



SOUTH CAROLINA
**VETERINARY
SPECIALISTS**
State of the Art Care, In the Heart of the State

Canine Osteosarcoma

What is osteosarcoma?

Osteosarcoma is an aggressive and painful malignant bone tumor of the dog. It can occur in all dogs, but is most common in the large breeds.

What types of osteosarcoma affect dogs?

Osteosarcoma is classified based on the location in the body that the tumor originates. Most cases are *appendicular* or *extra-axial*, meaning they involve the limbs. A smaller percentage of cases are *axial* and involve the spine, pelvis, ribs, or skull. Osteosarcoma can very rarely develop in the soft tissues as primary extraskeletal disease, but this is more often metastatic from a primary bony location.

What causes osteosarcoma?

Cancer is caused by a combination of environmental and genetic factors. While certain breeds are predisposed to osteosarcoma (Rottweilers, for example), a specific cause is usually not identified.

What clinical signs does osteosarcoma cause?

Most patients with osteosarcoma present with lameness in the affected limb. Other signs may be seen and depend highly on the primary tumor location and stage of the disease.

Clinical signs may include:

- Lameness
- Difficulty breathing
- Palpable masses
- Lethargy

What laboratory changes does osteosarcoma cause?

Most patients with osteosarcoma have no laboratory abnormalities. In more advanced disease, an enzyme called *alkaline phosphatase* may be elevated from bone destruction or internal organ function may be affected.

What testing is recommended for osteosarcoma patients?

In evaluating patients with osteosarcoma, our primary concerns are to make certain there are no obvious metastatic lesions (spread of cancer) or other underlying diseases present that may affect treatment. Routine screening urinalysis, CBC and chemistry are performed to rule-out other underlying diseases. Thoracic radiographs



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are taken to evaluate for metastatic disease. Patients may also require ultrasound examination, bone aspirates or biopsy, or other more specific testing. For patients that undergo amputation, biopsy of the tumor will always be performed.

Most patients evaluated for osteosarcoma will have the following tests:

- Chemistry profile
- Complete Blood Count (CBC)
- Urinalysis
- Tumor biopsy
- Chest X-rays

What treatment options are available for osteosarcoma patients?

For patients that present with lameness, amputation is recommended to alleviate pain and remove the primary tumor. For patients with axial disease that cannot have surgery or for patients that are not good candidates for amputation, radiation therapy is a good way to reduce the pain created by these tumors. Most dogs do exceptionally well with amputation and adapt quickly. The pain relief provided by amputation also significantly improves quality of life. Because metastatic disease is common with osteosarcoma, chemotherapy is strongly recommended following surgery. The chemotherapy drugs used for this disease generally cause few evident side effects and are well tolerated. The specific treatment plan will depend on the individual case and we will discuss the treatment options with you at the time of your appointment. Please see our chemotherapy handout for more specific information on these drugs and the side effects that can be seen.

What is the prognosis with osteosarcoma in dogs?

Osteosarcoma carries a guarded long-term prognosis. With no treatment, animals often die or are euthanized within days to weeks of diagnosis. With surgery alone, average one-year survival rates are about 10%. Surgery and chemotherapy, when used in combination, offer excellent quality of life and marked improvement in survival time as compared to surgery alone or with no treatment. The prognosis depends on the history, clinical signs, and type of osteosarcoma present. We will discuss the specifics of your dog's case at the time of your visit.