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COMPLICATIONS – FELINE ONYCHECTOMY

James S. Gaynor DVM, MS, Diplomate, ACVA
Animal Anesthesia & Pain Management Center
Colorado Springs, CO

It is becoming more and more apparent that a number of feline patients who have had onychectomy (declaw) procedures performed have subsequent chronic pain issues. These patients usually present with one of several client complaints. The most common is that client actually thinks the cat is still painful especially on the fore paws because it seems to walk very lightly on those feet, as if walking on nails or glass. Another client complaint is a cat who just has some behavioral changes which may include decreased activity, decreased appetite or increased aggression. The inciting cause for these presentations within days to months to years is usually the lack of adequate acute pain control in the immediate period surrounding the declaw procedure.

HOW DO I SOLVE THIS CHRONIC DECLAW PAIN PROBLEM?

Initially, a good physical exam isolating the discomfort to some paw or paws where the declaw would have been performed is essential. The next step in alleviating the pain is to make sure there is not an underlying declaw problem such as some piece of bone left behind. Quality radiographs of the affected feet are very important to rule out this problem. Once it is clear that the source of pain is not a surgically correctable problem, it is more likely due to pathophysiology at the level of the spinal cord. This chronic pain in the absence of a current noxious stimulus is likely related to the wind-up phenomenon. Wind-up involves changes frequently involved with the activation of N-methyl-D-aspartate (NMDA) receptors, resulting in central neuronal hypersensitization. As wind up develops, the central neurons begin to exaggerate the stimulus which enters the spinal cord, making the stimulus which eventually makes it to the higher centers of the brain of greater intensity than their peripheral origination, thus resulting in worsening pain. This can result in commonly used analgesics having little or no effect.

The treatment for this problem chronic declaw pain involves treating the windup and providing some analgesic relief at the same time. Windup can be treated with NMDA receptor antagonists. Currently, there is one oral version available, amantidine, although it is considered off-label use for both humans and veterinary patients. Amantidine, 3mg/kg PO daily, (Table 1) should be administered to these cats for 21 days.

Amantidine has little to no analgesic properties. Therefore, while it will help the spinal cord to process stimuli more appropriately, cats will need some primary analgesic to actually alleviate the pain.

Cats should receive buprenorphine 0.01-0.02 mg/kg buccally BID for 2-3 days. If the cat develops some sedation

after 2 days discontinue the buprenorphine. Cats should also receive meloxicam on a progressively decreasing dosing schedule over a 21 day period. The initial dose of meloxicam should be 0.05 mg/kg PO daily for 4 days, then 0.05mg/ 2 kg PO daily for 4 days, then 0.05 mg/cat PO daily for 4 days. Then 0.05 mg/cat every other day for 5 days. If at anytime, the cat develops signs of illness, discontinue the meloxicam and assess kidney and liver function. It is possible to overwhelm a cats ability to metabolize meloxicam, as with any NSAID, with repeated administration. The dosing schedule here is unlikely to have adverse effects. Meloxicam should not be used in cats with underlying kidney or liver disease.

Currently, every cat who has present to the Animal Anesthesia and Pain Management Center with problem declaw pain has had 100% resolution based on this protocol.

HOW DO I PREVENT THIS CHRONIC DECLAW PAIN PROBLEM?

The best way to prevent problem chronic pain as a result of acute surgical pain is to have an aggressive analgesic plan in place. This plan should be multimodal in approach, meaning it should include drugs which work at various parts of the nociceptive pathway to produce overall better analgesia.

The initial part of this plan involves adequate premedication (Table 2). A very efficacious protocol involves a combination of an alpha-2 agonist, an mu-receptor opioid agonist and an anticholinergic, all combine into one syringe and administered SQ. The combination alpha-2 agonist / mu-receptor opioid agonist induces excellent pre-emptive analgesia and sedation. Example of alpha-2 agonists include medetomidine 20 ug/kg or xylazine 0.5 mg/kg. A very efficacious opioid is hydromorphone 0.1 mg/kg. Atropine or glycopyrrolate at conventional doses can be administered to decrease the likelihood of decreases in heart rate from the other drugs.

Anesthesia may be induced in any way desired. After the cat is anesthetized, perform a declaw block (Figure 1) using lidocaine 1.5 mg/kg combined with bupivacaine 1.5 mg/kg. In brief, this is done by injecting the local anesthetic SQ from medial to lateral aspects dorsally over the area just distal to the carpus. A bleb of local anesthetic is also injected SQ just proximally to the accessory carpal pad on the palmar aspect of the paw.

Cats are given buprenorphine 0.02 mg/kg SQ 4 hours after the the hydromorphone administration, then 0.01-0.02 mg/kg buccally BID for 2 days.

Declaw cats are given meloxicam 0.2 mg/kg SQ at the time of the declaw followed by 0.05 mg/kg PO daily for 4 days then 0.05 mg/ 2 kg PO daily for 4 days.

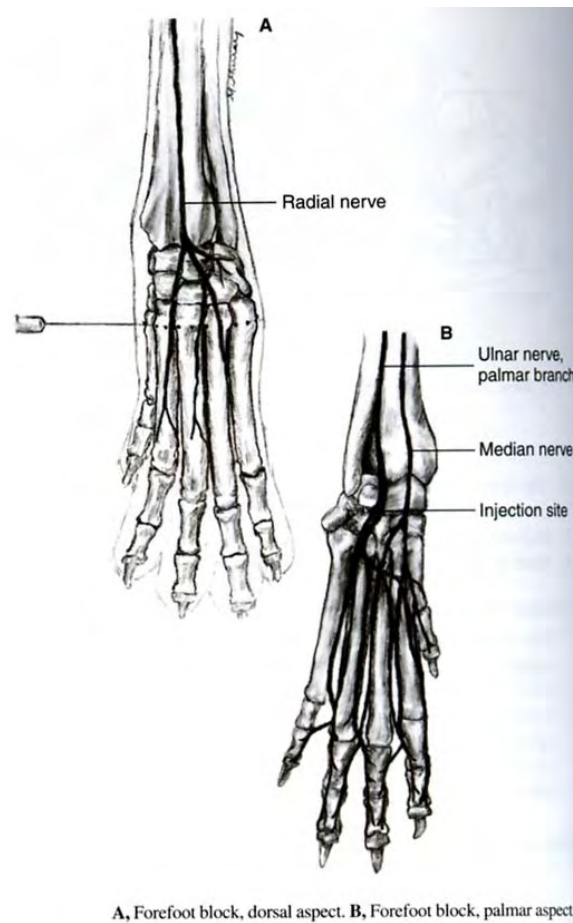
Following these concepts should allow practitioners to prevent problem declaw pain or treat it when it occurs. If the pain still persists, it is a good idea to request a consultation to help achieve an acceptable final outcome for the cat and client.

Table 1. Protocol for Alleviation of Chronic Declaw Pain

1. Assure pain is from paw
2. Radiograph paw to rule out bone fragments
3. Amantidine 3 mg/kg PO daily for 21 days
4. Buprenorphine 0.01-0.02 mg/kg buccally BID for 2-3 days
5. Meloxicam 0.05 mg/kg PO daily for 4 days, then 0.05mg / 2 kg PO daily for 4 days, then 0.05 mg/cat PO daily for 4 day, then 0.05 mg/cat every other day for 5 days

Table 2. Protocol for Prevention of Acute and Chronic Declaw Pain

1. Premedication; medetomidien 20 ug/kg + hydromorphone 0.1 mg/kg + atropine 0.04 mg/kg SQ
2. Induction of anesthesia
3. Declaw block
4. Meloxicam 0.2 mg/kg SQ at the time of the declaw followed by 0.05 mg/kg PO daily for 4 days then 0.05 mg/ 2 kg PO daily for 4 days
5. Buprenorphine 0.02 mg/kg SQ 4 hours after the the hydromorphone administration, then 0.01-0.02 mg/kg buccally BID for 2 days.



A, Forefoot block, dorsal aspect. B, Forefoot block, palmar aspect.

Figure 1. Diagram for Performing Declaw Block – refer to text for specifics

From Gaynor JS and Mama KR, Local and Regional Anesthesia Techniques for Alleviation of Perioperative Pain, in *Handbook of Veterinary Pain Management*, Gaynor, JS and Muir WW (eds), Mosby, St Louis 2002; pg 270.