



Long Island Veterinary Specialists

Where You Refer Your Patient First Makes All The Difference

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## **Spontaneous Pneumothorax**

Catherine A. Loughin, DVM, DACVS, DACCT, Staff Surgeon

Spontaneous pneumothorax can be seen in both dogs and cats and occurs with no history of trauma or iatrogenic penetration into the thoracic cavity. If the normal physiologic negative pressure within the thorax that maintains inflation of the lungs is lost, air will accumulate within the thorax and the lungs will collapse. There are two access routes allowing air into the thorax that will result in a spontaneous pneumothorax: the airways and the esophagus. The first occurs when there is compromise of lung or tracheal tissue resulting in air escaping into the thoracic cavity. Compromised lung tissue leading to a spontaneous pneumothorax is often caused by bullae or bleb formation at the edges of the lung lobes. These are tiny air-filled sacs that can rupture within the thorax (Figure 1). Bullae and blebs are most frequently found in dogs with no concurrent lung disease and it is the most common cause of spontaneous pneumothorax. Bullae and blebs are less common in cats, but they are the main cause of feline cases of spontaneous pneumothorax.

The second route of entry into the thorax is from esophageal perforation that results in both pneumothorax and additional air accumulation in secondary locations causing subcutaneous emphysema or pneumomediastinum. Secondary causes of spontaneous pneumothorax in dogs include cancer, bacterial pneumonia, fungal



infection, pulmonary abscesses, grass awn migration, pulmonary thromboembolism, and heartworm disease. In cats, spontaneous pneumothorax can be caused by inflammatory airway disease, heartworm or lungworm infection, and bronchopulmonary dysplasia. In some patients the cause is unknown.

Spontaneous pneumothorax occurs primarily in deep-chested, large breed dogs with no sex predilection.

Siberian Huskies and other Northern breeds are overrepresented. There are no known common associations in cats. Clinical signs noted in dogs include increased respiratory rate, cough, anxiety, cyanosis, overinflation of the thorax, and an

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## Neurology/Neurosurgery Department



Patrick Roynard, DVM
MRCVS, DACVIM (Neurology)
(Neurology/Neurosurgery)



Neil Mittelman, DVM
DACVIM (LAIM)
(Neurology/Neurosurgery)

### Who are we?

Our board-certified Neurologists are experts in diagnosing and treating complex neurological conditions in animals. With knowledge in today's leading-edge technology and expertise in ongoing research and treatment protocols, your pet will have access to the appropriate care and treatment necessary.

## Conditions commonly seen by our board-certified neurologists:

- Chiari-like malformation and syringomyelia
- Degenerative spinal diseases
- Encephalitis
- Epilepsy
- Hearing and vision loss
- Intervertebral disc herniation
- Intracranial and spinal malformations

- Movement disorders
- Narcolepsy/cataplexy
- Neoplasia
- Neuromuscular diseases
- Stroke
- Traumatic spinal and head injury
- · Wobbler's disease

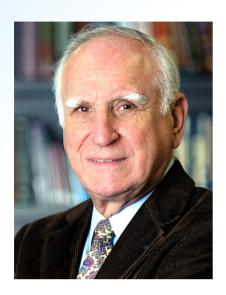
### Advanced medical procedures performed:

- Brainstem Auditory Evoked Response (BAER)
- CT Scan
- Electromyography (EMG)
- Spinal Puncture (Spinal Tap)
- MRI (3.0 Tesla Scanner produces the highest-quality images possible)
- Muscle and Nerve Biopsies
- Nerve Conduction Velocity (NCV) Testing
- Radiography (X-Rays)
- Stereotactic Brain Biopsy (minimally invasive)

Appointments available 6 days a week.

To refer a patient:

## A NOTE FROM THE EDITOR



This year, Long Island Veterinary Specialists, is entering its 23rd year as a referral center that is rapidly progressing in those renovations and upgrades that are making it functionally an even more efficient hospital with its array of specialists and services that are at the forefront of veterinary care in the northeast. Our 3 Tesla MRI and spiral 3-dimensional CT scanner, our digital radiography system, and thermography suite are fully operational. Staff members at LIVS continue to lecture nationally and internationally bringing innovations to a broad audience of veterinarians.

The COVID guidelines that have been meticulously followed have permitted a constant flow of patient care unhampered by the novel procedures implemented to minimize viral transmission from client to staff and the reverse. Acceptance of the longer processing times needed is gratifying.

The distribution of the new COVID vaccines and the diminution of the viral spread numbers are signs that the country is moving toward a return to an increase in social interaction. Getting back to what was common activity is comforting even if some things will never be as before.

So far, we've managed to survive a snowstorm on Long Island brought on by a sudden freezing cascade from the arctic reaching down to Texas, which had not winterized its natural gas pipelines, nuclear reactors, or windfarms causing much disruption and suffering. The jet stream usually is a barrier blunting the northern cold but apparently global warming weakened it and as contradictory as it may seem, global warming will allow for more wintery blasts than before!

We have a new president in 2021 who will need much help to pass through the policies he and his party have promised the public. As Americans, we wish him well and hope that the US can still be a world leader on a planet that is changing daily. As former attorney general Eric Holder stated on his Initiative website, "We do ourselves and our great nation a grave disservice when we trade the noisy discord of honest, tough, and vigorous debate for the quiet prejudice of inaction and cold silence of consent."

We are pleased to continue the extended hours for consultation in all our departments to serve our clients more efficiently. Appointments can be made through our telephone receptionists at 516-501-1700.

Again, we welcome your comments e-mailed to Imarino@livs.org.

Leonard J. Marino, MD, FAAP, LVT



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"Outstanding! Great for comfort and the pet's ability to maneuver around." Lorine A.







"My dog did very well with the collar, and it kept her

away from the incision."

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## **Spontaneous Pneumothorax**

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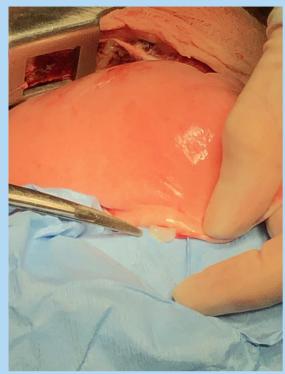


Fig. 1 - A bleb is noted along the periphery of the lung lobe

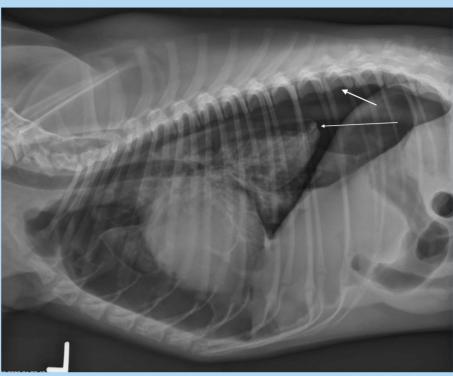


Fig. 2 - Left lateral radiograph of a dog with a pneumothorax. Note the collapse of the lung lobe (thin arrow) and the raised heart.

orthopneic posture. Common signs noted in cats are respiratory distress, cough, collapse, lethargy, anorexia, and vomiting.

Initially, we recommend 3-view thoracic radiographs to assess for pneumothorax (Figure 2). This diagnostic test rarely confirms the underlying cause and additional advanced imaging such as a CT scan often becomes necessary (Figure 3). Before referral, a therapeutic thoracocentesis along the dorsolateral thorax is necessary to stabilize the patient, as well as supplemental oxygen therapy. Once the patient arrives at our facility, we will reassess with thoracic radiographs or TFAST for an additional accumulation of air. Before the CT scan, we will do an additional thoracocentesis or place chest tubes to keep air out of the cavity and allow the lungs to fully expand for imaging. Supplemental oxygen will be necessary at all times to assist with increased oxygen delivery to the body.

Treatment options vary depending on the severity of the clinical signs. The underlying cause of spontaneous pneumothorax dictates which treatment option will be most appropriate. Most often, spontaneous pneumothorax cannot be managed medically (oxygen supplementation and chest tube management) long-term, and surgical intervention is warranted to remove the primary cause of the pneumothorax.

Surgical treatment most often includes a lung lobectomy. This can be accomplished using three different approaches to the thorax: minimally invasive thoracoscopy, median sternotomy, or lateral thoracotomy. The choice of the approach depends on the underlying cause of the disease and the location of the affected lung lobe. If laterality is determined via the CT scan, then a thoracotomy is the best option. If we cannot determine the cause then a median sternotomy is chosen. Once the thoracic cavity is open, each lung

lobe is inspected for an abnormality causing a leak. If no overt abnormality is noted, the thoracic cavity is filled with warm saline; bubbles will appear in the saline from the lung lobe that is affected. Stapling equipment is used to remove the lung lobe at the base. The lobe will be submitted for histopathology. The warm saline will be used again to assess the remaining bronchus for any leaks. If a chest tube was not placed before surgery, one is placed before closing the thorax.

We will monitor chest tube production in the ICU postoperatively. Once air and fluid are no longer accumulating (and being removed via the tube), the tube is removed and the patient will most likely be discharged the next day.

Long-term outcomes for dogs with spontaneous pneumothorax are excellent with surgical intervention and lung lobectomy. Very rarely are cases not amenable to surgical resection and

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# 24/7 EMERGENCY CALL CENTER

Long Island Veterinary Specialists offers a 24/7 staff-operated Emergency Call Center for you and your clients in case of an emergency.

LIVS 24/7 Emergency Call Center provides:

- A digital answering system for your hospital with no service fees
- A record of messages that are emailed and left on your phone
- A reliable Call Center equipped with individuals who have a passion for helping animals in need
- A live digital feed of all calls that come into the hospital that can be viewed from any location

All information on referred and/or emergency cases will be sent to your facility for follow-up care.

Questions? Please contact:
Jeannie O'Brien, Referral Outreach Director,
516-501-1700 ext. 272
JSpirakis-OBrien@livs.org

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## **Spontaneous Pneumothorax**

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those patients' prognoses vary depending on the severity of the disease. Recurrence rates of spontaneous pneumothorax are approximately 3% with surgical treatment and as high as 50% with medical treatment. Mortality rates reflect the need for appropriate surgical management. The mortality rate with surgery is 12% and is over 50% with medical management.

Outcome data for cats is more limited. The prognosis can still be good overall depending on the underlying cause and response to therapy. In a previous study, 54% of the cats evaluated survived to discharge with the majority being treated medically. For cats with small volume pneumothoraces, conservative therapy with oxygen and chest tube/thoracocentesis may offer a good outcome. Surgery may be needed in severe cases or when there is persistent pneumothorax present despite medical management.

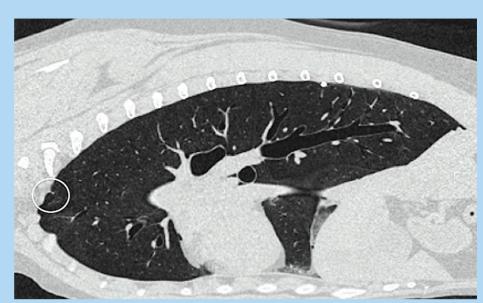


Fig. 3 - A sagittal view of a CT scan of a dog with a bleb on the periphery of the lung lobe (circle).



Where You Take Your Pet First Makes All The Difference



### Radioiodine Therapy

Radioiodine therapy at Long Island Veterinary Specialists is the preferred choice! Radioiodine therapy (I-131) is the safest treatment for hyperthyroidism in cats and has been proven to be 96-98% effective, employing a single treatment. At LIVS, our specially designed radioiodine facility allows us to accommodate many patients and permits quick access to this life-saving therapy.

- Full-time, on-site medical staff provides care 24-hours a day
- On-site board-certified radiologists, internists, and oncologists
- Premier facilities feature cat condos, movies, and Animal Planet®
- LIVS' 3-day program allows the patient to go home sooner

Call to refer your patients today! 516-501-1700 | www.livs.org

## **Using Food as Medicine, Part 1**

Michel Selmer, MS, DVM, CTCVMP Integrative Medicine



Nutrition is the Centerpiece of Good Health. As the saying goes, you are what you eat. The same goes for our pets, which is why I've dedicated an entire series to using food as medicine. We really are what we eat, as whatever is eaten becomes part of the body at a cellular level. This isn't about picking the best kibble. In fact, kibble isn't really ideal at all. A proper, balanced diet for Fido is prepared with a variety whole food. Feed the best you can afford to your pet patients to provide the fuel necessary to live—well—for many many years to come. **Here are a few guidelines:** 

- Feed wholesome foods to fuel the body with good nutrition.
- Feed foods that are locally grown as they will be appropriate to balance with the climate.
- Feed organic and/or grass fed meats when possible.
- Avoid processed foods.

If you were to take away all of my other tools as a veterinarian—all other modalities, all surgical options, all medicinal remedies—but were willing to implement a prescribed diet designed for your pet, I'd still be able to treat many of the diseases and symptoms I treat in my practice today. Many diseases can be cured using food as medicine because food is the critical centerpiece to ideal health. In fact, there is NO ideal health created without it. Unfortunately, the way we feed our dogs today would be considered absolutely unacceptable as a way of feeding our children,

even according to the SAD "Standard American Diet" standards.

Imagine this. You have an active 3-year old daughter. For breakfast, you feed her a bowl of shredded wheat and almond milk. Not an entirely awful breakfast, really. Then, when lunchtime rolls around, you feed her a bowl of shredded wheat and almond milk. A snack of a bowl of shreddedwheat and almond milk at 3 PM, and a bowl of shredded wheat and almond milk for dinner. Do this day in and day out and that "not entirely awful" breakfast becomes a diet so undeniably lacking in nutrients, your daughter would be in jeopardy of serious illness.

The same is true for our dogs. We pick a "not entirely awful" kibble and then feed it to them day in and day out, wondering why their health is suffering. Yet, the pet industry is so dominated by pet food manufacturers using their deep pockets to sell us "better" dog food, few people even remember other dog food options. Have you ever contemplated how a dog food company could state that there is one appropriate exact recipe/diet that you can feed your dog for every meal of its entire life and it result in good health? What if Kellogg's made the same claim for your children?

While the pet food industry first came on the scene with Spratt's Patent Meal Fibrine Dog Cakes

in 1860, the majority of family pets ate table scraps (a variety of leftover meat, vegetables and starches) until the 1950s. The truth is, dry dog food (kibble) was originally designed as short term option for dogs in war overseas—easy to store and needing no refrigeration.

In 1964, the Pet Food Institute (a lobbying group for the now multi-billion dollar pet food industry) began a compelling campaign to get people to stop feeding their dog anything other than packaged dog food. They funded and published "reports" that showed up everywhere, detailing the benefits of dry dog food and even produced a radio advertisement focused on the "dangers of tableof dry dog food and even produced a radio advertisement focused on the "dangers of table scraps." Their work—combined with the industry's spending a combined \$50 Million a year on advertising—was undeniably successful... and undeniably damaging to pet health.

Feeding dry food to your dog every day, twice a day is the equivalent of feeding breakfast cereal three meals a day. Convenient, and shelf stable, yes. Decent in a pinch, yes. But, full of empty calories and hard on the body.

"It matters not whether medicine is old or new, so long as it brings about a cure. It matters not whether theories are Eastern or Western, so long as they prove to be true."



Please stay tuned for the next newsletter, and Using Food as Medicine, Part 2: The Essentials

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### **EMERGENCY DEPARTMENT OPEN 24/7**



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### From the Beginning...



### To the Present...



### Into the Future...





## **SURGERY**

## TOTAL HIP REPLACEMENT SURGERY AT LIVS







**HYBRID THR** 



**CEMENTLESS THR** 

Total hip replacement (THR) is designed to eliminate the source of discomfort and restore range of motion by replacing the arthritic joint with an artificial hip joint prosthesis. THR surgery is a state-of-the-art procedure, very similar to the operation in humans. The arthritic femoral head and neck are removed and replaced with a metal head and stem (cobalt chrome metal). The arthritic socket is removed and replaced with a plastic cup (high molecular weight plastic). The metal head and plastic cup fit together like the original ball-and-socket joint, providing support and pain-free, mechanically sound movement almost immediately after surgery.



Dominic J. Marino, DVM Dip. ACVS, Dip. ACCT, CCRP

**Dr. Dominic J. Marino** is one of the most experienced hip replacement surgeons in the country. He has performed over 2,000 THR procedures, starting in the early nineties. His areas of special interest include joint replacement surgery, brain surgery, and spine surgery. Dr. Marino has lectured nationally and internationally on these subjects.

To learn more about Total Hip Replacement procedures and other Hip Dysplasia treatment options, or to refer a case:

516-501-1700 | livs.org





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### **Integrative Medicine Department**



Michel Selmer, DVM, MS CTCVMP

Our Integrative Medicine Team takes a holistic and gentle approach to treating animal disorders. While combining techniques of both Eastern and Western medicine, our Integrative Medicine Team puts an emphasis on the patient's emotional and mental well-being.

#### Conditions seen:

- Anxiety
- Arthritis
- Cancer
- Chronic Fatigue
- Letharqy
- Persistent Pain

### Therapies offered include:

- Acupuncture
- · Cold Laser Therapy
- Food Therapy
- Hemp Therapy
- Herbal Medicine
- Tui Na Massage







To refer your clients or to learn more, contact our team at 516-501-1700 or visit our website at www.livs.org