

Background Information:

Many health concerns in companion animals are associated with pain. Examples include elective surgery such as ovariohysterectomy (spay), castration, or declaw, trauma, osteoarthritis, back and neck disorders (so-called disc disease), ear infections, pancreatitis, and cancer. Pain is actually helpful in that the response to it is somewhat protective. For example, in touching a hot object our pain response is protective because it causes us to pull away quickly. However, pain can have adverse consequences including distress, delayed healing, poor quality of life, sleep disturbance, poor appetite, depression, altered social interaction, and in fact, progression to more serious levels of pain; pain that can be much more difficult to treat. Pain associated with health concerns is almost universally detrimental and concerted efforts to alleviate it are warranted.

When our pets are in pain it is distressful to them as well as to us. Certainly we want to treat pain as quickly as possible. Your family veterinarian is entrusted with this task; it is your veterinarian's highest goal and responsibility to honor the bond you share with your companion with compassionate care. The International Academy of Pain Management (IVAPM) was established to support you and your veterinarian in this endeavor. The IVAPM encourages pet owner's to work with veterinary professionals to accurately diagnose the cause(s) of pain and to determine the safest and most appropriate therapy.

Many years prior to the establishment of the IVAPM, the control of pain was entirely secondary to the control of disease in both human and veterinary medicine. The obvious consequence, of course, was a great deal of unnecessary discomfort and suffering. The good news is that there has been a clear shift in philosophy toward recognizing pain as both a symptom and, in some cases, a disease entity in its own right. As a result, patient comfort, i.e. timely, appropriate and effective management of pain, is included among the primary goals in compassionate health care.

Recognizing Animal Pain

Now that pain is garnering more attention, we realize that one of the most difficult tasks in treating animal pain is recognizing it. Certainly anyone who cares for animals knows animals have the capacity to feel pain. However, it is quite possible that despite our best intentions we may misinterpret or entirely overlook signs of pain in animals.

Remember animals are programmed for survival; displaying signs of pain in the wild is not necessarily a normal or safe behavior. Our companion animals likely retain this tendency to hide their pain, particularly chronic pain. Further complicating this picture is the fact that different species display or conceal pain signs in entirely different ways. For example, horses in pain look different from dogs, which are different than cats. Communication barriers exist because our companion animals are non-verbal, and we must rely on physical cues. Additionally, different disease processes cause very different levels of discomfort. Compound this with individual variance in pain tolerance and the whole picture gets quite complicated. How painful is he? Does she need pain medication, or more pain medication? Your family veterinarian is trained to recognize the signs of pain in your pet and is your best resource for diagnosis, assessment and treatment of pain in your companion animals.

Some signs of pain you may recognize at home include:

- Posture: tucking of abdomen, drooping head, arched back
- Temperament change: aggression, avoidance of social interaction, hiding, changes from routine or normal behavior
- Vocalization (one of the least common signs of pain): most animals in pain do NOT cry out or whine, but when these signs occur they should be recognized as indicators of pain
- Movement: Reluctance to move, prolonged lying or sitting, lameness
- Appetite: decrease
- Grooming: decrease

If any of these signs occur in your pet contact your family veterinarian.

The Principle of Analogy

Unlike the display of pain mentioned above, neurophysiology and anatomy are parallel in animals and humans. Essentially, both humans and animals are hard-wired to experience pain in very similar ways, but since animal pain can be so difficult to accurately diagnose, we must take a logical and proactive approach to their pain. Medical intervention or disease processes known to be painful to humans should be considered painful to animals although the degree of pain may differ from individual to individual. Since we can never be certain of the precise pain experience of an individual animal, compassionate care dictates that we give the benefit of the doubt and treat pain whenever it is probable.

Types of Pain

Pain is usually divided into acute and chronic forms. Treatment approaches differ accordingly. Acute pain is generally short lived (hours to days). It typically arises as a result of trauma, surgery or mild disease and is easier to recognize. Some examples of acute pain include ovariohysterectomy (spay), castration or declaw surgery, injury such as a bite wound or abscess, disease such as acute pancreatitis.

In contrast, chronic pain is persistent, lasting weeks or longer. The hallmark of chronic pain is that it continues beyond a normal period of healing. Often chronic pain escapes recognition because it may: a) develop gradually, as in the case of osteoarthritis, b) arises in elderly animals and so is dismissed as “getting old,” c) is underappreciated due to the severity of the primary disease, as in the case of chronic ear infections and dental disease.

Treatment of Pain

Pain management differs based on the type of pain. It also differs based on species, individual pain tolerance and health status. The pain process is highly complex and therapy is generally directed at several levels. Your veterinarian will utilize two basic strategies in developing a pain treatment plan.

- Multimodal therapy: The use of multiple pain therapies to control pain. The result is synergistic, meaning it has a better effect than any one therapy alone can achieve.
- Pre-emptive therapy: The use of analgesics (pain-relieving) medications prior to the onset of pain (i.e. before surgery). The result is a lower overall level of pain because the pain response is dampened.

Pain therapy includes more than medication. Some commonly used treatment strategies include:

1. Nursing care: bedding, nutrition,
2. Physiotherapy: massage, ice, heat
3. Physical therapy: therapeutic and routine exercise
4. Acupuncture
5. Neutraceuticals: so-called cartilage protectants
6. Analgesics (pain medications)

Once again, your veterinarian can help tailor a treatment plan that is most appropriate for your animal's needs.

Question: Since all medications have a potential for side-effects, why do we give them to our pets?

All of the therapies mentioned above have the potential to alleviate pain, but some painful conditions cannot be adequately managed without medication. In order to maximize benefit (pain relief) and minimize risk (side effect), your family veterinarian must thoroughly examine your pet, take appropriate laboratory samples, make an accurate diagnosis, develop an individualized therapeutic plan, and follow-up routinely to assess safety and effectiveness of that plan. When used properly the likelihood of adverse effects is low and the pain relieving benefit greatly outweighs the risk of using pain medications.

Commonly Used Pain Medications (analgesics)

Although acute and chronic pain differs substantially, similar classes of drugs can be used to alleviate both. Some commonly used analgesics include local anesthetics, steroids, alpha-2 agonists, non-steroidal anti-inflammatory drugs (NSAIDs), opioids, and miscellaneous drugs such as tricyclic antidepressants, gabapentin, and amantadine. The latter 3 categories will be covered in more detail as they are the most commonly prescribed medications for home treatment of pain.

Below is a list and brief description of the most commonly used categories of analgesics, including a few examples for each category:

- Local anesthetics: Typically used intra-op (during a medical or surgical treatment) to completely block pain perception at a localized site. Think of novocaine from the dentist.
 - Lidocaine
 - Bupivacaine
- Steroids : Although prescribed in the past as a pain therapy because of their anti-inflammatory properties, more effective drugs with fewer side effects are more commonly used today. Side effects of concern include gastrointestinal (GI) ulceration and immune-suppression.
 - Prednisone
 - Methylprednisone
- Alpha 2 agonists: Injectable sedative drugs used in conjunction with other pain medication for short term analgesia and sedation.
 - Xylazine
 - Romifidine
 - Medetomidine
- Opioids: These are the most potent medications for moderate and severe pain. These include morphine and the morphine-like medications. Oral, injectable and topical patch preparations are used. Side effects include sedation, respiratory depression, constipation, urine retention, vomiting, panting or excitement.
 - Morphine
 - Fentanyl

- Hydromorphone
- Tramadol
- Non-steroidal Anti-inflammatory drugs (NSAID's): These are among the most commonly prescribed analgesics. They lessen pain by reducing inflammation and are used in treating both acute and chronic pain. Possible serious side effects include damage to the kidney or liver and GI ulceration. Used appropriately these side effects are minimized. However, a few precautions and reminders are warranted regarding these analgesics.
 - If your dog is prescribed one of these analgesics, watch for decreased appetite, vomiting, and/or diarrhea. Stop the medication immediately and contact your veterinarian if these signs occur.
 - If your pet is prescribed this medication, regular physical exams and laboratory work are advised usually 2-4 times per year, depending on circumstances.
 - Remember to never administer aspirin or any other over-the-counter NSAID while your pet is on another NSAID. We advise not using over-the-counter NSAIDs without veterinary supervision. Many human medications are unsafe when used in animals.
 - Never alter the dosage of a prescription NSAID without consulting your veterinarian.
 - Cats are much less tolerant of NSAIDs and should never be given a prescription or over-the-counter NSAID without veterinary approval.

NSAIDs approved for veterinary use as of this publication include:

Carprofen (*Rimadyl*, Pfizer)

Deracoxib (*Deramaxx*, Novartis)

Etodolac (*Etogesic*, Fort Dodge)

Firecoxib (*Previcox*, Merial)

Meloxicam (*Metacam*, Boehringer-Ingelheim)*

Tepoxalin (*Zubrin*, Schering-Plough)

*only NSAID approved for use in cats in USA

NSAID safety - It is well accepted that no drug is 100% safe in all patients, human or animal. The Food and Drug Administration (FDA) has received reports of adverse effects, including fatalities, for all approved veterinary NSAIDs in a small percentage of cases. Usually, NSAID product labeling will contain warning language such as, “As a class, NSAIDs may be associated with gastrointestinal, kidney, or liver side effects.” The most common side effect for veterinary NSAIDs is gastrointestinal upset (usually characterized by vomiting and diarrhea), the traditional safety concern associated with NSAIDs. It is the opinion of the IVAPM that none of the approved veterinary NSAIDs stand out as distinctly safer (or more effective) than another. Veterinarians usually make an “evidence-based” selection of one of the approved NSAIDs based on cumulative safety data and their own clinical experience. For more information about NSAIDs including side effects, consult the Adverse Drug Reports from the Food and Drug Administration: <http://www.fda.gov/cvm/ADEReport.htm>. When viewing this information, be aware that it is important to evaluate the number of adverse effects relative to the total number of doses administered. In other words, a NSAID that has been administered frequently would be expected to have a higher number of adverse events reported than a NSAID that was administered less frequently.

- Miscellaneous Analgesics: It is not unusual to utilize more than one analgesic in the management of pain. Often combinations of the above medications are used to achieve multi-modal pain management. In addition, certain painful conditions require other prescribed medications. Details of these drugs are beyond the scope of this article; however we will briefly mention them. Further information can be obtained from your veterinarian.
 - Amantadine
 - Gabapentin
 - Tricyclic antidepressants (e.g amitriptyline)

This list of commonly used analgesic medications is by no means complete and represents some of the most commonly used medications as of this writing. Pain management is an active area of research and new therapies are developed frequently.

Summary:

Pain is a complex, dynamic, and treatable problem. Pain is a common concern in our companion animals and yet it can easily be missed. Because of this, effective pain management is a balancing act requiring:

- recognition,
- proper diagnosis,
- development of an appropriate therapeutic plan,
- timely follow-up
- individualized adjustment of therapy over time, particularly in the case of chronic pain

This is truly a team effort between you and your veterinarian. The best news of all is that there is help for animals in pain. Your family veterinarian, with the help of the IVAPM, has information and effective strategies to provide comfort for your animal companions.

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