The 8th Annual Veterinary Cancer Center Continuing Education Lecture:

Palliative Care for Animals: Controlling pain and beyond

The Veterinary Cancer Center (VCC) proudly presents our 8th Annual Continuing Education for Connecticut and New York Veterinarians. This lecture, which focuses on Palliative Care for Animals with cancer, is being held in association with the Westchester-Rockland VMA.
The 8th Annual Veterinary Cancer Center Continuing Education Lecture:

(WRVMA) for 2.0 NY-SED/ WRVMA continuing education credits. This meeting is also approved for 2.0 RACE CE hours for the State of Connecticut.

Contents

Program
Agenda...............................................................................................................................2

Summary & Objectives........................................................................................................3

A Medical Oncologist’s Perspective - Notes from Dr. Gerald S. Post
.................................................................................................................................4

Care using Radiation Therapy and Pain Management – Notes from Dr. John Farrelly.............6

Presentation Slides from Dr. Gerald S. Post........................................................................11

Presentation Slides from Dr. John Farrelly.........................................................................22

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The 8th Annual Veterinary Cancer Center Continuing Education Lecture:

PROGRAM AGENDA

6:00-6:45  Attendee arrival, check-in and begin a reception time
6:45-7:00  Begin food service
7:00-7:10  Guest Speaker (reserved for Platinum Sponsorship)
7:10-7:55  Lecture #1: Palliative Care using Medical Oncology - Dr. Gerald Post
7:55-8:00  Quick Break
8:00-8:50  Lecture #2: Palliative Care using Pain Management & Radiation Oncology - Dr. John Farrelly
8:50-9:00  Q&A
9:00-9:05  Recognitions and Closing

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The 8th Annual Veterinary Cancer Center Continuing Education Lecture:

Palliative Care for Animals: Controlling pain and beyond

Summary and Objectives

Part One: Palliative Care using Medical Oncology

Palliative care in veterinary medicine is incredibly important. Whether clients choose this option because of the type of cancer their pet has or because of financial reasons, this lecture will discuss the many options available. The use of injectable chemotherapy, metronomic chemotherapy, targeted chemotherapy and other nutriceuticals will be discussed.

Objectives:

1. Educate veterinarians about the scope and options of cancer care in general
2. Educate the audience about the scope of chemotherapy options
3. Discuss injectable chemotherapy
4. Discuss metronomic chemotherapy
5. Discuss targeted chemotherapy
6. Define palliative care
7. Discuss how chemotherapy (injectable, metronomic and targeted) can be used in a palliative setting

Summary:

This lecture will introduce all forms of chemotherapy—injectable, metronomic and targeted—to the general practitioner. We will discuss the definition of palliative and what it means to both the pet owner and the pet. We will talk about what factors affect an owner’s decision to treat a pet with cancer and why palliation is so important. This lecture will focus specifically on the role that chemotherapy, in all its various forms, plays in the palliative care of the pet with cancer.

Part Two: Palliative Care using Radiation Therapy and Pain Management

This lecture will discuss the importance of palliative care in animals with cancer, including the use of palliative radiation therapy and pain medications to help improve quality of life for pets with cancer. It will also discuss alternative radiation options for when pets with cancer are not good candidates for definitive therapy.

Objectives:

1. Educate the audience about the scope of radiation therapy options available for pets with cancer
2. Discuss management of pain and quality of life in pets with cancer
3. Discuss the role of palliative radiation therapy in the management of pain/quality of life
4. Discuss the potential side effects of palliative radiation in animals
5. Discuss novel application of radiation protocols that were previously considered palliative, for control of certain tumors
The 8th Annual Veterinary Cancer Center Continuing Education Lecture:

Summary:

This lecture will outline the importance of palliation of pain and improvement of quality of life for pets with cancer. It will discuss medical management of pain as well as the use of radiation therapy to control pain. Also, this lecture will discuss how radiation protocols that were previously considered palliative can be used to manage tumors in patients when financial restrictions prevent owners from pursuing definitive therapy.

Palliative Care: A Medical Oncologist's Perspective Notes for Dr. Gerald S. Post

The World Health Organization has defined palliative care as an approach. This approach entails multiple specific steps, but it is important to understand that palliative care is not one, two or three things a medical professional does, but rather a way of acting with the patient and their family. This definition lends itself well to veterinarians.

Palliative care should improve the quality of life of our patients; it should prevent and relieve suffering. The early identification, assessment and treatment of pain and other problems are essential elements within this approach. Again, according to the World Health Organization, palliative care intends to neither hasten nor postpone death and offers a support system to help patients live as actively as possible. This approach will enhance quality of life and positively influence the course of illness.

From an oncologist's perspective, palliative care can be used in conjunction with chemotherapy, radiation therapy, or other traditional therapies.

The way veterinarians define palliative care sometimes varies from the World Health Organization. We tend to use palliative care “unofficially” when we talk about “sub-optimal”, “less aggressive”, or any therapy that is less than the “standard of care”. The rationale for this more broad definition may be due to the degree to which economics factor into the decisions of pet owners.

A very recent study evaluated the effect that early palliative care (in conjunction with conventional therapy) had on cancer patients (human). The authors performed a systematic review (a study with a very high level of evidence) and found that early palliative care resulted in improved quality of life and increased patient satisfaction as compared to conventional therapy alone.

Although this type of study has not been performed in veterinary medicine, many veterinary oncologists are keenly aware of the importance of quality of life. At The Veterinary Cancer Center, quantity of life AND quality of life form the two pillars upon which every one of our treatment recommendations are built. We have recently started using a validated Quality of Life Assessment (Lynch et al, Veterinary and Comparative Oncology 2010; 9(3), 172-182).

Increasingly veterinary hospitals across the country are offering their clients and patients palliative care. There are, however, a number of very common myths associated with what palliative care is or is not in veterinary medicine. These misconceptions form the basis for much of the ongoing discussion that many veterinarians involved in palliative care are currently having.
Many of the most common cancers that veterinarians manage lend themselves to palliative care as part or their entire therapeutic plan.

Prednisone can partially palliate some of the lymphomas we see in both dogs and cats. If we use the broader definition of palliative care, than single agent chemotherapy, either injectable or oral can be considered palliative care.

The use of glucocorticoids, diphenhydramine, and famotidine is commonplace in patients with mast cell tumors. Whether these drugs are used as “definitive” or “palliative” therapy is up for debate.

Osteosarcomas and other tumors involving bones are often treated in the palliative setting. The drugs that are most commonly used are bisphosphonate, non-steroidal anti-inflammatory drugs (NSAIDs), and most recently Toceranib (Palladia®).

NSAIDs are also commonly used in the treatment of transitional cell carcinoma. The distinction between “definitive” and “palliative” therapy becomes very indistinct here as NSAIDs have both anti-inflammatory and anti-neoplastic properties in this scenario.

We, at The Veterinary Cancer Center, strongly believe that when it comes to the negative side effects of cancer and its therapy, prevention is key. Given that the prevention of pain and suffering is a key principle in palliative care, most of the anti-emetics and appetite stimulants we use fall into this category. Now more than ever, veterinarians have at their disposal an entire arsenal of medications that prevent or treat nausea and vomiting. Drugs in this class include: dexamethasone, maropitant citrate (Cerenia®), ondansetron (Zofran®), and dolasetron (Anzemet®).

The last category of palliative care that will be discussed is metronomic chemotherapy. This form of therapy includes low doses of an oral chemotherapy, an NSAID, and an inhibitor of matrix metalloproteinase (either doxycycline or minocycline). This therapy is very different from traditional chemotherapy in both the target and goal. The targets for metronomic therapy are the endothelial cells and new blood vessels that are formed by angiogenesis, while the target for traditional chemotherapy are the malignant cells. The goal when standard chemotherapy is utilized is to give the patient the highest possible dose of a cytotoxic agent that the patient can handle. The hope is to kill as much of the cancer as possible while still allowing the patient to survive. The goal with metronomic chemotherapy, on the other hand, is to prevent cancer cells from becoming a mass larger that 2mm, in effect, treating cancer as a chronic disease.

The lines that divide traditional care and palliative care are blurring, especially in veterinary medicine. Is EVERYTHING we do as veterinarian’s palliative in one way or another? SHOULD it be?

Selected References

Early palliative care for patients with advanced cancer: a cluster-randomised controlled trial: Dr Camilla Zimmermann MD, Nadia Swami BSc, Monika Krzyzanowska MD, Breffni Hannon MBChB, Natasha Leighl MD, Prof Amit Oza MD [Lon],Prof Malcolm Moore MD, Anne Rydall MSc, Prof Gary Rodin MD, Prof Ian Tannock MD, Prof Allan Donner PhD, Christopher Lo PhD - The Lancet - 19 February 2014 DOI: 10.1016/S0140-6736(13)62416-2


Antitumor effects of deracoxib treatment in 26 dogs with transitional cell carcinoma of the urinary bladder. Sarah K. McMillan, DVM; Pedro Boria, DVM, MS, DACVIM; George E. Moore, DVM, PhD, DACVP, DACVIM; William R. Widmer, DVM, MS, DACVR; Patty L. Bonney, BS; Deborah W. Knapp, DVM, MS, DACVIM. Journal of the American Veterinary Medical Association. Vol. 239, No. 8, Pages 1084-108, October 15, 2011


Part Two: Palliative Care using Radiation Therapy and Pain Management - Notes Dr. John Farrelly

Why is Palliative Care Important?

Palliative care is likely one of the most important aspects of care for veterinary patients with cancer. In human oncology, approximately 75% of patients receive definitive radiation therapy at some point in the course of their treatment. However, approximately 40 to 50% of the caseload at human radiation oncology centers is made up of palliative radiation cases. Unpublished data in veterinary medicine suggests that the number of palliative treatments is actually higher, likely in the range of 65 to 75% of caseload. These numbers show the importance of palliative care in veterinary medicine.

In veterinary medicine pet owners are mostly concerned with the quality of life and comfort of their pet above their lifespan.

Identifying Pain
The primary problem with palliative care in very medicine is identifying pain. A number of factors contribute to this. Animals hide pain, making it extremely difficult to identify their level of pain. Another complicating factor are the preconceived notions that exist in veterinary medicine regarding animal pain. Until recently most veterinary schools provided only limited training regarding pain identification. Also, in the past, most veterinarians and pet owners felt that animals did not feel pain. Because of this identifying pain in animals can be a very challenging task.

There are number of signs or hints that we can look at to determine if our patients are in pain.

1. Overt signs of pain - some animals with cancer will show obvious outward signs of pain such as lameness, pawing at the tumor, crying out, etc. Dogs, and especially cats, who show outward signs of pain typically have severe pain as most dogs and cats are programmed to hide pain.
2. Radiographic indicators of pain - any patient who has signs of bone destruction on a radiograph, computed tomography (CT) scan, magnetic resonance imaging (MRI) scan, or any other imaging modality likely has significant pain.
3. Tumor as a sign of pain - it is important to also look at the patient’s tumor to get an idea if they may be in pain. Tumors that are red, ulcerated, bleeding, or otherwise appear inflamed are also likely painful.
4. One obvious way that we can identify pain is by paying attention to when we cause pain. Many procedures such as surgery, biopsies, radiation therapy, and even some chemotherapy treatments can cause pain. It is helpful for us to know when we will be causing pain because sometimes this is the easiest form of pain for us to prevent.

In order to try to overcome our preconceived notions regarding pain and our patient’s tendency to hide their pain, it is important to have a high index of suspicion when trying to identify pain in animals. My philosophy when approaching a pet with any tumor is to assume that they all have pain from their tumor.

Treating/Preventing Pain

The most important treatment options available for managing pain in veterinary patients are specific pain medications. Compared to only five to ten years ago there are many more pain medications that are available, effective and affordable. It is important to develop a familiarity with at least a few of these different medications. However, each individual patient can respond in different ways these medications so it is important to be flexible when deciding on pain medications and on the appropriate doses to use. It is also very important to have an understanding of how multiple pain medications can be used together to complement one another, as it is often impossible to control pain with just one medication.

Pain Medications

Non-steroidal anti-inflammatory medications (NSAIDs)

There are a number of NSAIDs approved for use in dogs and cats. They can be very effective for controlling pain associated with inflammation. Dogs can respond differently to different NSAIDs so if one causes side effects, or is not working, you can switch to another.
Two major concerns for toxicity are intestinal upset and kidney damage. It is critical not to use NSAIDs with glucocorticoids or combine NSAIDs, as the risk of gastrointestinal ulceration can be very high. It is important to give a wash-out period of 5-7 days when switching between NSAIDs or between an NSAID and a steroid.

Long-term use in cats is a subject for significant debate. No NSAID has been approved for long-term use in cats. However, two studies describe long-term use of meloxicam in older cats, both with and without renal disease, with minimal adverse effects. However, it is important to warn pet owners about the low risk of renal failure and monitor with exams and bloodwork.

**Glucocorticoids**

Prednisone/Dexamethasone – glucocorticoids can be very effective for controlling inflammation, increasing appetite, increasing general wellbeing/quality of life. As with NSAIDs gastrointestinal upset, along with other side effects, can pose an issue. However, for pets with significant renal disease these may be a better option than NSAIDs.

Depo Medrol – usually we consider this as a last resort. However, in animals with oral tumors, especially cats, owners often cannot give pills, so a long acting injection can sometimes be beneficial.

In cats there is a risk of diabetes with any long term use of glucocorticoids, so owners should be made aware of this and should monitor for signs of diabetes.

**Opioids**

Buprenex (Buprenorphine) – another great option for cats is buprenorphine. Shown to be as effective as IV injection at 0.02mg/kg.

Tramadol – a weak opioid that may have limited benefit for pain control, but it is often useful as a first line pain medication in dogs. Cats may have more opioid effects, such as sedation. Many states treat tramadol as a controlled drug, so it is important to make sure that you are following proper procedure when dispensing this medication.

I find that in dogs with severe pain from bone tumors or from radiation side effects, alternating tramadol and gabapentin (every 4 hours) can be very effective.

Fentanyl – Transdermal patches can be very effective for animals who are difficult to medicate (fractious animals, oral tumors etc.) However, effect can take 6-12 hours and the patches need to be replaced every 3-5 days. Also a controlled substance.

**Other Drugs**

Gabapentin (Neurontin) - Published studies in dogs have shown limited pain control in surgical models, but the dosing used in these studies was less than the currently recommended dose. The three time a day dosing is critical in dogs, and could lead to compliance issues.

Amantadine - Not thought to be very effective on its own, but amantadine may increase the effectiveness of other pain medications, such as NSAIDs. It is dosed SID in people but shorter half-life in dogs and cats may require BID dosing.
Radiation Therapy for Pain Management

Another potentially effective treatment for pain management is radiation therapy. Palliative radiation therapy has been used for a number of years to treat primarily bone tumors, but also can be very effective for pain control for variety of different tumor types. In a number of different studies driving palliative radiation therapy to treat tumors significant pain control occurs in 75 to 85% of patients. In the majority of dogs with bone tumors pain control occurs within one week and often within one to two days. The duration of pain control in most of these studies is approximately 2 to 3 months. Also, in many cases palliative radiation therapy can be repeated as this may result in significant prolongation of big control.

Other Uses for “Palliative” Radiation

In veterinary medicine palliative radiation, a.k.a. hypofractionated radiation can be useful for treating a number of tumors in a more definitive setting. The benefit of hypo fractionate the radiation is that it can be delivered using a small number of treatments with very few side effects. The majority of dogs treated in this manner will develop only mild redness and irritation in the irradiated area. Another benefit of this treatment is that the cost to the owners is usually significantly less than the cost for definitive treatment protocol.

Melanoma

Melanoma is the most common oral tumor in dogs and also has been reported on the digits and the skin. The treatment of choice for the local disease for dogs with melanoma is surgical excision with a wide margin. However, there are many dogs who have non-resectable melanomas or who have owners who are not willing to put their dogs through a surgery. Many years ago it was observed that melanomas in people were very resistant to the effects of radiation. It was discovered that this was because melanomas have an increased capacity to repair the damage caused by radiation. However, it was also found that higher daily doses of radiation could be very effective against melanomas. There are now a number of studies in dogs and one in cats showing that hypofractionated radiation can be very effective in controlling melanomas.

Injection site sarcoma

Injection sites or comments can be very difficult tumors to treat in cats. These tumors are often very large and invasive at the time of diagnosis and involve extensive therapy including surgery, radiation therapy, and chemotherapy. This try-modality therapy has been shown to be very effective in controlling these tumors. However, it can be very costly and also can be very stressful for some cats. A recent publication has shown that cats with injection site sarcomas can also be effectively treated with palliative radiation therapy. In this study, cats who had their tumor excised with surgery with a dirty margin and then were treated with hypo fractionated radiation had tumor control for approximately 20 months and a median survival of approximately 30 months. This combination of treatment, although it is unlikely to result in cure in most cases, is a very reasonable treatment option for cats whose owners cannot afford definitive therapy.

Soft Tissue Sarcomas

Hypofractionated radiation therapy has also been used to treat soft tissue sarcomas in dogs. The majority of these tumors can also be controlled with surgery alone or surgery followed by radiation
therapy. However, just as in cats, these treatments can be expensive and can result in significant side effects and pain. In one study where dogs who had soft tissue sarcomas that were difficult to remove were treated with a minimal excision followed by hypo fractionated radiation 70% of dogs were free of disease three years after treatment. Palliative radiation therapy can also provide some benefit for dogs were surgeries not an option. In one study dogs with non-resectable soft tissue sarcomas were treated with palliative radiation therapy alone had a median survival of over 300 days.

**Selected References**


Oncology Medications

- Asparaginase
- Carboplatin
- Chlorambucil
- Cyclophosphamide
- Dactinomycin
- Doxorubicin
- Hydroxyurea
- Lomustine
- Mechlorethamine
- Melphalan
- Mitoxantrone
- Piroxicam
- Procarbazine
- Vinblastine
- Vincristine

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Our new, 8,000 square foot, state-of-the-art hospital is the largest stand-alone veterinary comparative oncology center in the United States.

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