We encourage you to email Angell's specialists with questions. We hope you will use Angell as a resource, and we look forward to working with you as we continue our legacy of providing compassion and care for animals.

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Email: cardiology@mspca.org Web site: www.mspca.org/cardiology

Dermatology Service
Referral Liaison: Rebecca Stlaske
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Email: dermatology@mspca.org Web site: www.mspca.org/dermatology

Emergency Service
Referral Line: 617 522-7282 press 1 Referral Fax: 617 989-1633
Web site: www.mspca.org/emergency

Neurology Service
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Referral Line: 617 541-5140 Referral Fax: 617 989-1666
Email: neurology@mspca.org Web site: www.mspca.org/neurology

Oncology Service
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Pain Medicine Service
Referral Liaison: Lisa Canale
Referral Line: 617 541-5140 Referral Fax: 617 989-1666
Email: painmedicine@mspca.org Web site: www.mspca.org/painmedicine

For all other referrals, please continue to contact Eleanor Cousino, Angell Referral Coordinator, at 617 522-5011, or by fax at 617 989-1635.

Is your client new to Angell? Send them to www.mspca.org/directions for detailed directions to our location.

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VETERINARY REFERRAL NEWS FROM ANGELL ANIMAL MEDICAL CENTER

angell® PARTNERSINCARE
VOLUME THREE: NUMBER TWO SPRING 2009

MECHANICAL VENTILATION AT ANGELL

When patients develop respiratory failure, mechanical ventilation can be a life-saving intervention. Mechanical ventilation is used for Angell's patients who suffer from severe lung disease or who cannot ventilate adequately.

Veterinary technician, Traci Marchese, monitors a patient on the respirator.

There are three basic reasons that anesthetizing, intubating and mechanically ventilating patients can be life-saving:

Increasing fraction of inspired oxygen (FiO2): The ventilator is able to deliver an increased FiO2 — as high as 100% more than can be achieved using other techniques. In addition, the exact FiO2 can be determined and manipulated.

Positive end-expiratory pressure (PEEP): Disease in one area of the lung can lead to collapse of *not only* that area, *but also* neighboring and otherwise normal regions of the lung. Preventing the intrapulmonary pressures from reaching zero by providing PEEP keeps regional atalectasis from occurring and enables gas exchange in these lung regions. This is arguably the most important function of mechanical ventilation in certain cases.

Facilitate breathing: Mechanical ventilation, in some cases, is the only way to prevent respiratory muscle fatigue and arrest. Anesthetizing and ventilating these patients are very effective ways to relieve their suffering and can prevent a patient's struggle to breathe during a respiratory crisis.

Mechanical ventilation requires a team of highly trained doctors and technicians. Advanced cardiopulmonary monitoring is required 24 hours a day to optimize patient care. Routine monitoring of a ventilated patient includes capnometry, pulse oximetry, continuous ECG, arterial and central venous blood pressure monitoring, urine output monitoring and intermittent blood gas analyses.

At Angell, at least one doctor from the Emergency/Critical Care service remains at the bedside of the ventilated patient at all times. This doctor constantly adjusts the ventilator settings and sedation protocol to tailor the therapy specifically for each patient's condition.

Recently, Chloe, a cat with an aldosterone-secreting adrenal tumor that led to severe hypokalemia and muscle weakness, was ventilated until high-dose potassium supplementation and spironolactone therapy improved her potassium levels. Another recent success story was Krissy, a dog with severe pneumonia secondary to laryngeal paralysis. She was already anesthetized and intubated when she was transferred to Angell from her referring hospital. She went on to make a full recovery with the help of a laryngeal tieback surgery and several days of mechanical ventilation.

Early identification of patients who may benefit from mechanical ventilation increases the chances of success. If you believe you have a patient who may benefit from ventilation at Angell, please call 617 522-7282.

INSIDE

PRACTICE TIP: USE OF FENOLDOPAM IN CATS WITH ACUTE RENAL FAILURE

Jen Holm, DVM, DACVECC

Acute renal failure, common in cats, can result from a variety of causes, such as ischemic, toxic and infectious insults. Although IV fluid therapy is a cornerstone of treatment, diuretic therapy should be considered in cats who become oliguric. Classically, low-dose dopamine has been used to target two main renal dopaminergic receptors. Renal dopaminergic 1 (DA-1) receptor stimulation increases intracellular cyclic adenosine monophosphate (c-AMP)-dependent kinase activity, and results in renal artery vasodilation, inhibition of Na/K ATP activity, inhibition of angiotensin II and inhibition of ADH. Stimulation of renal dopaminergic-2 (DA-2) receptors inhibits noradrenalin, rennin and Na/K ATP activity. However, the response to low-dose dopamine in cats with acute oliguric renal failure is inadequate, and it was long suspected that cats might lack renal DA-1 receptors.

CONTINUED ON PAGE 3

Jen Holm, DVM, DACVECC, of Angell's Emergency and Critical Care service.

CASESTUDY

Plastic and Reconstructive Surgery

Michael M. Pavletic, DVM, DACVS

PATIENT

Charlie, a Bernese Mountain Dog, under one year of age.

PRESENTING CONCERN: CLEFT LIP

Charlie and the cleft lip defect.

Close-up view of cleft lip defect.

Immediate postoperative photograph of Charlie.

Charlie at suture removal.

Cleft lip (Cheiloschisis) is the incomplete closure of the upper lip. The split-lip loosely resembles the upper lip of a rabbit, giving rise to the term, "hare-lip." In humans, cleft lip is seen in approximately 1 in 1,000 live births, although the frequency can vary according to race and sex. There are no statistics currently available regarding the frequency of cleft lips in the general canine population, although it has been reported in a variety of breeds, including brachycephalic breeds such as the Boston Terrier and the Pekingese, as well as Schnauzers, Labrador Retrievers, Cocker Spaniels, Dachshunds and German Shepherds. Cleft lips have also been seen in Bernese Mountain Dogs, like Charlie.

Cleft lip appears to be an inheritable trait in dogs, although nutritional, hormonal and mechanical factors may also contribute to cleft lip formation for these fetuses. In addition, toxins and viruses may affect cleft lip development in canines. Dogs with cleft lips often experience other anomalies including cleft palate (a central defect of the hard and soft palates). This combination creates a challenging extension to the problem.

Dogs with a cleft lip can eat and drink without a great deal of difficulty, although it is not uncommon for food and water to drool out of the mouth through the defect. Correction of cleft lip generally has a high success rate, and the complete function of the mouth can be restored while also achieving a positive cosmetic outcome.

DIAGNOSIS/TREATMENT

Charlie, an otherwise bright and healthy Bernese Mountain Dog, presented with a cleft lip and a small adjacent palatal defect: slightly deviated upper incisor teeth. Charlie also had difficulty fully retaining water and food in his mouth when eating.

Surgical reconstruction was accomplished using a surgical procedure developed by Dr. Pavletic that realigned Charlie's outer lip to the midline of his face. The inner mucous membrane and outer skin surfaces were precisely incised and sutured, restoring facial symmetry. Postoperatively, Charlie was fed soft food for the following two weeks and wore an Elizabethan collar to prevent rubbing or pawing at the surgical area until healing was complete. Sutures were removed after two weeks.

FOLLOW UP

Charlie ate normally and resumed playful activities with his owners. An additional benefit of this surgery was the relatively normal appearance of this wonderful dog.

FOR MORE INFORMATION

Dr. Pavletic is the Chair of Angell's Surgery Department and specializes in soft tissue surgery. He is a recognized specialist and lecturer in the area of plastic and reconstructive surgery for the closure of problematic defects secondary to trauma, cancer surgery or congenital defects. Dr. Pavletic is the

Director of Surgery at Angell, Mike Pavletic, DVM, DACVS

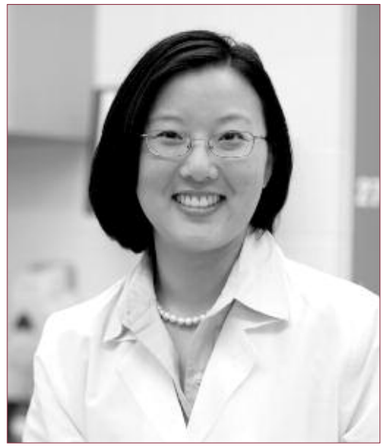
author of the *Atlas of Small Animal Wound Management and Reconstructive Surgery*. The third edition of this reference book for veterinary surgeons will be published by Wiley Blackwell later this year. Dr. Pavletic and the other Angell surgeons are available for consultation on a variety of orthopedic and soft tissue procedures.

To refer a patient to Angell's Surgery service, please contact Referral Coordinator Eleanor Cousino at 617 522-5011. For more information, please visit www.mspca.org/surgery.

CLINICALSTUDY

Dermatology

Kathy Tater, DVM, DACVD



Kathy Tater, DVM, DACVD

For information on other clinical studies at Angell, please visit www.mspca.org/studies.

Dear Doctors,

The Angell Dermatology service is participating in an FDA-approved, multi-center clinical drug trial to evaluate the safety and efficacy of a drug for the treatment of feline allergic dermatitis.

To be considered for the study, a cat would need to have generalized or localized year-round pruritus in addition to at least one of the following clinical signs: military dermatitis, self-induced alopecia, excoriations or eosinophilic plaques. Cats would also need to meet the requirements listed below to rule out flea allergies and food allergies,

Flea Control: Any cat considered for the study must be on a current flea adulticide and have been treated with a flea adulticide for at least one full month prior to referral.

Food Trial: All cats must have completed or attempted an elimination diet prior to entry in order to rule out food allergies.

If you would like to refer a case for possible study enrollment, please fax a completed Angell Dermatology referral form to 617 989-1613 and write FELINE ALERGY STUDY as the reason for referral. This form is available online at www.mspca.org/dermatology. We will schedule an appointment for your client when your client calls the Dermatology service. During the initial appointment, we will perform a full dermatology evaluation and discuss enrollment in the study along with other options for managing the allergies. Clients will be responsible for all costs of the initial appointment. However, if the client declines other options for allergy management and elects to participate in the study, he or she will receive free recheck examinations, blood work and monthly flea preventative during the course of the three-month study.

Please start the flea adulticide regimen and food trial as soon as possible when considering sending cases for inclusion in the study. Thank you.

If you have any questions or would like to discuss a case with me, please feel welcome to contact me by phone or e-mail at 617 524-5733 or dermatology@mspca.org.

Sincerely,

Kathy Tater,
DVM, DACVD

PRACTICE TIP: USE OF FENOLDOPAM IN CATS WITH ACUTE RENAL FAILURE

CONTINUED FROM PAGE 1

A study in 2003 identified that DA-1 receptors do exist in feline kidneys, but in lower amounts than in other species. Additionally, this study found that the feline DA-1 receptor has a better affinity for fenoldopam, a selective DA-1 agonist.[1] Recently, another study documented that a fenoldopam infusion at a dose of 0.5 µcg/kg/minute significantly increased urine output, sodium excretion and fractional excretion of sodium in healthy cats.[2] Although no clinical studies exist to date in oliguric cats with acute renal failure, fenoldopam has been used in clinical cases at Angell Animal Medical Center. Encouraging results have also been obtained with fenoldopam in experimental studies with dogs, showing that renal blood flow and glomerular filtration rate is protected during acute hypovolemia.[3] With such results we may expect to see further studies documenting its use in our veterinary patients.

References:

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2. Simmons JP, Wohl JS, Schwartz DD. Diuretic effects of fenoldopam in healthy cats. J Vet Emer Crti Care 2006:16(2) 96-103.

3. Halpenny M, Markos F, Snow HM et al. Effects of prophylactic fenoldopam infusion on renal blood flow and renal tubular function during acute hypovolemia in anesthetized dogs. Crit Care Med 1002; 29(4):855-60.