody involved, I hope that our experiences may help others, and that our SA-affected Poodles may help in promoting the SA research and in developing a DNA test for SA.

For more information about SA in Finland, contact:

Pirkko Ranta-aho
Pohjolankatu 48, 00600
Helsinki, Finland
E-mail: pirkko.pra@dlc.fi
Fax: 357-9-728 94 690

(Note: Leaflet is in Finnish.)

Sorry, photos(s) not available in this format. See original newsletter.

Establishing a Tissue Bank for Akitas

(Continued from Page 1)

often adhered to hair shafts (sebaceous adenitis), and B) your dog has not had any steroid therapy for over three months

We recommend that the decision to submit samples be made only after consultation with your veterinarian, who can help you decide if either of these two diseases should be considered as the cause of your dog's skin lesions.

2. How are tissues to be submitted?

There are three different samples that should be collected:

A) Frozen serum — (1.5 ml minimum). Whole blood should be collected in a 5 ml orange top Vacutainer tube, spun in a centrifuge, the serum removed and frozen.

B) Whole blood in EDTA— (2.5 ml minimum). Whole blood should be collected in a lavender top Vacutainer tube and kept cold but not frozen.

C) Formalin-fixed biopsies to confirm the diagnosis and provide additional tissues for immunohistochemistry and DNA isolation.

There is a possibility that your veterinarian may not believe that a biopsy is needed initially and that therapy should be attempted before any surgery. This should not pose a problem for our tissue bank because if pemphigus or sebaceous adenitis is present, a biopsy will eventually be needed to confirm the diagnosis. Thus, there is no need to biopsy initially; however, if the lesions progress to where a biopsy is necessary, we would like to be able to evaluate the sample microscopically to confirm the diagnosis. Note that if it turns out that the dog does not have pemphigus or sebaceous adenitis, the samples are still of value because we can use them as controls.

3. How do you send the samples?

A) The serum should be sent frozen in a Styrofoam container. The best way to send frozen material is by packing it in dry ice (if available). If not, the samples should be wrapped in newspaper and packed with a frozen cold pack. Samples should be sent overnight delivery.

B) The EDTA blood should be sent either frozen or simply cold. It should not be sent at room temperature.

C) The skin biopsies should be sent in 10 percent neutral buffered formalin. If you are sending the biopsied material during cold weather and the container might freeze, we recommend mixing 1 part alcohol (ethanol, methanol or isopropyl) in 9 parts formalin. If sending the formalin-fixed tissue with the blood, you should put the blood in a separate, sealed, plastic bag to avoid the hemolytic affect of formalin.

D) Samples should be sent with the names and addresses of veterinarian and owner along with the age, sex and pertinent medical history of the dog, including a description of the distribution and appearance of the lesions.

Samples should be sent to:

Akita Tissue Bank, Dermatopathology Specialty Service
215 VMA
College of Veterinary Medicine
Texas A&M University
College Station, TX 77843-1147

4. What would this cost?

We will perform the organization of samples and the isolation of DNA from the EDTA tube at no charge. We will charge our usual rate of \$35 for interpreting the biopsy sample.

5. Questions?

Contact Robert W. Dunstan, D.V.M., M.S., D.A.C.V.P., or Dr. Kelly M. Credille, D.V.M., D.A.C.V.P., (409) 845-2651 or rdunstan@cvm.tamu.edu
Thanks!

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SA in the Golden

(Continued from page 2)

coaster. In the first months Rosco was so uncomfortable he didn't want to be touched, but longed to sit in my lap to be cradled. He moved slowly and scratched when he could stand to do so. His flareups no longer seemed to give him as much discomfort. He still gets itchy and we have to attempt to control the scratching so he doesn't tear the skin and end up with infections. Recently we had to remove his collar because it caused irritations on his neck. As of March he is down to having only 5-10 percent of his original hair volume. While he is certainly not pretty to look at, for the most part his attitude is that of a happy, energized 2-1/2-year-old.

I wish I could say that euthanasia had not crossed my mind, but it has. The discomfort of the dog at times, the odor, bathing and oil soaks, hair loss, and vet trips can make for a pet that's no longer easy to care for. Daily vacuuming in our house is a must and I'm on my second carpet cleaner in a year (it's a tough battle to try to keep the musty, doggie odor associated with SA from taking over the house). While I've always kept my dogs as "inside pets," I briefly considered keeping Rosco out more. That's just not a viable option however. He no longer has enough hair to protect his skin from the sun and not enough to keep him warm in the winter.

In the last year we've learned to take on the "one day at a time" attitude in dealing with SA and its hardships. If we look too far into the future, it becomes overwhelming. Our plan is to keep Rosco as happy and comfortable as we can on a daily basis and deal with the complications as they come.

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Baby Oil Soaks

(Continued from page 2)

Investigating what causes their destruction and what we can do about it is our big next step. When I mentioned that baby oil soaks applied topically to dogs with SA caused them to re-grow hair, not one of the lipid experts could offer a logical explanation.

Those of us who have used baby oil soaks followed by a detergent shampoo KNOW we see results—new hair growth with reduction of scaling. We know it works, we just don't know why!

M

Increasing Our Understanding of Dermatomyositis (Continued from Page 7)

University that will be the first to address identifying the genetic markers associated with DM in the Shetland Sheepdog. This project, if funded, will be a collaborative effort between researchers at Texas A&M and Michigan State University. From this study we hope to develop a genetic screening test for DM that will aid in making breeding decisions.

Research at Texas A&M University is also focusing on new therapies. Drs. Rees, Boothe and Boeckh have been actively involved in projects relating to the treatment of DM. Through generous funding from the Collie Club of America Foundation, this group of researchers has been able to study a drug named pentoxifylline or Trental, and has begun a pilot study to determine a therapeutic dose. Several Shetland Sheepdogs have been receiving treatment and improvement in the symptoms has been noted. Severe cases of DM may require higher drug doses when compared to mild cases. The only known side effect of this drug has been a little loose stool. This was corrected when the dose was decreased. According to our preliminary data it appears that pentoxifylline is a safe and effective drug to treat DM. More studies using a larger number of dogs need to be conducted before any definitive conclusions can be made about the most appropriate dose and drug safety. Research funding is currently being sought from the Collie Club of America Foundation in order to complete this study.

If you have a dog diagnosed with or that you suspect has DM, please contact your veterinarian and set up an appointment at Texas A&M University or have them call Dr. Rees at (409) 845-2351 or FAX (409) 845-6978.

Thank you for your interest and support!

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Genodermatosis Research Foundation

Jo Ann Geramita, Secretary
3818 22nd St. N.W.
Canton, OH 44708



Search Still on for Test Breeding Dogs

The Genodermatosis Research Foundation is still looking for an SA-affected Akita in order to do a test breeding to an SA-affected Standard Poodle. The Akita must have hips and eyes certified and be free of any other major genetic health problem. The test breeding would tell if the SA gene in Akitas is identical to that in Standard Poodles.

We are also in need of people who will agree to be caretakers for the resulting puppies

If you are interested in participating in this important research, please contact GRF secretary Jo Ann Geramita at (330) 478-8322 (Eastern Time). M

Reality Check: Breeds Known (so far) to Have Sebaceous Adenitis

Airedale Terrier
Akita
American Eskimo*
Beagle*
Border Collie*
Cairn Terrier
Chesapeake Bay Retriever*
Collie
Dachshund
Dalmatian
German Shepherd Dog
Golden Retriever
Great Pyrenees*
Havanese
Irish Setter
Labrador Retriever
Lhasa Apso
Maltese
Miniature Pinscher
Miniature Poodle
Mixed Breeds
Old English Sheepdog
St. Bernard
Samoyed
Springer Spaniel
Shetland Sheepdog
Shih Tzu
Standard Poodle
Toy Poodle
Vizsla
Weimaraner
Pembroke Welsh Corgi

*GRF Survey respondents reporting SA-positive skin biopsies.