Laryngeal Paralysis Is First Sign of General Neurological Paralysis

Debby Handler knew something was wrong when “Will,” her 10-year-old yellow Labrador Retriever, began breathing heavily and his bark became hoarse. “He was not gasping for breath, but it was obvious his airway was starting to close down a bit,” says Handler of Ann Arbor, Mich.

Will was diagnosed with idiopathic laryngeal paralysis, a condition in which the muscles of the larynx become paralyzed. When paralysis sets in, the larynx cannot expand, which restricts a dog’s ability to breathe deeply. Most dogs with laryngeal paralysis exhibit loud, labored breathing and throat clearing, as Will did. The disease can cause life-threatening breathing obstruction if left untreated.

Laryngeal paralysis is a well-known upper respiratory problem first diagnosed in the 1970s. It affects older, large-breed dogs, most commonly Labrador Retrievers and Newfoundlands, but also other breeds and mixed breeds. A congenital form, affecting younger dogs, is seen in Bouvier des Flandres, Dalmatians, white-coated German Shepherd Dogs, Leonbergers, Pyrenean Shepherds, Rottweilers, and Siberian Huskies.

Bryden J. Stanley, B.V.M.S., M.Vet.Sc., DACVS, associate professor of surgery at Michigan State University College of Veterinary Medicine in East Lansing, Mich., began researching laryngeal paralysis in 2005. Her research showing that paralysis of the larynx is the first sign of general neurological degeneration was published last February in Veterinary Surgery.

Similar conclusions were made in a case study published in the May/June issue of the Journal of the American Animal Hospital Association. The research, conducted at the University of Tennessee, found that 11 dogs diagnosed with laryngeal paralysis also had signs of generalized neuromuscular dysfunction.

Stanley’s research showed that many dogs suffering from laryngeal paralysis experience esophageal problems. In time, they exhibit generalized neurological deterioration, initially noticeable in their hind limbs.

“They discovered that something we thought was unique to the larynx is not,” Stanley says. “Laryngeal paralysis is an early sign of a more general neurological degeneration.”

Looking Beyond the Larynx

Stanley’s study followed 32 dogs suffering from laryngeal paralysis and 34 healthy dogs in a control group. Seventy percent of the laryngeal paralysis cases Stanley studied were in Labrador Retrievers. The dogs in the control group were selected to match the age, sex and breed of the diagnosed dogs. The dogs ranged in age from 6 to 14 years old, with an average age of 11 years.

All dogs received esophageal radiographs, or esophagrams. Those diagnosed with laryngeal paralysis underwent laryngeal tieback surgery, the most common corrective surgery for the disease. The procedure involves using permanent sutures to hold open arytenoid cartilage so air can easily pass through the larynx.

The dogs returned for five follow-up examinations during the next year. Though the dogs’ exercising and breathing abilities improved after surgery, Stanley found some dogs appeared to experience more swallow problems. Additionally, 75 percent of the dogs diagnosed with laryngeal paralysis demonstrated esophageal dysfunction, though only 28 percent had a history of regurgitating or gagging.

Stanley also found that after surgery, 18 percent of dogs developed aspiration pneumonia, an inflammation of the lungs due to regurgitating gastric acid or food aspirating into the airway. These dogs had worse esophageal function than the other diagnosed dogs. Neither a dog’s neurological status nor history of regurgitation was an accurate predictor of aspiration pneumonia.

Stanley’s study also showed a general deterioration of neurological function in all dogs within a year of the initial laryngeal paralysis diagnosis. At the time of diagnosis, 31 percent of the dogs had abnormal neurological examinations, particularly related to their hind legs. Muscle wasting, weakness, unsteadiness, gait problems, and abnormal spinal reflexes were among the problems.

Within six months of the initial diagnosis, 58 percent of the dogs were

GOLPP More Accurately Defines Condition

Research conducted at Michigan State University shows that idiopathic laryngeal paralysis, a condition in which the muscles of the larynx become paralyzed, is actually part of a progressive general neuropathy. The condition eventually affects esophageal function and leads to generalized neurologic dysfunction, particularly in the hind legs.

As a result of the findings, Bryden J. Stanley, B.V.M.S., M.Vet.Sc., DACVS, associate professor of surgery, and her colleagues at Michigan State University suggest renaming the condition geriatric onset laryngeal paralysis polyneuropathy (GOLPP) to more accurately define the progressive disorder.

To further investigate GOLPP, Michigan State has formed a study group made up of surgeons, neuropathologists, diagnostic imaging specialists, internists, pathologists, anesthesiologists and molecular geneticists. They have recently received funding from the AKC Canine Health Foundation to investigate GOLPP. The goal is to provide more information about the disease and help for managing dogs that suffer from the condition.

To participate in the ongoing research, please contact Michele C. Fritz at fritzmi2@cvm.msu.edu or 517-432-9902. For more information about GOLPP, visit http://cvm.msu.edu/golpp. You may also contact the researchers by sending an e-mail to golpp@cvm.msu.edu.
abnormal. After one year, all dogs diagnosed with laryngeal paralysis showed signs of other nerves being affected. Some were unable to walk. Others experienced marked muscle wasting of hind limb muscles, spinal muscles and muscles on top of the head.

One such dog is “Bailey,” a 13-year-old yellow Labrador Retriever owned by Philip Baron of Cadillac, Mich. When Bailey was 10, Baron noticed the dog wheezed and coughed after walks. “I called it an old man’s hack,” Baron says. “I noticed that Bailey had a significant drop in energy during our daily walks, and he would have to rest several times during a relatively slow walk through the woods.”

Baron also noticed Bailey’s tongue and gums were discolored after exercise. “His tongue was a deep purple color, and he would essentially collapse when we got home,” Baron says.

Bailey was diagnosed with laryngeal paralysis and had laryngeal tieback surgery. The surgery greatly improved his quality of life, particularly when the dog and owner went for walks. “It was noticeable within days after the surgery,” Baron says. “His age affected the distance that we walked, but the quality of the walk was much better. He could prance and run, whereas before he was sluggish. His tongue and gums were back to their normal color even during a walk.”

After the surgery, Bailey’s breathing improved, but over the next two years, he began dragging his hind legs more. “Now, you can see some atrophy in the hindquarters, and because he is losing muscle mass, you can see his bone structure more,” Baron says.

While tieback surgery has improved Bailey’s quality of life, general neurological deterioration has been slow but gradual. “He has started to lose some muscle in his hind end,” Handler says. “You notice it in the way he sometimes attempted to go upstairs, and I think if I hadn’t encouraged him, he would have gone down right there.”

Subsequently, the veterinarian prescribed medication for Will’s arthritis, which has enabled him to once again climb stairs. The tieback surgery combined with the arthritis medication has greatly improved Will’s quality of life, Handler says.

Managing Laryngeal Paralysis

Stanley hopes her research can help prepare owners for the gradual nerve degeneration that follows a laryngeal paralysis diagnosis. “I think we can manage laryngeal paralysis, the swallowing issues and the resulting neurological progression better now because we know what to expect,” she says.

Baron has found that frequent exercise helps manage Bailey’s condition. “The less active he is, the more work he must exert to move around and walk,” Baron says. “However, if he gets out and stays active, he has more mobility.”

Handler has found that elevating the food bowl helps avoid aspiration pneumonia. She noticed Will fares better during feeding when she elevates his bowl, causing him to raise his front end higher than his rear.

While Bailey and Will are fairly active dogs living with the disease, not all laryngeal paralysis cases are so manageable. “Some dogs seem to progress more quickly,” Stanley says. “Occasionally, they deteriorate markedly within a year.”

Owners whose dogs have more immediate and degenerative cases of laryngeal paralysis are often distressed. Support networks dedicated to helping others cope provide understanding.

“One they’ve had a dog that suffered from laryngeal paralysis, people become committed to the disease,” Stanley says. “After they’ve nursed one through, they want to help others.”

With the help of those owners, Stanley is pursuing additional research to identify genetic causes of the disease. Researchers are also collecting pedigrees and blood samples to extract DNA. The goal is to determine the mode of inheritance and find a gene mutation in Labrador Retrievers and Newfoundlands.

“The real breakthrough will be characterizing what exactly this disease is and finding the underlying genetic mutations,” Stanley says. “We still have another 10 years of research, but it would be wonderful for the owners and the dogs if we can breed away from the disease.”

Purina appreciates the support of the Labrador Retriever Club Inc. and particularly Fran Smith, D.V.M., Ph.D., DACT, the LRC health chairwoman, in helping to identify topics for the Purina Pro Club Labrador Retriever Update newsletter.
Purina Pro Club offers many perks for members. Here are tips to help you tap into valuable member services and get the most of your membership.

**Submitting Weight Circles**

Weight circles are the colored circles on packages of Purina brand dog food that can be redeemed for Purina Points and used to order items from the Pro Club Rewards Brochure and dog food checks. When submitting weight circles, you should:

- Use a Weight Circle Claim Form. You may download a form at www.purinaproclub.com by signing into your account and clicking on "Pro Club Tools" on the red bar at the top of the screen. Then under Pro Club Forms, click on "Download Weight Circle Claim Form." You also may call Pro Club member services toll free at 877-PRO-CLUB or 877-776-2582.
- Fill out the Weight Circle Claim Form completely. A completed form expedites the processing.
- Always put your return address on the weight circle submission envelope.
- Submit a minimum of 200 pounds’ worth of weight circles.
- Submit only weight circles, not UPC codes. Only weight circles are valid for credit to your account.
- Effective Dec. 31, 2009, Purina Hi-Pro weight circles were no longer accepted.
- Weight circles and points from redeemed weight circles cannot be purchased or otherwise transferred.
- Do not submit torn and worn weight circles, and avoid taping multiple weight circles together.

**Certify Weight Circles**

Pro Club recommends that you mail your weight circles by certified first class mail or other traceable delivery method. This helps to ensure proof of delivery in the event Pro Club does not receive your weight circles. Pro Club is not responsible for weight circles not in its possession.

**Ordering Puppy Starter Kits**

Pro Club members may order Puppy Starter Kits for new owners that contain important information on caring for new puppies. You should only order Puppy Starter Kits for the puppies you currently have on the ground. Starter Kit information and coupon expiration dates are continually updated, so make sure you have only the most current Starter Kit information.

**Redeeming Purina Points**

Weight circles turn into Purina Points that can be redeemed for items from the Pro Club Rewards Brochure or dog food checks. When redeeming points keep in mind:

- Purina Points expire three years from the date of last activity. You are responsible for any taxes that may be owed as a result of points earned and/or redeemed.
- Your Pro Club account address

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**Purina-Sponsored Sporting Events December 2010 to February 2011**

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<th>Event</th>
<th>Date</th>
<th>Location</th>
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<tr>
<td>Weimaraner National Field Championships</td>
<td>Dec. 4 to Conclusion</td>
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<tr>
<td>English Springer Spaniel National Amateur Championship</td>
<td>Dec. 6-10</td>
<td>Cambridge, MD</td>
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<tr>
<td>UKC (United Kennel Club) Battle of the Breeds</td>
<td>Dec. 10-11</td>
<td>Ada, OK</td>
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<tr>
<td>UKC Grand American</td>
<td>Jan. 7-8</td>
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<tr>
<td>Continental Championship</td>
<td>Jan. 17 to Conclusion</td>
<td>Dixie Plantation, Greenville, FL</td>
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<tr>
<td>UKC Winter Classic</td>
<td>Jan. 28-29</td>
<td>Albany, GA</td>
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<tr>
<td>National Open Shooting Dog Championship</td>
<td>Feb. 7 to Conclusion</td>
<td>Sedgefield Plantation, Union Springs, AL</td>
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<tr>
<td>National Championship</td>
<td>Feb. 14 to Conclusion</td>
<td>Ames Plantation, Grand Junction, TN</td>
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*This table lists some, but not all, upcoming sporting events sponsored by Purina.*
Pro Plan Introduces Two New Dog Products

Purina Pro Plan is introducing two new dog products in early February: an all life-stages dry dog food, featuring a small kibble and made with real lamb as the No. 1 ingredient, and a dog snack formerly marketed as Purina Carvers. Pro Plan Lamb & Rice Small Bite Formula contains 26 percent protein and 16 percent fat. This nutrient-dense food offers complete and balanced nutrition appropriate for puppies, pregnant or nursing dams, adults and senior dogs. Pro Plan Lamb & Rice Small Bite Formula comes in three package sizes: 6 pounds, 18 pounds and 37.5 pounds. Pro Plan Roasted Slices is made with over 80 percent real chicken. Already a dog fancy favorite used ringside and for training, this dog snack is high in protein and highly palatable. Roasted Slices can be fed whole or torn into bite-sized portions. Lightly seasoned and oven-cooked, this dog snack is made without corn, wheat, artificial colors or flavors.

Pro Plan is sold at pet specialty and farm supply stores. For information, visit www.proplan.com or to talk with a pet nutrition consultant, call 800-PRO-PLAN (800-776-7526) from 9 a.m. to 4 p.m. Central time Monday through Friday.

Pro Club Member Benefits
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should be current. Pro Club is not responsible for items sent to wrong addresses.
• Purina dog food checks have a one-year expiration and cannot be reissued if you allow them to expire.
• As stated on the dog food check, only one $7 check can be used with the purchase of one bag of a Purina product. The terms on the check state “limit one check per bag.”
• Rewards — dog food checks, veterinary checks, gift certificates and gift cards — are like cash and should be protected. Purina is not responsible for replacement in the event of loss, theft or destruction.
• Pro Club Terms and Conditions state that three to five weeks should be allowed for processing and delivery of checks, and six to eight weeks should be allowed for processing and delivery of merchandise, gift cards and gift certificates.
• Visit www.purinaproclub.com to see the complete Terms and Conditions or to view your Purina Point balance.

Purina-Sponsored Dog Shows* December 2010 to February 2011

<table>
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<th>Event</th>
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<tr>
<td>Lone Star Winter Classic</td>
<td>Dec. 9-12</td>
<td>Dallas, TX</td>
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<tr>
<td>Holiday Cluster</td>
<td>Dec. 10-13</td>
<td>Long Beach, CA</td>
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<tr>
<td>Cleveland Crown Classic</td>
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<td>Indio, CA</td>
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<tr>
<td>Florida Classic Cluster I &amp; II</td>
<td>Jan. 13-23</td>
<td>Brooksville, FL</td>
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<tr>
<td>Foothills Dog Show Cluster</td>
<td>Feb. 17-20</td>
<td>Spartanburg, SC</td>
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<tr>
<td>Rocky Mountain Cluster</td>
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<td>Denver, CO</td>
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<tr>
<td>International Kennel Club (IKC) Dog Shows</td>
<td>Feb. 24-27</td>
<td>Chicago, IL</td>
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