Canine Soft Tissue Sarcoma

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Soft tissue sarcomas include several different tumor types. They originate in connective tissues, including muscle, fat, neurovascular and fibrous tissue, and they include spindle cell tumors, fibrosarcomas, and others. Most of these tumors are first noticed as a mass either on the surface of the skin or just under the skin, and they grow over weeks to months. Sarcomas are locally invasive tumors with only 10% to 18% spreading to distant tissues (metastasis). When the tumor is classified as “high grade” based on microscopic changes, the chance of metastasis may be higher. These tumors can occur in any breed and their cause is unknown.

Staging

After a patient is diagnosed with a sarcoma, tests are done to determine the extent of the original (or “primary”) tumor and to check for potential spread. The primary tumor is usually evaluated by measurements taken during a physical examination. In certain cases, an ultrasound, CT scan, or MRI may be used to help determine the total size of the tumor. If a sarcoma spreads to other organs, lymph nodes and lungs are the likely sites for metastasis. The lymph nodes are evaluated by palpation during the physical examination, and a cell sample may be collected using a needle for aspiration. Occasionally part or all of a lymph node may be removed for examination. The lungs are evaluated using x-rays. A blood panel and urinalysis are also collected to ensure that your pet does not have additional health problems and is otherwise healthy to undergo treatment.

Treatment

The ideal treatment for sarcomas is aggressive surgery. Tumor invasion occurs between tissue layers, and fingerlike projections often extend like a plant’s root system. Some tumors have a “pseudocapsule” that may appear to contain the cells, but cancer cells can penetrate beyond this visual barrier. Therefore, at least one inch of normal-appearing tissue should be removed around the edge of the tumor as the best chance to remove all the cancer. When conservative surgery is performed early, the majority of patients have no recurrence for at least one year.

If surgery alone cannot control the tumor, adding radiation therapy may be beneficial. Radiation may be done either before or after surgery. Radiation therapy involves multiple treatments and anesthesia, but the
majority of cats and dogs handle this very well. Temporary local side effects may occur, but the long-term control can be excellent with two year disease-free periods for most patients. Radiation therapy is sometimes helpful for slowing a tumor’s growth when removal is not possible.

Chemotherapy is generally reserved for sarcomas if surgery and radiation therapy are ineffective or cannot be performed. Chemotherapy may also be recommended if the tumor is classified as high grade or if evidence of cancer metastasis is found. Chemotherapy may be given either through the blood stream or directly into the tumor, and it can slow the cancer for about 40% of patients.

If soft tissue sarcomas are addressed early so that aggressive local control is possible, the prognosis can be very good.