

Soft Tissue Sarcomas in Dogs

Canine soft tissue sarcomas (STS) are locally aggressive cancers which have a low likelihood to metastasize (spread) with the exception of high-grade sarcomas. The metastatic rate is between 5-20% for low/intermediate grade tumors and can be as high as 60% for high-grade tumors. Soft tissue sarcomas are further named for the type of tissue involved and include fibrosarcoma, liposarcoma, malignant fibrous histiocytoma, hemangiopericytoma, myxosarcoma, malignant peripheral nerve sheath tumor (schwannoma, neurofibrosarcoma) and undifferentiated sarcoma. A full evaluation of a dog with soft tissue sarcomas include a complete blood count (CBC), chemistry profile, urinalysis, aspiration of regional lymph nodes, chest radiographs and biopsy. In certain situations, an abdominal ultrasound and/or CT scan may provide valuable information as well. A preliminary diagnosis of a soft tissue sarcoma may be obtained through cytological evaluation of a fine needle aspirate of the tumor but a biopsy of the tumor is necessary to truly assess the tumor behavior. The pathologist evaluates the biopsy tissue for various factors that allow us to determine low, intermediate or high grade status in order to determine the potential treatment options and success.

Treatment options include surgery and/or radiation therapy for the primary tumor site. If the tumor is considered high grade, chemotherapy may also be warranted to combat the metastatic potential (spreading). Surgery is generally the first treatment option, and since local tumor recurrence is common if the tumor is incompletely or narrowly excised, wide surgical margins (3cms and one tissue plane



deep) are recommended. These tumors often are surrounded by a pseudocapsule and appear to “shell out” at the time of surgery but this pseudocapsule is not a barrier to tumor infiltration into the surrounding tissues; which is why a wide excision beyond the tumor is necessary to achieve a complete excision. Patients with a wide-complete excision can experience long term local control (possibly a cure); therefore, in some instances a CT scan or MRI may be advised prior to surgery to further assess the tumor extent to allow the best chance to achieve a wide/complete excision.

If the surgical excision is incomplete (tumor cells extend to the surgery edge) or narrow, tumor recurrence is likely. In situations where more surgery isn't possible, radiation therapy would be advised as a follow-up to surgery to decrease the risk for local tumor recurrence. Radiation therapy involves 15-17 treatments administered on a M-F schedule that usually starts after the patient has healed from surgery. Since we cannot be in the room with the patient during treatment, the patient undergoes a short anesthetic period per treatment to keep them perfectly still so the beam goes exactly where it is supposed to. Patients tolerate the protocol well but do develop side effects towards the end of the protocol which resolve within several weeks of completing treatment. The side effects depend on the region treated but may include redness of the skin; hair loss; and, moist dermatitis similar to a burn. Studies indicate average tumor control rates of two to five years when radiation is used post-op for patients with an incompletely excised tumor (no visible tumor).

If the tumor is in a location where surgery is not a reasonable option, radiation therapy can be used as a primary treatment for visible disease; however, this is usually less successful with only 50-65% of patients achieving tumor control for one year.

High-grade tumors have a greater likelihood of metastasizing (spreading); therefore, we recommend chemotherapy in addition to local therapy (surgery/radiation) in these patients. The most commonly used chemotherapy protocols include single agent doxorubicin for 4-6 cycles or a combination of doxorubicin and cyclophosphamide given once every three weeks for a total of four to six treatments. Side effects are generally self limiting but may include weakness/lethargy, poor appetite/anorexia, vomiting and/or diarrhea, decreased white blood cell count and rare bladder irritation with Cytosan. Adriamycin has a lifetime limit of 6 doses in most patients because if we exceed six doses, we run the risk of causing damage to their heart. Some patients require an echocardiogram prior to treatment and then again towards the end of treatment.

We are here to answer your questions, and to provide you with all of the information you may need regarding this tumor, in order to help guide you in the direction you feel is most appropriate for you and your pet.