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## The Importance of Analgesia (Pain Control) for Pet Rabbits

The number of rabbits kept as pets has increased dramatically over the last decade. The veterinary profession has made huge strides in knowledge over this same period of time and now rabbit medicine and surgery is taught in an increasing number of veterinary schools and there is an abundance of published and lecture material available to the practitioner. We now have veterinarians who have established themselves as "rabbit specialists", however, there is still confusion regarding the use of analgesia (pain relief) in the rabbit. The vast majority of veterinarians are caring professionals that are truly concerned about the health and welfare of their patients, however, some practitioners still do not use pain-relieving medications in their rabbit patients even though they routinely use these drugs in dogs and cats and surely even themselves! I would like to look at why this situation might exist, why analgesia is very important to our rabbit patients and what types analgesic agents are safe and appropriate.

### THE PRESENCE OF PAIN IS NOT RECOGNIZED

The signs of pain are well established in the dog and cat, however until recently, signs of pain were frequently not recognized in rabbits. If a veterinarian or caretaker doesn't suspect an animal is in pain, they may not consider using any pain relief.

Rabbits are "prey animals" meaning that their place in nature is as a food source for predators. Prey animals often become immobile when they are frightened this being a natural protection to avoid detection by a predator. Prey animals also tend to hide any discomfort (again a protection against predators) unless they are in familiar surroundings. A visit to a veterinary office or an examination by a veterinarian can represent a frightening experience and the rabbit may remain immobile and not give an obvious response to a painful touch. Often it is necessary to detect pain through observation when rabbits are moving about their own familiar environment where they feel comfortable enough to show their "true nature". In the veterinary office, the rabbit may not show painful signs until it has been in its cage for a while and calmed down. This is not to say that rabbits can't show signs of pain when handled, but that they are more likely to mask pain than a more familiar species such as a dog, and therefore pain may be missed. As you can see it is **VITALLY** important for you to be familiar with your pet and observe his or her actions daily so you can detect changes in behavior. Your observations will become an important part of the history you give your veterinarian. The history is a **vital** part of the diagnostic process.

We know for a fact that rabbits have the same neurophysiological mechanisms as humans to produce pain and therefore have the capacity to feel pain in the same manner as ourselves. The following are signs that have been associated with pain in the rabbit. Remember that not all these signs are **SPECIFIC** for pain and may also occur with nonpainful conditions. However, all these signs are **abnormal** and should be cause for further investigation.

### SIGNS OF PAIN IN THE RABBIT:

- Abnormal "hunched" appearance when sitting
- Alert but reluctant to move
- Moves slowly or with effort
- Depression/lethargy
- Limping
- Unusual or sudden aggression
- Loss or decrease in appetite or water consumption
- Tooth grinding
- Hiding (when it is not usual behavior)/facing the corner
- Shows no interest in the surroundings (loss of curiosity)
- Crying or "grunting" when moving/defecating/urinating or being handled/examined
- Coat is unkempt due to loss of interest in grooming
- Taking a long time to eat
- Dropping food out of the mouth

In addition to the signs of pain, acute severe pain or stress or moderate to severe chronic pain or stress can lead to these internal problems:

- Gastric ulcers
- Cardiomyopathy (heart muscle disease)
- Alterations in the gastrointestinal (GI) flora which may lead to ileus (a shut down of the GI tract) or other disease
- Drop in body temperature
- Renal ischemia (lack of blood supply causing damage to kidney)

#### **MYTH: PAIN IS “PROTECTIVE”**

There was a theory among veterinarians, and with human doctors as well not so long ago, that pain is “protective”, meaning that the natural function of pain is to keep the area that is painful from being used thus allowing it to heal. People that follow this line of thought don't believe in using pain relief because the animal wouldn't heal properly. For instance, if a bone is broken, the pain will keep the animal from using that bone until it heals. However, we certainly know that in humans moderate to severe pain can cause depression, loss of appetite, atrophy of muscles and pressure sores (from non-use of the area), and a resultant poor quality of life. All these conditions also occur in rabbits that experience moderate to severe pain. In addition, a rabbit may develop severe skin irritation from urine and stool because he doesn't want to groom himself or move about. Rabbits may experience a lowered body temperature and may eat poorly under the stress of moderate to severe pain. Rabbits can also develop gastrointestinal (GI) ileus (where the GI tract “shuts down”) and gastric ulcers in response to pain, both conditions being potentially life threatening. All of these conditions can seriously delay healing and threaten the overall health of the rabbit.

In my own experience as well as that of other published veterinarians, **there is no evidence to indicate that analgesia will delay healing.** In fact, since we have become more liberal with the use of pain medication in rabbits over the last 15 years, we have seen a dramatic **increase** in treatment success when pain is managed. Rabbits recover more rapidly; they eat sooner, become more active and have less GI problems when pain is managed. We have **not** found that rabbits will chew their stitches or pull off bandages more readily when analgesics are used. If bandages or sutures need to be protected, there are more imaginative and less cruel ways to accomplish this than leaving the animal in pain! **Moderate to severe pain is not “protective” but rather destructive to the rabbit's overall well being.** Pain management is crucial to treatment success in many cases.

#### **MYTH: ANALGESICS ARE “DANGEROUS” TO USE IN RABBITS**

Veterinarians for years have been afraid to use a number of medications in rabbits because they thought rabbits were “fragile” animals. I used to feel the same way when I started seeing rabbits 25 years ago, but these ideas were based on ignorance of the physiology and behavior of this species. There is now a wealth of information on safe and appropriate drugs to use in rabbits for a wide range of conditions, including pain relief. The excuse that analgesics are dangerous is no longer acceptable. We have used a variety of analgesics in rabbits for over 15 years with rare side effects. However, the potential danger of not using analgesia, is much more serious including loss of appetite, GI disease, depression and poor healing. I would be remiss if I did not tell you that any drug introduced into a living being could have side effects, so there are always risks. However, the analgesics used today in rabbits have been tested thousands of times at many dose levels and are safe alternatives to the agony and dangers of allowing continued moderate to severe pain. Today there is a wide range of analgesic choices ranging from mild to potent and your veterinarian will determine which is best based on your rabbit's needs and condition.

#### **A REVIEW OF THE IMPORTANCE OF ANALGESIA IN THE RABBIT**

Domestic rabbits maintain the physiology and behavior of a prey species. Even though a pet may be handled frequently, it will respond to pain and stress in the same manner as its wild ancestors. Serious side effects of moderate to severe pain or fear in a rabbit include a drop in body temperature, loss of appetite, lethargy, GI disturbances, kidney damage, heart muscle disease, prolonged recovery time from anesthesia or surgery and prolonged healing time. Death can be the ultimate result of prolonged severe pain or stress. Therefore it is **ESSENTIAL** that pain relief be used appropriately in the rabbit in order to improve the quality of the pet's life and the treatment success. **In my opinion, (and I feel very strongly about this), there is no excuse to withhold analgesia from a rabbit (or any pet for that matter) when it may be experiencing moderate to severe pain.** There is currently a wide range of analgesic agents available. I wonder how many humans would go without pain relief if given the choice! Once a veterinarian is educated on the importance of pain relief in the rabbit and the analgesic agents available, there should be no reason not to use them appropriately.

## HOW ANALGESIA IS USED

There are many situations where analgesia may be used. I will list a few of the more common conditions here.

- **Surgery** - Analgesia is commonly used in surgical cases. Minor skin surgeries often don't need extended pain relief, but invasive surgeries and orthopedics, for example, can result in serious postoperative pain. Analgesics can be given before, during and/or after surgery depending on the rabbit and the procedure. Some rabbits only require pain relief for 24 hours postoperatively, whereas others may require analgesia for several days.
- **Gastrointestinal (GI) disease** - GI disease can be a painful condition in rabbits because often there is painful gas distention of the GI tract. The use of analgesia can help the rabbit regain its appetite more quickly thus stimulating GI tract motility and relieving the gas distention more rapidly. Pain relief may only be needed until the pet is defecating normally.
- **Dental disease** – Dental disease can be painful when overgrown teeth cause mouth and tongue ulcers and abscesses. Using analgesics can help the pet continue to eat while the dental condition is being treated.
- **Trauma cases** - Pain relief is used in trauma cases based on the severity of the injuries. Rabbits that have been terribly frightened with or without other injuries can benefit from short-term analgesia particularly if it has a sedative action.
- **Inflammatory disease** - Rabbits with serious inflammatory disease such as pododermatitis (sore hock), severe urine or chemical burns, acute inner or middle ear infections and arthritis benefit greatly from pain relief.
- **Abdominal disease** - Abdominal disease including some cancers, bladder stones, ovarian disease and liver disease can be painful and analgesics should be considered for use.

## ANALGESIC CHOICES

In this section I will give a brief overview of different types of analgesics used in rabbits. I will not be discussing specific dosages because dosages for analgesics can vary greatly and depend on the health of the patient and the condition being treated. Your veterinarian can find appropriate doses in the references at the end of this article as well as a number of drug formularies that include rabbits.

### Opioid Analgesics

These are pain relievers that are opiate derivatives. The one you may have heard most about from this group is morphine. Opioids are very effective pain relievers and may also produce a sedative effect. Mild sedation can be beneficial in situations where it is important to keep the patient calm and confined such as postsurgically and after severe trauma. Opioids are generally given by injection in the rabbit, subcutaneous, intramuscular or intravenous. The one drawback to opioids is that most of them have a short duration of action (only 2 to 4 hours) with the exception of buprenorphine, which is effective up to 12 hours. Opioids would most likely be given in the hospital before, during or after surgery, or after a serious trauma. The medications most often used in this group include buprenorphine (the most commonly used), butorphanol, morphine, nalbuphine, pentazocine, meperidine, naloxone, and oxymorphone.

### Nonsteroidal Anti-inflammatory Drugs (NSAIDs)

NSAIDs are agents that both control inflammation and are analgesic. They vary greatly in potency from the weakest, aspirin, to a stronger drug such as carprofen. To date there are no documented reports of serious side effects with these drugs, however it is known in other species (horses, dogs, humans) that long term use at the upper end of the dosage range may result in gastric ulcers. In particular, **corticosteroids should not be given at the same time as NSAIDs because the potential for gastric ulcers is greatly increased.** In addition, these drugs should probably not be used 24 to 48 hours prior to surgery due to potential renal (kidney) complications. NSAIDs can be given either orally or by injection. They have an apparent long duration of action, ranging from 12 to 24 hours for most agents. NSAIDs are commonly used to control pain in GI disease and for at home postsurgical care. These agents are also useful for chronic pain particularly if it is caused by inflammatory disease such as arthritis, acute ear infection and abscesses. If NSAIDs are used for extended periods of time, they should be used

at the lower end of the dosage range and the rabbit should be monitored to prevent potential gastric ulcers. However, neither our clinical experience nor that of others I have spoken to indicate that gastric ulcers are a problem in rabbits given long term NSAIDs. Common NSAIDs that are used include; aspirin, carprofen, diclofenac, flunixin, ibuprofen, indomethacin, ketoprofen, meloxicam, acetaminophen and piroxicam.

### **Local Anesthetics**

Local anesthetics can be administered in the form of topical creams or drops or by superficial injection into the skin. The most common use of local anesthetics in the rabbit include minor skin procedures (skin biopsies, small tumor removals, IV catheter placement), ophthalmic procedures (tear duct flushing and thorough eye exam) and nasoesophageal tube placement (the drops are put in the nose so the small tube can be placed in the awake patient without discomfort). Local anesthetics are not meant to be used for long term analgesia and their duration of action is fairly short.

### **Epidural (Spinal) Anesthesia**

Although epidural anesthesia has been described and can be quite successful in the rabbit for some surgical procedures, it is rarely used. This is probably due to the fact that the average veterinary practitioner is unfamiliar with the techniques of administering this type of anesthesia in the rabbit that requires more skill than a simple injection. However, this form of anesthesia/analgesia may find increased use in the future. Epidural anesthesia/analgesia might be most useful to control postoperative after an abdominal exploratory, particularly GI surgery. This would be a short-term anesthesia and would have to be administered and monitored in a veterinary clinic.

### **CONCLUSION**

Rabbit patients definitely benefit from the use of analgesia in a variety of situations. The humane choice is to use analgesia in the painful rabbit. In addition to pain relief it is essential to manage the rabbit in all other aspects of care including environment (quiet recovery area, appropriate temperature, clean), diet, and other medical or surgical therapy. Please work with your veterinarian to provide the most comfortable environment for your pet's recovery. Your pet deserves the same humane care we would expect for ourselves!

### **NOTE ON REFERENCES:**

I encourage your veterinarian to read more about analgesia in rabbits. The references listed below all contain information on the use and importance of pain relief in the rabbit. These articles represent only a tiny fragment of the information available this subject, but these were selected because they are current and were written with the practitioner in mind. They also contain current dosages for appropriate analgesics for rabbits. A great deal of the information in this article was gleaned from reference #2, an excellent, concise article on small mammal analgesia as well as my own 25 years of experience with many hundreds of rabbits.

#### References:

1. Brown SA. Clinical Techniques in Rabbits. Seminars in Avian and Exotic Pet Medicine, Vol 6, No 2, 1997; pp 86-95.
2. Flecknell PA. Analgesia in Small Mammals. Seminars in Avian and Exotic Pet Medicine, Vol 7, No 1, 1998; pp 41-47.
3. Laber-Laird K, Swindle MM, Flecknell PA. Handbook of Rodent and Rabbit Medicine. Pergamon Press 1996; pp 234-237.
4. Ramer JC, Paul-Murphy J, Benson KG. Evaluating and Stabilizing Critically Ill Rabbits – Part II. Compendium on Continuing Education for the Practicing Veterinarian, Vol 21 (2), 1999, 116-125.

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