

Newsletter of the COMMUNITY PRACTICE SERVICE

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Winter 2006

WSU Helps Treat Canine Lymphoma Patients

Bailey and Annabelle are two lucky dogs. Not only do they have loving and generous owners, they also are among the first dogs ever to be treated with a groundbreaking procedure designed to cure their lymphoma.

Traditionally, treatment for dogs with lymphatic cancer consisted of chemotherapy that might extend their life a year or so.

But during the past year, WSU has been involved in treating some of the first canine lymphoma patients with full-body irradiation and a bone marrow stem cell transplant that may actually cure their disease.

Lymphoma is a cancer of the immune system. The first client dog to receive a clinical stem cell transplant as treatment for lymphoma underwent the procedure in 2004 at the Fred Hutchinson Cancer Research Center in Seattle.

Drs. Edmund Sullivan and Theresa Westfall, veterinarians from Bellingham, performed the stem cell transplant for a golden retriever from western Washington named Comet. They have since been involved in treating several more dogs with this method, including Bailey and Annabelle, after the successful experience with Comet.

"Comet's transplant was done on June 15, 2004, and he is currently doing fantastic," Dr. Sullivan said.

In order for a dog to have a stem cell transplant, it needs to have a donor dog that perfectly matches its own stem cells. For Drs. Sullivan and Westfall's clients, this has entailed an enormous effort tracking down dozens of their pet's relatives and getting samples of each one's blood.

Once a match is found, a machine extracts and sorts stem cells from the drawn blood. The sick dog then receives the healthy donor stem cells intravenously after undergoing full-body irradiation to destroy its own diseased immune cells.

For Comet, this was done at the Fred Hutchinson Cancer Research Center because much of the initial research for performing stem cell transplants for dogs was developed there in an effort to find ways to help humans with lymphoma. For this first case,



Bailey rests comfortably after procedure

the center donated the facilities for the transplant.

After Comet, Drs. Sullivan and Westfall purchased a machine to separate stem cells for use at their clinic, the Bellingham Veterinary and Critical Care Centre. Currently, client animals of the clinic have their pre- and post-transplant work is done there.

In between these procedures, Dr. Sullivan brings the dogs to the WSU Veterinary Teaching Hospital to receive full-body irradiation from the college's linear accelerator. Usually animals that undergo radiation have a specific area of their body targeted in a protocol that generally lasts only a few minutes.

Bailey, a beagle from Seattle, was the second of Drs. Sullivan and Westfall's stem cell patients, but the first that WSU helped treat. In April, **Dr. Patrick Gavin**, a WSU veterinary professor and radiation oncologist, conducted Bailey's irradiation in a protocol that safely treated her whole body in about one hour.

Dr. Gavin is one of a few veterinary radiation oncologists in the world, and pioneered much of the work used to treat animals with radiation.

After her treatment, Bailey spent several weeks in isolation at the Bellingham clinic to prevent infections and to make sure that her body did not reject her donor's stem cells. She also was given anti-rejection medication for several weeks after she went home.

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To make an appointment call:
509-335-0711

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WSU's Neurology Service

Removing brain tumors, repairing spinal fractures, and helping animals walk again are all part of the services offered by the WSU neurology team. These veterinary specialists diagnose and treat many animals that have problems stemming from their brain, spinal cord, or other areas in their nervous system.

Along with state-of-the-art technology available at the WSU Veterinary Teaching Hospital, WSU neurologists provide a broad range of diagnostic and therapeutic services for all types of animals, with a main focus on companion animals.

Commonly seen spinal problems include intervertebral disk herniations (commonly referred to as a "slipped disk"), spinal injuries, tumors, birth defects, infectious, and degenerative conditions. Brain problems seen may include tumors, head injuries, encephalitis, and cerebrovascular disease or "strokes."

For the most rapid and complete diagnoses, the team combines their expertise in neurological assessment with special medical imaging such as magnetic resonance or MR imaging, electrodiagnostics, and spinal fluid analysis (commonly referred to as a "spinal tap").

"If necessary, we can examine the entire nervous system," said **Dr. Annie Chen**, a WSU clinical instructor and board-eligible veterinary neurologist. "One of our specialties is imaging with the MRI. We work very closely with the radiology service in providing these diagnostic modalities for our patients."

The use of MR imaging has revolutionized the diagnosis of neurological conditions in both people and animals. The WSU Veterinary Teaching Hospital was one of the first veterinary hospitals in the world to have a MR unit, and is recognized as a world leader in this type of imaging modality for animals. The hospital has imaged over 5,000 animals with this technology since opening in 1996.

"What we have been able to 'see' with this technology has allowed us the opportunity to develop treatments to actually 'fix' many neurologic problems that even just a few years ago would have resulted in the animal dying or being euthanized," says **Dr. Rod Bagley**, the founding neurologist of the WSU veterinary neurology service.

Dr. Bagley is an internationally recognized leader in veterinary circles in both MR imaging of neurologic disease and neurosurgery and has worked at WSU for more than 14 years. He is the author of the textbook *Fundamentals of Clinical Veterinary Neurology*, which is used by numerous veterinarians and veterinary students to learn neurology. He



The WSU Neurology Team (left to right): **Dr. Fred Winger**, veterinary technician **Lori Lutskas**, patient service representative **Sally Anderson**, **Drs. Rodney Bagley**, **Annie Chen**, and **Daniel Hicks**.

is currently working on a second book with WSU's **Dr. Pat Gavin** on veterinary magnetic resonance diagnosis.

Because of the experience of the faculty and staff at WSU, the neurology service offers leading-edge neurosurgical capabilities for animals that need surgery on any component of the nervous system, including the peripheral nerves, spinal cord, and brain. "Our strengths are brain and spinal surgeries," Dr. Chen said. "With neurosurgery there are many problems that we can reverse or

make better, such as disk herniations.

"We can also correct spinal fractures with surgery and remove spinal and brain tumors," she said. For the best care possible for each individual patient, the neurology service also works closely with other specialty services at the college, including radiology, oncology, and internal medicine on the wide range of problems affecting the nervous system.

On average, the neurology team sees 10 to 15 new patients each week, about 25 percent from the local region and the rest traveling from western Washington or out of state. While many animals are referred from other veterinarians and have scheduled appointments, the neurology team is available 24 hours a day for emergencies or consultations from the rest of the hospital.

Along with Drs. Chen and Bagley, the neurology team includes two resident veterinarians with specialty training in neurology and neurosurgery, **Drs. Daniel Hicks** and **Fred Winger**. The service is also supported by veterinary technician **Lori Lutskas**, who has advanced training in physical therapy and other aspects of in-hospital patient care. Additionally, **Sally Anderson** is the service's patient care coordinator. She talks with owners and keeps them informed about the condition of their animals.

"Clients usually talk to and make appointments with Sally, and she can tell them what to expect, what to bring in, and the cost involving each procedure," Dr. Chen said. "About half of the animals we see need surgery, but others can benefit from physical therapy and/or medical therapy. We can't reverse or treat every problem, but a lot of times we can help with problems ranging from pain to paralysis, seizures, vertigo, or numerous other problems that affect the nervous system."

For more information about the WSU neurology service or to schedule an appointment for a pet, contact the Veterinary Teaching Hospital at 509-335-0711.

Neurological disease affects Labrador retriever puppies

Normally puppies have boundless energy. This was not true for Kasa, a five-month-old chocolate Labrador retriever that would lose energy after running only a short distance.

Her owner, Joe Anderson, a dog breeder from Whitebird, Idaho, also noticed she seemed to be weak much of the time, was not eating well or gaining weight, and had tremors. These problems were also plaguing two more of Kasa's eight littermates.

As a conscientious dog breeder, Anderson wanted to get to the bottom of why some of his puppies were doing so poorly. In August, Anderson brought Kasa to the WSU Veterinary Teaching Hospital.

"One thing we were concerned about was a congenital abnormality because three out of eight puppies in one litter were not doing well," said **Dr. Matt Mickas**, a WSU clinical assistant professor and head of the Community Practice Service who originally examined Kasa. "We thought it might be a cardiovascular disease because the puppies were so winded, or a congenital neuromuscular problem."

"When we saw Kasa, she would drink water by placing her muzzle in the water and suck, which is unusual," he said. "It was like she couldn't drink. Her muscles were atrophied and she had a poor body condition."

Lab work, including a complete blood count, blood chemistry, and urinalysis, showed that Kasa's organs were working well and did not indicate a metabolic disease. "Because of her breed, age, and the fact that other dogs were affected, we suspected a hereditary neuromuscular problem and referred her to the neurology service," Dr. Mickas said.

Dr. Fred Wininger, a resident in neurology and neurosurgery at the WSU Teaching Hospital, was also worried about congenital muscle diseases or myopathies seen in young Labrador retrievers. In order to make a definitive diagnosis, Dr. Wininger conducted electrical studies of Kasa's muscles and nerves, and collected a biopsy of the muscles themselves. A veterinary muscle pathologist in San Diego confirmed that Kasa indeed had a muscle disease called Centronuclear Myopathy (CNM).

CNM, also known as Labrador Muscular Myopathy or Type II myopathy, is not common in Labrador retrievers, but is specific to only this breed. Affected puppies show no signs of the disease at birth. But after two weeks, they begin to lose weight and progressively show muscle weakness, exercise intolerance, and other associated symptoms until about five months of age.

This pattern played out with Anderson's affected puppies. Two seemingly healthy puppies had been sold from the litter, but were returned to him within a few months when they were not doing well.

"Labrador retrievers are so popular and people breed a lot of them, so we have seen cases of this here before," Dr. Wininger said. "It is a hereditary problem, and dogs with it look very muscle-wasted because their muscle tissue atrophies significantly and you can see their bones very prominently, and they are exercise intolerant."

The disease does not usually cause death and typically stops progressing after the dog reaches about one year of age. But the dog will not develop normal muscle function later in life and will have abnormal postures and movements. It will also likely require more medical care than most dogs throughout its life because affected dogs are more prone to secondary complications resulting from the muscle disease.

"Usually after eight to 11 months, most dogs kind of stabilize and don't get better or worse," he said. "There is no treatment or therapy for the disease, but Kasa is doing very well. She just gets tired more quickly and does not have normal muscle mass. Dogs with CNM will never be normal, but most people keep them and they do fine if their owners manage them appropriately."

Recently, there has been a breakthrough regarding CNM that is good news for Anderson and other dog breeders. "A group in France found a genetic cause for CNM and made a DNA test that when used can find affected dogs and their carriers," Dr. Wininger said. "This is exciting because it is possible for breeders to prevent the disease by testing their sires and dames and learn which dogs should and shouldn't be bred."



Kasa undergoing a neurological exam.

Canine Lymphoma *continued from front page*

In August, Annabelle, a golden retriever from Texas, was brought to Washington to undergo the same treatment for her lymphoma.

"Annabelle came from Dallas with a brother who was a donor," Dr. Sullivan said. "She was a pretty sick dog when we first saw her, and after using the same protocol that was used for Bailey and Comet, she is looking better every day and will be running before long."

Are there options for paralyzed pets?

Sometimes healthy and active pets are suddenly unable to move. This apparent paralysis can be very upsetting for pet owners to witness. But with veterinary assistance, it may be possible to improve these animals' condition.

"It's important that owners know there is hope for pets with paralysis," said **Dr. Annie Chen**, a WSU veterinary neurologist. "Surgery can help some pets return to normal function, while others can be helped with pain control and physical therapy."

First, an owner that notices his or her pet cannot move should seek veterinary assistance immediately. There are a number of conditions that can result in animals becoming rapidly unable to move, and a thorough veterinary assessment can help to determine what the problem is and how best to treat it.

Seemingly paralyzed pets may have problems with their muscles, bones, joints, or nerves. True paralysis is most commonly the result of a nerve problem, often relating to the spinal cord.

If the initial examination suggests a problem with the nervous system, a veterinary neurologist may be consulted. At the WSU Teaching Hospital, there is a team of doctors and staff that have advanced training in dealing with these problems. A neurological evaluation from these individuals can often help to pinpoint the location of the problem within the nervous system, and to suggest diseases that may be affecting the animal. Additional diagnostic tests are often necessary to diagnosis the actual cause of the disease.

"With spinal abnormalities, we often see problems with intervertebral disks, fractures of the spine, infection, and tumors," Dr. Chen said. "Depending on the age and breed of an animal, other conditions may also occur, such as degenerative and congenital spinal diseases.

"Because of the number of different diseases possible, we often need advanced imaging studies, such as magnetic resonance or MR imaging, to actually show us what the spinal cord looks like inside of the patient," she said. "Once we know what disease is affecting the spinal cord, we can offer the best treatments and give the owners a realistic idea of what to expect for the future."

In some situations, treatment may consist of medications to reduce inflammation and swelling of the spinal cord. Many spinal cord diseases require surgery to relieve pressure on the spinal cord. In other instances, where the spine is fractured or luxated, surgery is performed to make the spine more stable. Physical

therapy also plays an important role in recovery process in many animals.

Unfortunately, some animals have problems that cannot be fixed and are permanently paralyzed.

"These are always tough cases, as animals that are permanently paralyzed require management, such as handling bladder and bowel problems," Dr. Chen said. "For some animals, specially designed animal wheel-chairs may be an option to increase mobility."

While spinal injuries and diseases are often very severe problems in animals, some diseases that result in paralysis can be diagnosed and treated, with the animal returning to normal activity. "It is always a very happy time for us in the neurology service when we can help an animal that comes into the hospital paralyzed to be able to walk again," Dr. Chen said.



Clark, a paralyzed dachshund, in pre- and post-surgery photos at the WSU Veterinary Teaching Hospital. After surgery, he was able to walk again.

As cold weather approaches, it is important to plan for pets that either remain outdoors most of the winter or spend a portion of their day playing outdoors. If an animal gets wet in cold weather, its ability to maintain its body temperature is decreased, especially if the wind is blowing. Hypothermia and frostbite affects animals as well as people. Remember that young, old, or sick animals are less tolerant of temperature extremes and need extra care in cold weather.

- All pets need shelter from the wind, rain, and snow. It is a good idea to place a door on your dog's shelter or house, and be sure to provide some warm bedding to help combat the cold.
- It is also very important that pets have access to fresh, liquid water. Even if the bowl seems full, make sure ice hasn't formed over the top that would prevent pets from drinking, or purchase a heated pet bowl to prevent water from freezing. Use plastic bowls, because tongues or lips may stick to cold metal bowls.
- A pet that spends a lot of time outdoors in the cold may also need extra calories because it will use more energy to keep warm. Make sure pet food left outdoors is not being eaten or soiled by rodents, wildlife, or other animals.
- After walking a dog in winter weather, be sure to wash off rock salt or deicers that may stick to their feet. Also, be careful walking dogs near frozen lakes or ponds. If a person can't skate on it, a pet may fall through as well and may suffer hypothermia or drown. Indoor dogs may benefit from a sweater and booties to keep comfortable in the cold when outdoors.

- Hunting season continues throughout the winter, so be sure pets are in safe areas and cannot be mistaken for game. Hunters should check their dogs over daily for sporting injuries and foreign objects such as grass awns that may become lodged in the feet, ears, eyes, and nose.
- Outdoor cats seeking heat may climb onto a warm car engine, and can be seriously hurt or killed if they haven't moved the next time the car is started. Rap on the hood of your car before starting the engine to scare away any visitors. Also be aware that antifreeze, which tastes sweet, is very toxic to pets. Even a small amount (1/2 teaspoon per pound) can kill, so clean up any spills and check to make sure your car is not leaking any on the ground. If you suspect your pet has ingested antifreeze, seek veterinary attention immediately.
- Christmas will be around the corner soon. Don't forget your pets in all the hustle and bustle. Pets may be exposed to unwanted stress, such as traveling, houses full of visitors, and other environmental changes in the home like decorations and lights. Provide them with plenty of attention and a quiet space they can go to and feel safe. Holiday decorations can also present hazards to your pets, including holiday trees, ornaments, string lights, tinsel, and plants such as mistletoe. Keep potentially hazardous items away from your pets and out of their mouths.
- If you are thinking of giving a pet as a gift, be certain it is a welcomed and expected gift. Every year, pets given as unwanted gifts end up in shelters or worse, being destroyed.

The Pet Memorial Program

Pet owners are special people who value the joy, protection, and companionship that a pet offers. Many consider their pets to be members of the family and understand the responsibilities and love involved with caring for animals. The Washington State University College of Veterinary Medicine recognizes what veterinarians have always known—people love their pets.

For some, when a pet dies, the loss can be overwhelming and the void created by its absence often runs deep. The Pet Memorial Program provides a way for friends and family to express sympathy and comfort for grieving pet owners.

Through private support, the Pet Memorial Program is designed to aid veterinarians in the identification of diseases and disorders that affect animal health. It also provides support for veterinary medical education.

Contributors to the Pet Memorial Program include pet owners and their families and friends who wish to make a gift in the name of a beloved pet. This is a meaningful way to remember a companion. The program assists in developing improved methods for relieving animal suffering and improving the health of all animals.

Pet owners can also establish perpetual assistance plans to help improve the lives of all companion animals. By leaving a bequest to the Pet Memorial Program in memory of their special companion, owners support the enhancement of animal health and veterinary medicine in perpetuity.

Veterinarians, pet owners, and friends of pet owners have found that the Pet Memorial Program is an excellent way to:

- Show how much you care
- Express sympathy over the loss of a beloved companion
- Memorialize a dearly loved pet

Veterinarians have taken an oath to protect animal health, relieve animal suffering, and advance veterinary medical knowledge. Participation in the Pet Memorial Program at WSU is one of the many ways veterinarians fulfill this oath every day of their professional careers.

Touching stories

The Pet Memorial Program is currently posted online. Through it, pet owners can submit photographs and stories of their lost pets. Many heartfelt stories have been posted from owners about how their favorite family pet has touched their lives.

"The stories range from sweet to funny to so heart-wrenching that they bring tears to my eyes when I read them while putting them online," says Dr. Cheryl Dhein, who heads up the instructional technology division of veterinary information services at WSU's College of Veterinary Medicine.

Want to read these stories for yourself? Visit: www.vetmed.wsu.edu/depts-prd/memorial.asp.



Miss Rudi and Lexi



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WSU Community Practice News at the Speed of Light!

Beginning January 1, 2007, the WSU Community Practice Service newsletter will be available to our readers via e-mail. Instead of waiting for a hard copy in the mail, the newsletter will arrive in your e-mail inbox as a Web link to the WSU College of Veterinary Medicine Web site to peruse at your convenience.

In it, you will be able to find out what's new with the WSU Community Practice Service, pet health information, behavioral, nutritional and safety tips, specialty services offered at the WSU Veterinary Teaching Hospital, and the latest information on emerging small animal diseases. You can also keep track of critical contact information for the Veterinary Teaching Hospital and college Web site. Online, the newsletter will also offer the advantages of Internet hotlinks directly to the people and programs you read about.



The newsletter is published quarterly, and sent to teaching hospital clients, referring veterinarians, and pet lovers in general.

If you would like to keep receiving the newsletter electronically for free, simply go online to the WSU College of Veterinary Medicine Web site at **www.vetmed.wsu.edu/depts-vth/newsletters** and enroll. There, previous issues of the Community Practice Service newsletter can also be found. Those who prefer a hard copy of the newsletter can subscribe for a \$25 annual fee to receive four quarterly issues by U.S. Mail. To request a hard copy, you can mail this slip to the address below, call 509-335-3100, or go to the WSU veterinary Web site link above.

Hard copy mailings to non-subscribers will cease on January 1, 2007, so be sure to reply soon.

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- I would like to make a donation to the WSU College of Veterinary Medicine to support important small animal services and research being performed to improve pet health everywhere. Enclosed is my check, made payable to Washington State University Foundation.

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