

# High-Speed Health

## Telemedicine improves care one click at a time

**T**onto, an enormous domestic longhair, hadn't been acting like himself for some time when his owner Heather Delanghe took him to the vet to get him checked out. The gentle 15-year-old was much quieter than usual and had stopped eating—definitely a sign that something was amiss for the 18-pound cat.

Given Tonto's age, veterinarian Dr. Jeffrey Latimer suspected that something aggressive was going on and decided to do some tests, including blood work and a tissue sample. "He took some abdominal X-rays and found some hard, calcified areas in his lower abdomen and his lymph nodes in his upper leg area," said Delanghe. "He wasn't sure what it was, so he did an ultrasound."

In the past, Tonto would have been sent to not-so-nearby Toronto or Ottawa for an ultrasound, and waited another period of time to receive those results.

But Latimer performed the ultrasound in his Kingston, Ont., office and had the results back in six hours. How? Through telemedicine.

Latimer had suspected cancer, but wasn't sure about the X-ray, so he contacted a specialist in the United States and faxed all of the test results and images to a world-renowned internal medicine specialist.

"We wanted to get some more info because the next stage was either a decision to do surgery or not," said Delanghe. "It's kind of a hard decision to make."

When the results came back, the specialist

suggested the lymph node problem was probably secondary to what was really going on. Delanghe and Latimer decided to perform surgery to see what was happening. Unfortunately, there was cancer everywhere. "I wasn't prepared to watch him waste away," said Delanghe. "At that moment, I didn't want to bring him out to let him starve to death." In the end, they decided not to bring Tonto out of sedation.

Delanghe's experience would have been much different if it weren't for the speedy results of the specialist. She admits they would probably have tried several treatments to rule out various possibilities, prolonging Tonto's suffering, possibly for weeks.

Telemedicine is changing the way veterinarians provide service—for the better, according to Latimer. Having specialists at his fingertips means his furry patients get the expertise of specialists, without requiring them to be in the office.

### TELEMEDICINE 101: SPEEDY AND CONVENIENT

Veterinary telemedicine uses telecommunication, such as a phone line or the Internet, to



complement in-office services. Vets can use technology to access specialists from around the world by linking their clinics to larger ones, and by transmitting X-rays or other diagnostic images through the Internet for analysis by specialists.

Latimer usually uses telemedicine with abdominal X-rays, but his practice will often take digital pictures of dental problems or skin conditions and send them to a specialist as well. An electrocardiograph (ECG) can also be sent via a phone line or fax machine in order for a specialist to listen to the animal's electrical heart patterns.

At the Princess Animal Hospital in Kingston, telemedicine has changed the way Latimer provides service to his clients, not to mention the range of services he can offer. He uses telemedicine in some form about once a week and mostly in conjunction with ultrasound, the interpretation of which has a long learning curve if a vet is not using it often. "Because of that, veterinary medicine has shied away from ultrasound," said Latimer. "When we wanted to be able to use ultrasound in our practice, the Internet and telemedicine was really the big push. We always wanted it, and then it became accessible."

When a veterinarian uses the telemedicine approach with ultrasound, images are digitized and sent through the Internet. Results are usually back by the end of the day.

"When ultrasounds weren't available for your average practitioner, they became the last diagnostic test recommended," he said. "We would try A, B, C and D and then refer to get an ultrasound done."

Aside from the peace of mind a pet owner feels in knowing results quickly, Latimer said swift results can sometimes mean the difference between an animal making it or not, adding that, many times, quick results have saved an animal's life in his practice.

There can be one pitfall, however. Veterinarians rely on specialists to let them know what is happening with an animal. But when a specialist

is not there in person, it is possible to miss something while capturing the image. "Or, you might have a specialist that might not be nearly as far along the learning curve of interpretation than the world-renowned guy," said Latimer. But he said the pitfalls of not performing an ultrasound are much more hazardous than using telemedicine to diagnose an animal.

"The specialist could pull up the images from a year ago and compare them with now," he said. "And not just the images—the lab tests, chest X-rays, too. It's like having an internal specialist here, looking over your shoulder."

#### SPECIALISTS AT YOUR FINGERTIPS

Across Canada, veterinarians are turning to telemedicine more often. Dr. Catharine Shankel of the Campbell River Veterinary Hospital in

British Columbia said her practice also uses some form of telemedicine about once a week, using mostly specialists in radiology.

"For every ultrasound we send via telemedicine, before, we would have sent them to Vancouver to have an ultrasound done directly," she said. "It's a nice way to have specialists at our fingertips."

And that could be one of the biggest advantages of telemedicine. When pet owners live in a rural area, the idea of travelling great distances to get an expert's opinion can be daunting and an expensive proposition, not to mention time-consuming. "Now clients have the option of coming to their general family practice, and having the same procedures done here," said Shankel.

The person performing the ultrasound still needs to be skilled in capturing an image to get

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**Dr. Catharine Shankel, veterinarian,  
Campbell River Veterinary Hospital**

an accurate diagnosis from the expert, she noted, agreeing that the only risk in using telemedicine is the absence of an on-site specialist.

"We need to be skilled in getting an image of the organs and there is quite a bit of skill involved in performing the ultrasound itself," she said. "Potentially, a specialist with all of their experience in ultrasound perhaps would have more insight on how to obtain perfect images of organs that are diseased."

At the Campbell River Veterinary Hospital, veterinarians have used telemedicine for ECGs as well, when a heart condition is suspected. "In a heart echocardiogram, we would send an ECG via telemedicine," she said. "Instead of being images of the heart, the ECG is a printout of the heart's rate and rhythms."

#### THE FUTURE OF TELEMEDICINE

It seems telemedicine is here to stay, and the technology will only get more precise. "It's a very valuable tool to have. I think it will increase in use, especially in rural areas and areas outside of urban centres," said Shankel.

Another area of telemedicine still being developed is real-time telemedicine. Through a special computer program, a veterinarian hooks the machine up to the Internet and a specialist is on the phone with the vet while watching the scanning—all at the same time. "It's basically the next step from a professional point of view," said Latimer of the Princess Animal Hospital. "And it will be used for continuing education, too."

There is even a large company in the United States that has specialists around North America who carry pagers that alert them to a veterinarian in need of service. A specialist gets a page from a veterinarian, and then goes to a computer to evaluate the information and prepares a report, which is sent off to the veterinarian. Latimer said between 60 and 70 cases a day are seen in North America for clients who never before had the opportunity to see a specialist.

Even though Tonto's story ultimately had a sad ending, owner Delanghe said it actually turned out to be positive. "I probably would have tried various things first, maybe this, maybe that, and I think Tonto would have suffered much more."

She likely would have taken Tonto to Ottawa to see a specialist, she said, which would have been traumatic for the 18 pounds of furry love that hated to be in a cat carrier. "Had we not had the diagnosis or the information from the specialist, we would have been geared towards thinking it was something with his lymph nodes and maybe tried something else, or maybe some kind of treatment," she said. "It's never an easy decision, but the result for Tonto was a lot less suffering, and that gave me peace of mind, so, in a way, it did have a positive end." 🐾