

Osteosarcoma in Dogs

A Brief Guide • Part of the Educational Pet Disease Series from Lap of Love

Signs & Symptoms

Initial Symptoms

- Mild to severe limp
- Holding up affected leg
- Difficulty getting comfortable
- Swollen painful areas on leg
- Unwilling to play or exercise
- Depressed attitude, aloof

Intermediate Symptoms

- Unusually irritable
- Decreased appetite
- Panting, difficulty breathing
- Muscle wasting, shaking
- Unable to get comfortable
- Avoids stairs and jumping

Advanced Symptoms

- Fractures secondary to cancer
- Anorexia
- Vomiting, diarrhea
- Whining, crying, barking
- Collapse
- Red, swollen, painful areas

Crisis Situations Requiring Immediate Medical Intervention

- Difficulty breathing
- Uncontrollable panting, shaking
- Unable to walk
- Blue gums and/or tongue
- Sudden collapse
- Uncontrollable vomiting/diarrhea
- Crying or whining in pain

What Is It?

Canine osteosarcoma is an aggressive and malignant cancer of the bone. It is the most common bone cancer, and accounts for 5% of all canine cancers. Osteosarcoma, though capable of affecting any bone in the body, occurs approximately 80% of the time in the the limbs, most commonly forming in bone around the shoulder, wrist, and knee. At the time of diagnosis, 90-95% of affected dogs have metastasis (spread) most commonly to the lungs. The lesion starts deep in the bone and moves outward, replacing healthy bone with weak cancerous bone. The tumor growth becomes increasingly painful and weak areas of cancerous bone can fracture easily. In some cases, visible or palpable swelling may be found in the affected area due to the cancerous bone growth. Symptoms include lameness which may be slow and intermittent or sudden and severe and weight bearing or non-weight bearing, limb swellings, unwillingness to jump, run, use stairs, crying out, shaking, and panting for no apparent reason. Metastasis to the lungs may cause coughing as well as occasional trouble breathing. Symptoms of less common bone cancers depend on the site of the lesion; Oral bone cancers may cause difficulty eating while spinal tumors may cause neurological symptoms. Males are slightly more predisposed, and while no specific cause is known predisposing factors include genetics, pesticides, hormones, breed type, and previous bone trauma.

Diagnosis

The suspicion for bone cancer increases with lameness seen in older pets, large breeds, and at risk breeds. Typically, due to the aggressive tumor growth, clinical symptoms, an exam, and x-rays of the affected limb are adequate to diagnose the cancer. At this time, x-rays of the lungs to check for metastasis is generally performed, as 10-15% of patients will show metastatic lesions at the time of diagnosis. If the diagnosis is questionable, a bone lesion biopsy would provide a definitive answer. Further testing such as CT, MRI, abdominal ultrasound, and spinal fluid analysis may be recommended to stage the cancer and determine the extent, severity, and degree of tumor development throughout the body in preparation for treatment.

Treatment and Management

Treatment centers around either palliative pain management or aggressive pursuit to cure.

1. Surgery - Removal of the affected limb, relieves 100% of the pain in 100% of patients. Osteosarcoma is a severely painful cancer, for which even aggressive oral medications are no match, therefore removal of the limb with the lesion eliminates directly the source of pain, and despite the presence of metastasis, many pets are afforded months of painless, quality time. It is important to note that dogs typically adapt extremely fast and well to amputation as most of them have been using three legs for awhile, given the pain of the osteosarcoma.
2. Chemotherapy/Radiation - Typically pets are treated with amputation for pain relief followed by chemotherapy to delay the progression of the metastatic lesions. Some patients are not chemotherapy candidates, but may still benefit from palliative radiation on the affected limb which can provide significant pain relief in conjunction with oral medications. A multi-modal approach is often best.
3. Pain Management - With or without amputation, osteosarcoma patients should have an aggressive pain management plan. This can include opioids, steroids, anti-inflammatory medications, neuropathic pain medications and muscle relaxants in addition to adjunctive treatments such as acupuncture.



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Prognosis

Unfortunately, the general prognosis for canine osteosarcoma with or without treatment is guarded to grave. Without treatment, other than palliative and hospice care, the average survival time is 30-90 days. With treatment, the prognosis improves mildly. Some protocols provide an average survival time of a year. However, in general, most dogs have passed away or been humanely euthanized within a year's time. The best quality of life, if possible to provide, is gained with amputation of the painful limb and tumor followed by chemotherapy and/or radiation to delay the progression of metastatic disease. Pets at a decent weight with relatively few other concurrent health concerns will have a better overall prognosis for response to treatment. Talk with your veterinarian and veterinary oncologist for a personalized plan.

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Management Tips

Consider providing:

- Easily accessible water and food
- Ramps, stairs, padded surfaces
- A therapeutic foam bed for sleeping
- Measured meals to keep weight stable
- Wet food to increase water intake
- Mobility aids, booties, etc. as needed
- Aggressive, proactive pain management
- Indoor pee pads, diapers, etc.
- Surfaces with traction

Try to:

- Be consistent with medications and nutrition
- Keep pain meds consistent to eliminate unstable pain levels
- Keep furniture arrangements stable
- Track appetite, urination, drinking, weight, vomiting, diarrhea, energy, etc.
- Limit stress (kids, noise)
- Use experienced pet sitters, board at a hospital, use in home groomers
- Address concerns ASAP
- Monitor genital area for matting, fecal and urine staining, and raw skin spots
- Let the pet set the limit of low-impact physical activity
- Limit all rough activity and play
- Carry if possible and discourage jumping from furniture or out of vehicles

Before your pet's condition becomes unmanageable or they are losing quality of life, it is important to begin end-of-life care discussions. Learn about pet hospice care and/or euthanasia services in your area so you are prepared.