VIRGINIA-MARYLAND
COLLEGE OF VETERINARY MEDICINE
ANIMAL CANCER CARE
AND RESEARCH CENTER
VIRGINIA TECH

Clinical Research Project
Client Consent Form

Study Title: Pilot study of partial ablation using high-intensity focused ultrasound (HIFU) in feline soft tissue sarcomas

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One of the missions of the Virginia-Maryland Regional College of Veterinary Medicine is to create, disseminate and apply medical knowledge through discovery, learning, and engagement. You are invited to participate in this mission by enrolling your animal in a clinical research study. Your participation is entirely voluntary, and you may withdraw your animal from the study at any time by notifying the Principal Investigator. There is no penalty if you choose not to participate.

Study Purpose:

Soft tissue sarcomas are a common form of cancer in cats, and may be associated with injections or vaccines. They can invade tissues that are vital to normal function and complete, curative surgical removal can be impossible without amputation or radiation therapy. In some cases, a tumor may be surgically resectable, but it could still recur at the surgical site or in a distant site like lymph node or lung.

One attractive option for such cases is immunotherapy. We propose using high-intensity focused ultrasound (HIFU) to kill tumor cells and release antigens from tumors, stimulating the patient's anti-tumor immune response. HIFU can kill cancer through thermal (HIFU) or mechanical (histotripsy) methods. We hope to find out if HIFU application will result in both cancer cell death and immune system activation in cats. To determine if the treatment is effective, we are recruiting cats with soft tissue sarcomas located in the skin to undergo HIFU treatment ***prior to surgical removal*** of the tumor.

The application of this experimental therapy has the potential to directly enhance the quality of life of cats diagnosed with the disease and defray the cost of treatment. At the same time, the results of our efforts may lead to improved treatment options for human cancer patients.

Study Design/Procedures:

Pretreatment evaluation (screening, prior to enrollment)
Before beginning treatment your cat will undergo the following within the past month to determine if s/he is a good candidate to enroll in the study. Numbers 2-4 can be completed by your family veterinarian.

1. **Complete physical exam**
2. **Lab work:** We will obtain blood samples from your pet for a complete blood count and chemistry profile. Six milliliters (about 1 teaspoon) of blood will be collected from a vein in your pet's neck, which is the easiest access point. We will also collect 5 milliliters of urine.
3. **Biopsy of the tumor:** A needle sample, core or wedge sample of the tumor will be obtained for diagnostic purposes.
4. **Thoracic radiographs:** Three-view chest x-rays are required prior to scheduling the CT scan.
5. **Tumor, thoracic, and abdominal imaging:** A CT scan of the thorax, abdomen, and tumor must be performed by the Oncology service in Roanoke once the initial labwork, diagnosis, and chest x-rays have been approved. The CT scan is required to make the final determination of whether the tumor can be removed safely by our surgeons.

Eligibility criteria

To be eligible for enrollment, your cat must have a diagnosis of a soft tissue sarcoma that is at least 3 cm in diameter. The tumor must be able to be removed by surgery, and you must agree to this surgery. Your cat must be healthy enough to undergo anesthesia during the study, and is expected to live for at least 4 weeks. There must have been no prior treatment other than a prior surgery, or at least 3 weeks since the last treatment with chemotherapy or other anti-neoplastic therapy, or since the last treatment with radiation.

Treatment

Once your cat is enrolled in the study, there are (4) required clinic visits, (2) anesthesia procedures, (3) blood draws, and (2) surgical procedures.

If your cat meets the eligibility criteria, your cat will be scheduled for either thermal (HIFU) or mechanical (histotripsy) treatment within ten (10) days of the screening evaluation and enrollment. HIFU will be applied to the tumor under general anesthesia. Your cat's fur/hair will be clipped over the tumor as is standard for any ultrasound in cats. The actual treatment will be tailored to the individual tumor of each cat, and be delivered under general anesthesia in a continuous or series of bursts of sound will be focused on the tumor to kill the cancerous cells through unbroken skin surface. The HIFU treatment is expected to take 30 minutes to an hour, but may take longer for some patients. Prior to the procedure, a small tumor sample (biopsy) and blood samples for later evaluation of pre-treatment immune cells and signals will be taken. Your cat will be recovered from the procedure and planned to be sent home the same day. Due to timing and for the safety of your pet, s/he may need to stay overnight while recovering from anesthesia. Your cat will need to return to the Animal Cancer Care and Research Center in Roanoke for a quick blood draw (< 15 minutes) the day after HIFU, and to the Veterinary Teaching Hospital in Blacksburg 4-6 days following HIFU for surgery to remove the tumor. The removal will be performed or supervised by a board-certified veterinary surgeon with additional training in cancer surgery. Your cat will recover and be discharged as is standard for patients, based on surgeon discretion.

Study visit summary

	Eligibility visit(s) screening and baseline visits may be two visits	**HIFU or histotripsy treatment under general anesthesia** Within 10 days of enrollment	**Recheck visit** 1 day after HIFU	**Surgical resection** 4-6 days after HIFU	**Recheck visit** 2 weeks after surgery
Physical exam	X	X	X	X	X
CBC, chemistry, urinalysis	X	X		X	+/-
Informed consent	X				
Photographs and measure tumor / incision	X	X	X	X	X
Biopsy and histopathology	X			X	
Blood collection for cytokine analysis		X	X	X	
CT scan + radiologist interpretation of tumor, thorax and abdomen under general anesthesia	X				

Follow-up

Your cat will need to return to the Oncology service at 2 weeks after the definitive surgery, as part of the follow up after tumor resection for recheck and suture removal. At the recheck visit, your pet will have a physical exam, and additional diagnostics if indicated. We ask that you keep the clinical oncology service and investigators informed on the status of your pet's health.

Risks and Benefits:

The goal of this study is to develop a new, more effective and safe therapy against cancer. Some of the procedures performed in this study are routine clinical procedures. **The HIFU therapy is experimental and not part of the standard treatment.** Side effects that may be seen in your pet during this study may include but are not limited to fever, tumor inflammation, tumor-site discomfort, systemic inflammation, risk for severe infection, and death.

Although unexpected, there could be problems with the diagnostic procedures required for enrollment (lab-work, staging, biopsy). These problems can be due to inflammation or infection and may result in bruising at the collection site. Additionally, all animals going under general anesthesia are in risk of adverse effects that may result in death. We take stringent measures to minimize these risks by taking steps to prevent contamination of the biopsy site, and monitor continuously the vital functions of your pet when under general anesthesia and during the recovery period.

Study Costs and Compensation:

The screening (eligibility) tests, surgery, and post-surgery recheck visits are not fully covered by the study. Your total out of pocket costs are estimated to be between $2900 and $3400.
Screening: Labwork and chest x-rays cost approximately $900 if performed at ACCRC. If performed by your regular veterinarian, they can be sent to ACCRC to begin the screening process. Tests and images of insufficient quality will not be accepted. An exam and CT scan with the oncologists at ACCRC will be necessary to fully determine whether your cat is eligible to enroll.
Baseline visit: If, at the baseline CT scan, the surgeons deem that the tumor cannot be safely removed or you do not agree to the recommended surgery, the cost of the CT scan and biopsy will be out-of-pocket at $2000.
Surgery: If your cat is enrolled, it is expected that the surgery visit out-of-pocket fees will be $2000-2500.

Once your cat is eligible and enrolled, the study will provide $5,000 worth of diagnostics, treatment, and medical care.
Specifically: The entire cost of the baseline CT scan and radiologist interpretation, up to $350 for general anesthesia for the CT scan, $250 for the biopsy and histopathology, the exam fees and study-required labwork, up to $350 for the general anesthesia and HIFU/histotripsy treatment, and $2,000 of the cost of the surgery visit.

You are responsible for any clinical fees exceeding the above costs, fees for surgery and post-operative care exceeding $2,000, any fees associated with medical complications of the HIFU therapy, and diagnostics or treatments performed not associated with the study or other medical problems that arise during the study.

Confidentiality:
The data collected in the course of this study is confidential. In any publication or presentation of the study data, including photos of your pet's tumor, we will not include information that would make it possible to identify a him or her. Research records will be kept in a locked file; only researchers will have access to the records.

In giving my consent by signing this form, I acknowledge that I have been informed of the purpose and nature of this study and its associated procedures, as well as any possible side effects. You will be given a copy of this form to keep for your records.

Statement of Consent:
I have read and understood the above information. I have been given the opportunity to ask questions and receive answers, and I consent to participate in the study. I further certify that I am the owner (or duly authorized agent of the owner) of _____ .

Owner or Agent Signature: _____ Date: _____

Attending Clinician Signature: _____ Date: _____

Please don't hesitate to contact us if you have any questions or concerns about this study.
The research and procedures have been reviewed and approved by the Virginia Tech Institutional Animal Care and Use Committee and the Virginia-Maryland Regional College of Veterinary Medicine Veterinary Teaching Hospital Board.

If you have any questions or concerns regarding the study and would like to talk to someone other than the researchers, please contact:

Mindy Quigley, Clinical Trials Coordinator
vettrials@vt.edu

Dr John Rossmeisl, Interim Director of the ACCRC

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