Specialist Referral Service
Willows Information Sheets

Soft tissue sarcoma in dogs
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What is a soft tissue sarcoma?

Soft tissue sarcoma (STS) is an umbrella term for a group of tumours that arise from the skin and subcutaneous connective tissues such as:

- fat (liposarcoma)
- fibrous connective tissue (fibrosarcoma)
- nerves (schwannoma, malignant peripheral nerve sheath tumour, neurofibrosarcoma)
- ‘pericytes’ of small blood vessels below the skin in the subcutis (hemangiopericytoma).

These tumours are often considered collectively because of their similarity in behaviour. There are some particular subtypes of STS that are not included in this category as they are typically much more aggressive and so must be considered separately (e.g. histiocytic sarcoma, haemangiosarcoma and rhabdomyosarcoma).

Soft tissue sarcomas may arise from any anatomic site. They tend to appear as if they are discrete and well encapsulated tumours, but are actually usually very invasive into surrounding tissues. As such, local regrowth of the tumour is common after conservative/marginal surgical removal. Soft tissue sarcomas are graded as low, intermediate, or high-grade (sometimes also called 1, 2 or 3 respectively). Most soft tissue sarcomas are low to intermediate grade and have a very low chance of spreading to other places in the body, such as lungs or other organs. High-grade sarcomas have a higher potential for spreading (metastasis) 25-40%.
How are soft tissue sarcomas diagnosed?

A fine needle aspirate is an easy, non-invasive test that can often confirm the presence of a sarcoma. During a fine needle aspirate, a small sterile needle is inserted into the tumour and material is removed which is then sent to the laboratory for testing. A biopsy may be necessary if fine needle aspirates are non-diagnostic. Biopsy or full analysis after excision is required to tell the specific type and grade of the sarcoma.

Once a diagnosis is made, staging (tests to see if the cancer has spread) is recommended to rule out spread of disease and evaluate your pet’s overall health. Staging for sarcomas typically involves routine blood tests, chest x-rays, and evaluation of nearby lymph nodes (though lymph nodes are uncommonly affected by sarcoma). An abdominal ultrasound may also be recommended. CT scans are often performed as well.

What is the treatment?

**Surgery**

Surgery is the mainstay of treatment for soft tissue sarcomas. Surgical excision must be wide and deep in order to remove all of the tumour tissue. When tumours are excised surgically with ‘clean’ surgical margins, no further treatment may be necessary. If the tumour was not removed with adequate margins as assessed by the pathologist under the microscope when they look at the excised tissue (so called ‘dirty’ margins), a second surgery may be recommended to excise more tissue and help ensure adequate removal of all tumour cells.

**Radiation therapy**

Radiotherapy is the use of high dose x-rays directed at a tumour (or area where a tumour has been removed) to kill off cancer cells/cells left over after surgery. In some instances, aggressive surgery is not possible without severe disfigurement or loss of function. In cases where aggressive surgery is not possible, or despite an aggressive resection where tumour cells remain at the margins, radiation therapy can be used to prevent or delay regrowth of the tumour. Radiation therapy is well-tolerated in dogs. Side effects are transient and limited to the site where radiation therapy is performed.

Radiation therapy may also be used for large tumours that cannot be surgically removed. Radiation therapy for these tumours is not considered to be as effective as radiation therapy for microscopic disease after surgery. These tumours do not rapidly regress after radiation and ‘control’ may be defined as a slowly-regressing (6 months or longer) tumour, or a tumour that stays stable in size. In some cases, the tumour may regress enough to make surgical removal possible.

**Chemotherapy**

Chemotherapy is sometimes recommended for high-grade sarcomas to prevent or delay the onset of distant metastases (spread to other sites). Chemotherapy is very well-tolerated in dogs on the whole, but some side effects do occur.

What is the prognosis?

Soft tissue sarcomas that are low to intermediate grade and can be removed completely with surgery have an excellent long-term prognosis.

For high-grade sarcomas, the long-term prognosis is more guarded. Chemotherapy is indicated to help delay the onset of metastasis (spread); however, these dogs may unfortunately eventually succumb to spread of the tumour to other organs.

The best time to treat a soft tissue sarcoma is the very first time it occurs. Tumours that regrow after an initial surgery are often more aggressive in their behaviour. This makes the potential for metastases greater and our ability to control the tumour locally, even with additional radiation therapy, much more difficult. Early treatment is better!

Why should I bring my dog to Willows for diagnosis and management of soft tissue sarcoma?

Willows is unique in the UK in having recognised, accredited cancer specialists working in both the medical and surgical aspects of tumour diagnosis and management.

We aim to provide the best possible care and treatment for your pet in our state-of-the-art hospital. Our oncologists work closely with the imaging Specialists who run Willows sophisticated imaging facilities, as well as with expert anaesthesia and analgesia Specialists and 24-hour veterinary and nursing staff, all of whom help to give our patients the very best treatment and care.

If you have any queries or concerns, please do not hesitate to contact us.
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