



The following excerpt is from *Managing the Canine Cancer Patient: A Practical Guide to Compassionate Care* (published by Veterinary Learning Systems, publisher of *Compendium*, © 2006). To order a copy of the book, see page 706.

BOOK EXCERPT

Oncologic Pain in Dogs: Concepts and Assessment

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Compassionate care is the watchword of canine oncology, and pain control is the cornerstone of the caring process. Unfortunately, pain control in dogs has only recently begun to be investigated and applied seriously. Canine pain management can be difficult because many signs of discomfort may be mistaken by clients and the rest of the veterinary health care team to be components of other disorders. The key to compassionate pain control is anticipating the onset of discomfort, thereby allowing timely intervention with analgesics. For optimal pain control, analgesics should be given prophylactically, before pain receptors ever identify discomfort. Educating the entire veterinary health care team, especially veterinary nurses, is key in ensuring that patient comfort is paramount. The “ABCs” of pain management must be followed for each case^{1,2} (see box on p. 708).

The best assumption is that all patients with cancer have pain. In addition, it is impor-

tant to realize that each dog’s need for analgesics is dynamic and that constant assessment by the entire veterinary health care team must be a priority. In many veterinary centers, the nursing team is best at recognizing discomfort and advocating the use of analgesics.

MECHANISMS OF CANCER PAIN

The most common mechanism of cancer pain is associated with tumor invasion and subsequent tissue damage that causes activation of pain receptors.¹⁻⁵ Some forms of therapy can induce pain as well. For example, surgery and radiation therapy may ultimately relieve pain and suffering but almost always cause short-term discomfort that must be minimized. Similarly, although chemotherapy can help control the underlying malignant process, chemotherapeutic drugs, albeit uncommonly, may be associated with discomfort. Cisplatin, vincristine, and vinblastine have caused painful polyneuropathy in a small percentage of human cancer patients. This adverse effect is suspected to occur in a rela-

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The “ABCs” of Pain Management

- **A**ssess each patient for discomfort; always think ahead to anticipate and prevent discomfort from diagnostics, therapeutics, and the disease itself.
- **B**elieve and respond to the client’s perception about the pet’s pain level and quality of life.
- **C**hoose optimal analgesics to treat and prevent discomfort or pain.
- **D**eliver the drugs in the most appropriate fashion to optimize analgesic effects, such as selecting constant-rate infusions over on-demand oral therapy.
- **E**mpower clients to directly participate in patient care by ensuring they understand as much about the disease, treatment, and philosophy of pain management as the rest of the veterinary health care team.

tively small number of dogs and can decrease the patient’s quality of life.

Although very little is known about canine pain, a basic understanding of the types of discomfort may help increase awareness of how dogs with cancer can be managed with compassion and understanding. The types of pain associated with cancer include visceral pain, inflammatory and somatic pain, neuritis, and neuropathic pain.¹⁻⁵

Visceral Pain

Human patients describe this type of pain as a dull, deep, constant, aching pain. Visceral pain is poorly defined; patients with significant visceral pain may respond to opioid or nonopioid analgesics. It is suspected that this type of pain results in decreased activity, anorexia, and behavioral changes in dogs.

Inflammatory and Somatic Pain

Frequently described in human medicine but rarely in canine medicine, this type of pain is well localized, constant, and aching.⁵ Common sources of inflammatory and somatic pain include bone metastasis, tissue damage, and musculoskeletal, dental, and integumental pain. Dogs may lick or bite at an area or may exhibit signs of discomfort in subtle ways, such as by decreasing their activity or limping if a limb is affected.

Neuritic Pain (Neuritis)

Inflammation of nerves or nerve roots causes neuritic pain and can present as part of a paraneoplastic syndrome or as a direct effect of tumor compression.

Human patients describe it as a constant, dull, aching pain that may have periods of burning, “shock-like” sensations. In dogs, these shock-like sensations can result in sudden, unexplained behavioral changes, such as aggression or scratching and biting at an area, often to the point of self-mutilation.

Neuropathic Pain

Neuropathic pain occurs when a segment of the nervous system that normally transmits pain stimuli is damaged. It arises from metabolic, immunologic, or direct physical effects on the nervous system. Neuropathic pain is difficult to control with standard analgesics.

RECOGNIZING PAIN

The goal of quality care is to prevent any pain from occurring. Dogs are quite variable in expressing discomfort. Some hide most outward and measurable manifestations of pain and rarely exhibit signs until discomfort is advanced. In these dogs, the only clinical indicator of pain and discomfort may be increased systolic blood pressure. Other dogs are demonstrative when in pain. Experienced practitioners and caregivers

Clinical Briefing

General concepts of pain management

- Assess each patient for discomfort.
- Believe the client's perception about quality of life.
- Choose optimal analgesics.
- Deliver the drugs in the most appropriate fashion.
- Empower clients to directly participate in patient care.
- Use analgesics preventively for maximum benefit.
- Compassionate care, gentle handling, and a comfortable environment should be accompanied by local and systemic analgesics to anticipate discomfort and to treat ongoing pain.

Procedures and associated discomfort

<i>Degree of Pain</i>	<i>Clinical Procedures</i>
None	Physical examination, restraint, radiography, bandage change
Mild	Suturing, debridement, fine-needle aspiration, needle core biopsy
Moderate	Abdominal exploration, skin tumor removal, liver biopsy, laparoscopy, thoracoscopy
Severe	Hemipelvectomy, limb-sparing surgery, thoracotomy, chest wall excision, limb amputation, ear canal ablation

should watch for subtle changes in activity level, appetite, and movement. Vocalization, although not a specific indicator of pain, is noted in some dogs, especially when discomfort is significant. Some dogs become more reclusive; others, especially younger animals, pace and may thrash around. Tachypnea, tachycardia, and dilated pupils can be used to assess pain in dogs, even when they are stuporous.

The best veterinary practitioners anticipate and intervene early rather than wait for clinical signs associated with discomfort. Caregivers need to be aware of which procedures are likely to cause discomfort, and preemptive analgesia should be practiced when possible (see box on this page).

Comprehensive management of pain involves careful evaluation and treatment of each dog.¹⁻⁵ To maximize quality of life, response to therapy, and survival time for canine patients, adequate pain control must be the highest goal for the veterinary practitioner and the associated veterinary health care team. Pain control in canine medicine has come to the forefront of attention primarily because of inappropriate attitudes of clinicians and nurses, lack of knowledge about analgesic medications,

and lack of skill in assessing pain and choosing appropriate therapeutic methods.^{2,3} Client demand has also been an important force in bringing pain control to the forefront of compassionate care. In many cases, analgesics have been withheld because of fear of associated adverse side effects and because research demonstrating the beneficial effects of pain relief in dogs is scant. However, patient needs and client concerns require that pain relief and compassionate care become priorities in veterinary medicine.

GENERAL CONCEPTS OF PAIN THERAPY

The choice of analgesics and procedures to prevent, reduce, and eliminate discomfort differs depending on the cause and duration of the pain stimulus. Pain control for an abdominal exploratory procedure differs from chronic pain management in a dog with metastatic bone disease. Discomfort associated with inflammatory conditions differs from that induced by nerve damage. Other factors that may influence the approach to treating the cancer patient include¹⁻³:

- **Body condition:** In obese patients, drugs may be redistributed into fat stores, leading to overdosing. Metabolic derangements associated with cancer cachexia may result in altered pharmacokinetics and analgesic toxicity.
- **Age:** Some analgesics and anxiolytics that affect the central nervous system may have a pronounced sedative or calming effect in very young and old animals.
- **Breed:** Unique breed differences should be considered when selecting pain therapeutics. Doberman pinschers may be more likely to exhibit extrapyramidal side effects of some opiate drugs. Boxers may be very sensitive to the effects of acepromazine and opiates.
- **Underlying concurrent diseases:** Cancer patients are often older, and they almost always have a metabolic or organ disorder that may influence their degree of, and sensitivity to, discomfort and their response to analgesics. Dogs with renal or hepatic insufficiency should be treated with care because this organ dysfunction will change the toxicity and efficacy profile of drugs metabolized or eliminated by these organs. Obtaining a minimum database of complete blood count, biochemistry profile, and urinalysis will help the clinician anticipate any potential problems.
- **Individual variation:** Some patients respond unpredictably and repeatedly to the effect of drugs. Ner-

vous, hyperexcitable, small indoor pets may be more expressive than sedate Labrador retrievers that are occasionally used for hunting. Keeping a careful drug history for these patients is critical, especially when many clinicians and nurses are involved in the care of each patient.

- **Duration of discomfort:** The use of a local analgesic agent may be all that is needed for short-term pain management; the same form of analgesia would be inappropriate for long-term chronic pain control.
- **Degree of discomfort:** Mild discomfort is clearly treated differently than severe discomfort.

PREEMPTING PAIN AND DISCOMFORT

Recent research has demonstrated that once pain is elicited, the pain response is magnified. Preventive therapy is therefore preferable to suppression of established pain. Premeditated, judicious use of analgesics is likely to increase patient comfort, decrease the need for hospitalization (and the associated costs), and reduce the amount of pain medication needed to achieve the same level of comfort.^{2,4-6}

Pain may be divided into the categories of acute and chronic pain. In most species, severity is far more important than duration of pain with regard to the “memory” of pain: The severity of discomfort at any point in time will be repeated to the same degree when the same stimulus is applied subsequently. It is important to realize that pain is also increased through the wind-up phenomenon, defined as the enhanced perception of pain that occurs after the patient has experienced constant pain. This constant pain results in enhanced sensitivity to subsequent discomfort. Preventive analgesia helps avoid both the memory of pain and the wind-up phenomenon.

Acute pain can be due to the cancer itself, the treatment, or a diagnostic procedure. If discomfort is likely to be inflicted, then a preemptive, immediate, and post-stimulus plan must be designed and implemented. To ensure that the plan is effective, the practitioner must determine whether the pain to be inflicted is likely to be mild, moderate, or severe and appropriately select the drugs or procedures that are likely to be effective to meet the patient’s possible needs.

Chronic pain can also be caused by the cancer (e.g., a metastatic bone lesion in a dog with mammary adenocarcinoma) or, possibly, by a diagnostic or therapeutic procedure, such as chronic infection and implant,

plate, or screw loosening from limb-sparing surgery. Unrelenting pain from either cause can last for weeks or months.

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