

MANAGING CANINE BONE CANCER (OSTEOSARCOMA)

Approximately 10,000 dogs a year are diagnosed with bone cancer. Early signs include persistent limp, swelling over a bone, etc or can manifest by change in activity, decreased appetite, etc. It's good to check over your dog and point out any unusual bony changes or swelling you may see. This type of cancer can involve long bones, ribs, jaw bones, skull and spinal bones.

Initially diagnosed, or if diagnosis is suspect, it is best to consult with a veterinary oncologist. You can find one local to your area online at www.vetcancersociety.org. In addition, Colorado State University (CSU), the premier veterinary school in the U.S., will provide a FREE oncology consultation over the phone – you will need a copy of your dog's medical records to share with them, and perhaps you would like your primary vet on the call with you. The contact at CSU is Kathy Paris at (970) 297-4195, the consult coordinator. An oncology vet will usually call you back within a day.

If you are unable to meet with an oncologist, the first thing you need to have determined by your primary vet is if there is metastases (spread) of the cancer to the lungs – **this can be confirmed via chest x-ray, ultrasound, other bone x-rays, CT scan, MRI**. Based on the results, there are multiple treatment opportunities available.

Without Metastasis (Mets): Decide whether your dog is a good candidate for amputation or resection*, and if that is something to be considered.

- **Amputation:** term used when the tumor is located in a limb that will be removed surgically.
- **Resection:** term used when the tumor is located on a bone other than limb, such as rib, jaw or rib or skull, and where the tumor itself and surrounding tissues are removed surgically.

WITHOUT Metastases and WITHOUT amputation or resection: Options to be considered

- ✓ Limb spare procedure (requires specialized veterinary hospital – only applicable to a tumor in the distal front limb such as the bones just above the wrist)
- ✓ Pain Management Medications:
 - NSAIDs (Non Steroidal Anti-Inflammatory Drugs) such as Rimadyl, Deramaxx, Piroxicam, Metacam, Aspirin and Carboprofen.
 - Tramadol – A non-narcotic medication that CAN be taken along with NSAIDs (or alone). Acts centrally to stimulate the opioid receptor in the brain, hence providing pain relief.
 - Amantadine – prevents the 'wind up' phenomenon that floods the brain with pain messages.
 - Bisphosphonates – used for pain management in addition to bone support
- ✓ Radiation to the primary tumor (with or without Bisphosphonates)
- ✓ Bisphosphonates (intravenous or oral), with or without radiation
- ✓ Chemotherapy (usually done in conjunction with radiation, but certainly not required)
- ✓ Metronomic Protocol (Anti-inflammatory, Doxycycline, Cyclophosphamide (oral chemo))
- ✓ Artemisinin (cannot be given together with radiation)
- ✓ Immune Boosters (Omega 3's, etc.)
- ✓ Neoplasene (alternative herbal medicine either ingested, injected or applied topically). In most cases needs to be overseen and applied by a vet.
- ✓ Other alternative/holistic modalities (Accupuncture, Accupressure, Reiki, Flower Essences)

- ✓ Cancer starving diet (high fat and protein, low to no carbohydrates or sugars)
- ✓ Do nothing

WITHOUT Metastases AFTER amputation or resection: Options to be considered

- ✓ Pain Management Medications:
 - NSAIDs (Non Steroidal Anti-Inflammatory Drugs) such as Rimadyl, Deramaxx, Piroxicam, Metacam, Aspirin and Carboprofen.
 - Tramadol – A non-narcotic medication that CAN be taken along with NSAIDs (or alone). Acts centrally to stimulate the opioid receptor in the brain, hence providing pain relief.
 - Amantadine – prevents the ‘wind up’ phenomenon that floods the brain with pain messages.
 - Bisphosphonates – used for pain management in addition to bone support
- ✓ Bisphosphonates (intravenous or oral), with or without radiation
- ✓ Chemotherapy
- ✓ Metronomic Protocol (Anti-inflammatory, Doxycycline, Cyclophosphamide (oral chemo))
- ✓ Artemisinin
- ✓ Immune Boosters (Omega 3’s, etc.)
- ✓ Neoplasene (alternative herbal medicine either ingested, injected or applied topically). In most cases needs to be overseen and applied by a vet.
- ✓ Other alternative/holistic modalities (Accupuncture, Accupressure, Reiki, Flower Essences)
- ✓ Cancer starving diet (high fat and protein, low to no carbohydrates or sugars)
- ✓ Do nothing

WITH Metastases and NO amputation: Options to be considered

- ✓ Pain Management Medication:
 - NSAIDs (Non Steroidal Anti-Inflammatory Drugs) such as Rimadyl, Deramaxx, Piroxicam, Metacam, Aspirin and Carboprofen.
 - Tramadol – A non-narcotic medication that CAN be taken along with NSAIDs (or alone). Acts centrally to stimulate the opioid receptor in the brain, hence providing pain relief.
 - Amantadine – prevents the ‘wind up’ phenomenon that floods the brain with pain messages.
 - Bisphosphonates – used for pain management in addition to bone support
- ✓ Radiation to the primary tumor (with or without Bisphosphonates)
- ✓ Bisphosphonates (intravenous or oral), with or without radiation
- ✓ Chemotherapy (usually done in conjunction with radiation, but certainly not required)
- ✓ Metronomic Protocol (Anti-inflammatory, Doxycycline, Cyclophosphamide (oral chemo))
- ✓ Artemisinin (cannot be given together with radiation)
- ✓ Immune Boosters (Omega 3’s, etc.)
- ✓ Neoplasene (alternative herbal medicine either ingested, injected or applied topically). In most cases needs to be overseen and applied by a vet.
- ✓ Other alternative/holistic modalities (Accupuncture, Accupressure, Reiki, Flower Essences)

- ✓ Cancer starving diet (high fat and protein, low to no carbohydrates or sugars)
- ✓ Do nothing

WITH Metastases diagnosed AFTER amputation: options to be considered

- ✓ Pain Management Medication:
 - NSAIDs (Non Steroidal Anti-Inflammatory Drugs) such as Rimadyl, Deramaxx, Piroxicam, Metacam, Aspirin and Carboprofen.
 - Tramadol – A non-narcotic medication that CAN be taken along with NSAIDs (or alone). Acts centrally to stimulate the opioid receptor in the brain, hence providing pain relief.
 - Amantadine – prevents the ‘wind up’ phenomenon that floods the brain with pain messages.
 - Bisphosphonates – used for pain management in addition to bone support
- ✓ Bisphosphonates (intravenous or oral), with or without radiation
- ✓ Chemotherapy (usually done in conjunction with radiation, but certainly not required)
- ✓ Metronomic Protocol (Anti-inflammatory, Doxycycline, Cyclophosphamide (oral chemo))
- ✓ Artemisinin (cannot be given together with radiation)
- ✓ Immune Boosters (Omega 3’s, etc.)
- ✓ Neoplasene (alternative herbal medicine either injected, injected or applied topically). In most cases needs to be overseen and applied by a vet.
- ✓ Other alternative/holistic modalities (Accupuncture, Accupressure, Reiki, Flower Essences)
- ✓ Cancer starving diet (high fat and protein, low to no carbohydrates or sugars)
- ✓ Do nothing

Please note that these suggestions are possible options and they should be discussed with your veterinarian. Not all of the options apply to all dogs, and not all can be done at the same time. For example, you do not use artemisinin during radiation treatment nor do you use the metronomic protocol when undergoing chemotherapy.

**FOR FURTHER INFORMATION AND SUPPORT PLEASE VISIT US AT
WWW.BONECANCERDOGS.ORG**