PRACTICAL FELINE PAIN MANAGEMENT
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You don’t have to be a “crazy cat person” to recognize that the cat is a unique creature with very distinct behaviors, physiological functions, and health-care needs. Historically, feline patients have been regarded as small dogs, but those days are long over. There are distinct ways that cats process drugs, express pain, and mask symptoms of severe disease. Ever wonder why cats purr when they are in pain? Despite the fact that cats far outnumber dogs as household pets in the United States, most cats are not “medicalized” beyond initial kitten visits, surgery for neutering and/or declaw, and emergency care. Routine care of the domestic cat is not yet a standard, and, in fact, less than 30% of all owned cats will ever visit a veterinarian. These factors have led to a poor understanding of feline pain and its management in practice and at home. Fortunately, the area of feline wellness has gotten a great deal of attention in recent years and continues to emerge as an area of special interest.

Surgical Pain Management
In the pain management arena, cats have traditionally received less analgesia than dogs. In the surgery area, premedication, monitoring, and fluid therapy are all significantly reduced compared to dogs. This is in part due to the difficulties of restraining, catheterizing, and instrumenting cats, but it is also due to long-standing notions that cat surgeries must be kept to a financial minimum.

The basic principles of pain management are the same for dogs and cats and have been described in detail elsewhere in the conference notes. The principal differences lie in that several of the drugs typically used in dogs (i.e., morphine and lidocaine) are not generally used in cats. Buprenorphine remains the opioid most often used in the United States, but methadone, although limited in availability, is gaining in popularity.

Nonsteroidal anti-inflammatory drugs (NSAIDs) also vary in terms of dosing regime and options. Currently, meloxicam, carprofen, and robenicoxib are labeled for use in the cat with varying dose indications and recommendations. Whereas dogs typically express adverse reaction to NSAIDs somewhere in their GI tracts, cats are more likely to manifest renal problems up to and including renal failure. Because of the cat’s unique metabolism of some NSAIDs, extreme care must be taken to observe safe precautions when using this drug class; however, that said, the therapeutic value of NSAIDs cannot be overstated in felines.

Approaches to feline anesthesia and analgesia favor minimal interaction. Intramuscular injection and transmucosal administration have proven to be quite effective in reducing stress in feline patients.

Many US veterinary practices have adopted “Kitty Magic” as the feline anesthesia/analgesia protocol of choice as it combines premedication, induction, some general anesthesia, and postoperative analgesia into a single IM injection. There are many variations of “Kitty Magic,” but the author prefers the following:

**Kitty Magic** for surgical or painful procedures, administered IM:

- 0.2 cc Dexdomitor per 5 kg
- 0.2 cc ketamine per 5 kg
- 0.2 cc buprenorphine (0.3 mg/ml) per 10 lbs

Provides 30 minutes of profound sedation and analgesia typically sufficient to perform castration or less painful procedures or intubation. Occasionally, small amounts of inhalant anesthesia by mask are required.

**Kitty Magic Lite** for simple, nonpainful procedures, administered IM:

- 0.1 cc Dexdomitor per 5 kg
- 0.1 cc ketamine per 5 kg
- 0.1 cc Torbugesic per 5 kg (10 mg/ml)

**Kitty Magic Squirt** given transmucosally for the super bad kitty:

- 0.2 cc Dexdomitor per 5 kg
- 0.3 cc buprenorphine per 5 kg (0.3 mg/ml)
- 0.4 cc ketamine per 5 kg
Feline Analgesia/Anesthesia Protocol
(All amounts are in mls)

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>Rimadyl Inj SQ 1mg/kg ONCE</th>
<th>Kitty Magic IM 0.3 mg/ml buprenorphine ketamineDEXDOMITOR</th>
<th>Ring Block 0.5% Bupivacaine Up to 1 cc/5 kg bupivacaine/saline</th>
<th>Post-op Buprenex IM or transmucosal .02 mg/kg q 8 hrs</th>
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Chronic Pain in Cats

Cats are frequently affected by osteoarthritis (OA) in latter stages of life. In addition to OA, interstitial cystitis, cancer, and dental diseases are all potential causes of chronic inflammatory pain in cats. Neuropathic pain associated with any of these diseases or with past injury is also not uncommon. Even past procedures, such as declaw or resolved ear mite infestation, can lead to chronic pain syndromes in cats. This fact encourages the use of effective pain management throughout the cat’s life with each and every incident of surgery or illness. Prevention of chronic pain should be top of mind when designing perioperative pain management protocols.

Cats are extremely talented at hiding signs of chronic pain, and many cat owners are unaware of what the signs are. These two facts contribute to chronic pain being poorly understood in cats. Studies are continually undertaken to try to illuminate feline pain signs, which are more likely to be behavioral in nature than physiological.

Failure to jump; refusal to use the litter box; changes in eating, grooming, or sleeping behavior; or withdrawal from human contact are the most common signs of chronic pain in the cat. Limping, even with severe OA, is uncommon, although cats have been described as having a “stiff” or “uneven” gait. Careful questioning of the owner is necessary to identify pain signs in the cat. The American Animal Hospital Association has a take-home owner form available on its website entitled “How Can I Tell if My Cat Is in pain?” This type of aide is critical in getting owners to recognize subtle signs of pain in their pets.

Treatment Options for Long-Term Pain Control

**NSAIDs**

Just as in dogs and people, in cats inflammation is the root cause of most pain syndromes, and it must be managed with NSAIDs whenever possible. This has been an ongoing problem in cats with regard to safety issues, particularly renal disease and renal failure. Safe NSAIDs with safe dosing regimens are essential to protecting the cat from disastrous side effects. That said, NSAIDs are a critical part of treatment in painful cats. Rimadyl, Metacam, and most recently, Onsior have been used in cats. Each of these NSAIDs has a vastly different dosing regimen for chronic pain management. At this point, in the United States, Metacam cannot be used long term in the cat due to an FDA black-box label warning. Rimadyl has been used successfully off-label on a q 4-day basis for chronic pain. Onsior is labeled for 3 days postoperative to soft-tissue surgery, but there is no available information at this time on using Onsior for chronic pain management.
Opioids
All opioids have been used in cats, although buprenorphine has become the opioid of choice for most cat procedures resulting in pain. Buprenorphine provides excellent pain relief in cats without many of the side effects caused by pure opioid agonists, such as hyperthermia. Because buprenorphine is readily absorbed across mucous membranes in the feline due to the unique oral pH in this species, buccal mucosal administration is possible in the cat, providing analgesia for up to 8 hours from a single dose.

Gabapentin
Though labeled as an anticonvulsant, gabapentin plays an important role in reducing neuropathic pain and central sensitization in chronic pain patients. Gabapentin is becoming increasingly popular in both human and veterinary medicine as the first choice in patients whose pain does not respond to conventional therapies, especially where nerve involvement is presumed.

Typical starting dose for cats is 5.0 mg/kg b.i.d. to t.i.d. p.o., but some cats may require significantly higher doses to achieve full effect. Patients should be reevaluated for response frequently and dose adjustments are usually made every 5 to 7 days. Sleepiness is the side effect most commonly reported at higher doses. Neurontin elixir (50 mg/ml) is a good option for administration in the cat, although it contains xylitol and use should be avoided in diabetic cats and all dogs.

Maropitant (Cerenia)
Though labeled as an antiemetic, maropitant has been shown to be a very valuable addition to the pain management arsenal, particularly for visceral pain such as interstitial cystitis. This is likely due to anti-inflammatory activity via substance P inhibition and neuropathic pain control via NK-1 receptor antagonism. Suggested off-label dosing is 1 to 2 mg/kg s.i.d. or e.o.d.

Supplements
There are a number of special diets and nutraceuticals available for use in cats with varying efficacy. Adequan seems to produce excellent results in the cat when used at:

- “Induction” phase: 2 mg/lb SQ; twice weekly for 1 month
- Tapering schedule to once or twice monthly maintenance thereafter

In addition to supplements, both laser therapy and acupuncture have been shown to provide relief in a variety of pain syndromes in cats.

References available upon request.