Characterization of Infiltrative Macrophages in Canine Soft Tissue Sarcomas: A Model for the Soft Tissue Sarcoma Tumor Immune Microenvironment in Humans

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Immune cells infiltrating soft tissue sarcomas (STS) are a potential target for novel treatment strategies. Macrophages are the predominant infiltrative immune cell within the tumor immune microenvironment (TIME) in human soft tissue sarcomas (STS). There is limited information about the STS TIME in dogs; however, macrophages, an immune cell, have been identified previously. Our study aims to better characterize macrophages within canine STS. After routine surgical removal, masses will undergo routine microscopic evaluation. In addition, specific cell staining (immunofluorescence) will be performed on tumor sections to further characterize infiltrative macrophages.

Client Compensation:
The study provides only $700 toward the cost of surgery and biopsy results. All remaining costs are the responsibility of the owner. The total cost of diagnostics and surgical intervention is dependent on the individual dog and its tumor; however, costs are typically between $2500-5000.

Potential Medical Benefits:
Dogs participating in the study will not directly benefit from the study.

Potential Medical Risks:
The risks associated with the study are those associated with standard care, and there are no additional risks related to research activities. General surgical complications for excision of a soft tissue sarcoma and general anesthesia include aspiration pneumonia, drug reactions, hypotension, cardiopulmonary arrest, bleeding, infection, local recurrence, development of metastatic disease, opening of the incision (dehiscence), and need for bandaging. It is possible that enrolled dogs may experience unexpected adverse events.

What qualifies my pet for enrollment?

Inclusion Criteria:

Eligible patients (any breed of dog) must meet all the following:

- Dogs with a diagnosis of a suspected soft tissue sarcoma based on cytology.
- The mass is located in the skin or directly below the skin.
- Routine pre-operative evaluation including pre-operative blood work, chest radiographs, and physical examination.
- Surgical removal of the suspected soft tissue sarcoma.

Exclusion Criteria:

- Treatment with immunomodulatory drugs (corticosteroids such as prednisone, immunosuppressants such as cyclosporine, non-steroidal anti-inflammatory drugs such as carprofen, etc.) within 30 days of surgery.
- Surgery for local recurrence or revision of a previous definitive surgery
- Concurrent diagnosed endocrinopathy such as hypothyroidism, hyperadrenocorticism (Cushing's disease), etc.

Diagnosis/Condition Being Studied: Soft tissue sarcomas (STS)

Intervention: No direct intervention will be performed. Samples will be collected from tumors after surgical removal.

Primary Outcome:
We will assess infiltrative immune cells in tumor samples collected after the tumor is removed.

Primary Outcome Measure:
We will use routine microscopic evaluation and specific cell staining (immunofluorescence) on the collected samples.

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Primary Outcome Endpoint:
Dogs will be enrolled at the time of admission for surgery with completion for the individual dog at the time of mass removal.

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If you believe your pet may be eligible for this study, please fill out a pre-screening questionnaire.