

# Feline Symposium

Cats may also urinate outside the litter box because of surface or location preferences/aversions. Dr. Littman recommended experimenting with different types of litter (clumping vs. regular vs. less dusty litter; unscented vs. deodorized litter; sand, dirt, etc.), cleaning the litter regularly, and using several litter boxes in different locations.

## Feline Arterial Thromboembolic Disease

Characteristically feline and exquisitely tragic, feline arterial thromboembolic disease (FATE) is the typical presentation of “stroke” in cats. **Dr. Annika Linde**, resident in cardiology at VHUP, discussed the underlying causes, pathogenesis, clinical signs, diagnosis and treatment of FATE.

Arterial emboli are not uncommon in cats, said Dr. Linde. “Cats experience these thromboembolic events more frequently and more easily than other species would,” she explained.

Cardiomyopathy either hypertrophic, restrictive or dilated – is the chief cause of FATE. In fact, said Dr. Linde, over 90 percent of cats afflicted with FATE have underlying heart muscle disease. Other etiologies include hypercoagulability, neoplasia, corticosteroid administration and presence of a foreign body.

Cats are predisposed to clot formation because their red blood cells are prone to aggregation, their platelet volume:body mass ratio is high, and their platelets have a propensity to aggregate. This tendency is exaggerated when endothelial damage is present or blood flow is sluggish as a result of heart disease. In cats afflicted with cardiomyopathy, the left atrium the cardiac delta to the systemic circulation often enlarges. “If a thrombus formed in this area dislodges,” she explained, “it can go directly out into the body and cause the syndrome that we see.”

Most commonly, a “saddle thrombus” – a clot lodged at the aortic trifurcation in the caudal abdomen – forms. Alternatively, thrombi may settle in the smaller channels, such as the brachial, renal or femoral arteries. Clinical signs depend on the location at which the thrombus/thrombi lodge(s).

The typical FATE patient is a middle-aged-to-older cat, although cats of any age can be afflicted. FATE occurs in male cats with twice the frequency as in females. Common clinical signs include pain – often accompanied by

vocalization, and cold, blue, paralyzed limbs (bilateral or unilateral; usually hind limbs). Affected cats may also exhibit vomiting, difficulty breathing and signs associated with renal failure. Alternatively, sudden death may be the only clinical sign, particularly if clots lodge in the left heart, valvular channels or proximal aorta. The other reason cats often do not present until end-stage damage has occurred, said Dr. Linde, is that “they are very good at hiding symptoms.”

FATE is diagnosed by a combination of cardiac evaluation, blood pressure measurement and laboratory tests. Heart auscultation may reveal tachycardia or – in late stages – bradycardia, arrhythmias, and murmurs. Electrocardiography (ECG) might show abnormal QRS complexes. On thoracic radiographs, the heart silhouette may appear atypical, the left atrium may appear enlarged and fluid may be apparent in the lungs as a result of secondary congestive heart failure. Echocardiography often reveals thickened heart walls and constricted chambers,

particularly since HCM is the most common form of cardiomyopathy in the cat. However, other cardiomyopathies can also be the underlying etiology. Doppler analysis may show reduced blood pressure in affected limbs. Renal values and muscle enzymes may be elevated, indicating, kidney and muscle damage, respectively.

FATE is a clinical emergency that must be treated aggressively. Therapy includes pain control, vasodilators and thrombolytic agents, such as streptokinase, urokinase and tissue-plasminogen activator (t-PA). Underlying heart disease also must be addressed, and additional thrombus formation prevented by either aspirin or coumadin.

Though treatment options are available, many cases of FATE have bad outcomes. Of 144 total cases analyzed in two separate studies between 1977 and 1998, approximately one third of affected cats died and one third were euthanized. The mean survival time in the remaining 1/3 was about one year.

–Joan Capuzzi Giresi, C’86, V’98

## Foal Sitting

**We need your help.** Do you have time to volunteer next Spring, February through June (an average of one shift or more per week) and don’t mind getting dirty or hard work? Do you like horses and love foals? Are you curious about what cutting edge veterinary medicine is all about? Are you over 16? If so, come and join our neonatal intensive care team as a foal sitter.

Working in the NICU is like nothing you have ever done before. You will be working with critically ill newborn foals (and occasionally other newborns) that are being watched over by their anxious and attentive dams. You may be asked (after being instructed) to “sit” with the foals, insuring that a variety of patient lines (including intranasal oxygen lines, nasotracheal tubes, nasogastric feeding tubes, urinary catheters, and intravenous catheters) are not pulled out. Depending on the time of day you choose to work you will help with a variety of diagnostic and therapeutic procedures, which may include catheterization, radiography, and ultrasonography. During late night shifts you may be helping us while we work up emergencies or watch us foal mares in our high-risk pregnancy program. Of course, there are more mundane chores as well, such as putting a dent in a mountain of laundry, restock-

ing supplies or cleaning.

The work can be strenuous. There is a lot of lifting and kneeling. You have to be willing to get dirty – changing foal diapers, catching urine, etc. If you are assigned a foal that is hyperactive (as they can be as they recover from mild brain damage) you may go home black and blue and really feel your shift the next day. No matter how tired you are or how tedious some of the jobs may seem, it will all be worthwhile when you see your first foal progress from lying in a coma on a fleece lined mattress, to running and bucking at the side of its dam as it plays outside for the first time.

Who are foal sitters? They come from all walks of life. Many are college students who want to find out what veterinary medicine is all about. Others are nurses from human hospitals, looking for a change of pace. Still others are horsewomen and horsemen from the community who just feel good helping these little patients.

If you are interested, email us at foalsitters@vet.upenn.edu or call the foal sitter hot line at 610-444-5800, ext. 2445. You **must register by December 1** to be able to help during the 2003 foaling season.