

Osteosarcoma

Osteosarcoma is the most common bone cancer in dogs. It behaves aggressively and is typically diagnosed in middle aged large breed dogs, although it can also be seen in young dogs. Bone cancer most commonly occurs in the long bones or limbs, but it can occur in any bone, including the bones of the spine, pelvis, skull and ribs. Rarely, osteosarcoma can be found in non-bony (soft tissue) locations. This cancer is uncommon in cats and has a different behaviour in this species. The exact cause of osteosarcoma is unknown; however, there may be a connection to fast growth in young large breed dogs, metallic implants, bone infection, fractures and radiation therapy.

Clinical signs

Affected animals are often lame with swollen, uncomfortable to painful limbs. This may result in your pet being irritable, having difficulty sleeping, a decreased appetite or a reluctance to exercise. Importantly, many dogs do not show symptoms of chronic pain and by the time it is severe enough to notice, your pet may have already suffered significant discomfort. We know from the human experience that bone cancer is very painful.

Diagnosis and staging

A presumptive diagnosis is often made based on the patient characteristics and x-rays of the affected area. Despite osteosarcoma being the most common bone tumour, there are other causes to consider. For a more definitive diagnosis, an aspirate or biopsy is often performed. This involves taking a sample of tissue and having it assessed at the laboratory (histopathology). In some cases, the tumour is so aggressive and painful that owners may elect to proceed directly to limb amputation (see treatment) and the biopsy results are then received after surgery.

Staging is a term used for screening the body for cancer at other sites. If lesions are found elsewhere, the cancer is noted to have spread or metastasised. For osteosarcoma this could include chest x-rays or a CT scan, and in some cases a bone scan. The team at Advanced Vetcare (AVC) will discuss these with you. Blood and urine tests are also performed to assess general health prior to treatment. Osteosarcomas spread early with ~90% of patients having metastases at diagnosis, these are usually difficult to detect as they are microscopic ('micrometastasis'). Only ~10% of pets will have visible cancer spread at the time of diagnosis.

Treatment & Prognosis

If the cancer is detected in the lungs, the outlook is much poorer and most dogs will not live more than a couple of months, even with treatment. If there is no visible spread of the cancer, more aggressive treatment is warranted. Local therapy is the first step, with **surgery** being the mainstay of treatment. This will often involve an **amputation** for tumours on the limb, however there are limb salvage options available. AVC will discuss these with you if your pet is a suitable candidate. Surgery is the most effective way of relieving your pets' pain and the vast majority of dogs do very well after an amputation. They are usually more comfortable after surgery than they were before! If surgery is the sole treatment the average survival time is only 4-5 months. Surgery provides palliation and pain relief but does not extend survival significantly because it does not address the micrometastasis commonly seen with this cancer. With the addition of **chemotherapy**, the average survival time increases to 12-14 months and 20% of dogs will live to 2 yrs. Chemotherapy in pets is generally well tolerated, please refer to our handout on this topic.

AVC will discuss the most appropriate treatment protocol for your pet. Typically, treatments are given every 3 weeks for 4- 6 treatments.

Radiation therapy can be used if surgery is not possible or is declined. It is used to control pain, but it does not address the micrometastasis. There are a different types of radiation therapy, with varying protocols. Interstate we have access to a new, very targeted form of radiation (stereotactic). AVC can discuss this in greater detail with you should this be an option for your pet. Radiation can be combined with chemotherapy and other forms of pain relief (i.e. bisphosphonate therapy).

Most dogs who are treated with pain relief only will not live for more than a couple of months as it can be very difficult to control bone pain. Euthanasia should be considered if pain relief is not adequate and quality of life is poor. It is important to remember that all the treatments for this disease are primarily designed to restore quality of life, and to then provide as much time as possible. Achieving a good quality of life is the primary objective.