

# Canine Bone Cancer

## What is Bone Cancer?

In dogs the most common type of cancer that affects the bone is called osteosarcoma. This is a highly aggressive tumor that originates in the bone, causing painful destruction of the bone accompanied by a firm swelling. These tumors also readily spread (metastasize) to other places, like the lung. Osteosarcoma most commonly affects large or giant breed dogs and has a genetic predisposition in some breeds (like Rottweilers). It is most often found in the limbs but can also develop in other parts of the skeleton (ribs, pelvis, head, shoulder, vertebrae). Treatment and prognosis depend on tumor type, location, and extent of disease (stage). Therefore, before deciding on the best treatment course, several tests will be recommended including x-rays of the affected area and of the chest, bloodwork, and potentially a sample of the swelling/area of the affected bone.

## What signs are associated with bone cancer?

The most common sign associated with bone cancer is limping or lack of use of the limb due to pain associated with the tumor. Dogs may also lick or chew at the affected leg. Occasionally, the bone near the tumor can break, resulting in extreme pain and sudden disuse of the leg.

## Treatment of Osteosarcoma

Treatment of osteosarcoma is aimed at removing the painful tumor and using chemotherapy to minimize the extent of metastasis, which is present at a microscopic level in about 90% of dogs at the time of diagnosis. Median survival times with surgery alone are approximately 4-6 months\*. Dogs who have an amputation usually have a very good quality of life and can participate in all of their normal activities: they can still swim, run, and go on long walks with their family.

If amputation is not an option, we recommend radiation therapy. Radiation therapy consists of several high doses of radiation given over a period of a few days or weeks and is aimed at alleviating pain, inflammation, and swelling associated with the tumor. Approximately 70% of patients with osteosarcoma benefit from radiation therapy with relief lasting 2-4 months, sometimes longer, depending on the course of radiation therapy elected. Chemotherapy may be given with radiation therapy as one study demonstrated a greater likelihood of benefit in patients receiving concurrent chemotherapy. Other pain-relieving options include injectable bisphosphonates that stop the painful breakdown of bone, oral non-steroidals, oral narcotics, and/or placement of a pain patch.

As discussed, after amputation or in combination with radiation therapy, chemotherapy is highly recommended. Typically, injectable carboplatin or doxorubicin is given once every three weeks for 6 treatments. This chemotherapy, at the dosages given, is generally well-tolerated and we do not anticipate significant side effects. Median survival times with surgery and chemotherapy are approximately 10-12 months\*, but 20-25% of patients will live longer than 2 years.

*\*We often talk about median survival times in our patients. These survival times mean that 50% of our patients will live beyond this time frame, but 50% will not survive to that time frame.*