

Pilot study of partial ablation using high-intensity focused ultrasound (HIFU) in feline sarcomas

Purpose

To determine if high-intensity focused ultrasound (HIFU), a treatment that can destroy tissue using sound waves, will result in tumor cell death and immunologic activation in cats with sarcomas.

Background

Soft tissue sarcomas are a common form of cancer in cats, and are sometimes associated with injections or vaccines. They can invade tissues that are vital to normal function, and complete surgical removal can be impossible without amputation or radiation therapy. In some cases, a tumor may be removable by surgery, 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 mechanical high-intensity focused ultrasound (HIFU) to kill tumor cells and release antigens from tumors, stimulating the patient's anti-tumor immune response. We hope to find out if HIFU application can both kill tumor cells and activate the immune system 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.

This study is funded by the [Focused Ultrasound Foundation](#).

Eligibility

- Cats with a diagnosis of a soft tissue sarcoma that is at least 3 cm in diameter
- Tumor must be able to be removed by surgery, and owner must agree to surgery
- Free from serious systemic illness
- Life expectancy of at least six weeks

Exclusion Criteria

- Cats who have received any tumor-directed therapy (e.g. radiation) or immunosuppressive drugs within four weeks prior to study enrollment
- Cats who have received chemotherapy within three weeks prior to study enrollment

Study Design

Prior to enrolling in the study, your cat must undergo cancer staging, including a complete physical exam, lab work, tumor biopsy and a CT scan. These procedures are at owner expense.

If your cat meets the eligibility criteria, s/he will be scheduled for the HIFU treatment within ten (10) days of 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 treatment will be delivered in a series of bursts of sound that will be focused on the tumor to kill the cancerous cells through unbroken skin surface. The HIFU treatment is expected to take 30-60 minutes, but may take longer for some patients.

Your cat may be sent home the same day, or if due to timing of the treatment or 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 surgery to remove the tumor 4-6 days following treatment. Your cat will be discharged according to standard procedures, based on the surgeon's discretion. Your cat will return for a recheck 2 weeks after the surgery.

Compensation

The screening (eligibility) tests and post-surgery recheck visit are not covered by the study. Your total out of pocket costs for the study for the screening and recheck visits are estimated to be \$2,000.

Once your cat is enrolled, the study will cover the expenses for the subsequent lab-work (\$200), the anesthesia and HIFU treatment (\$450), and will cover up to \$3,000 of the cost of the surgery visit. You are responsible for any clinical fees for surgery exceeding \$3,000 and any fees associated with medical complications of the HIFU therapy or other medical problems.

Contact

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