Virginia-Maryland College of Veterinary Medicine

Veterinary Teaching Hospital
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INFORMED CONSENT

Ultrasound-guided histotripsy ablation for the treatment of canine brain tumors through an acoustically transparent cranial window

Principal Investigator: Dr. John Rossmeisl

Purpose of Study: This study is a collaborative effort between researchers at the Virginia Tech College of Veterinary Medicine and the Department of Biomedical Engineering. The purpose of this study is to investigate the safety and anti-tumor activities of a new ultrasonic technology, called histotripsy, that can noninvasively destroy (ablate) tumor tissue using acoustic energy.

Eligibility: To be eligible for participation in this study, the canine patient must have a measurable ($\geq$10 mm in diameter) primary brain tumor documented with MRI that is able to be removed with surgery. The canine patient must be in good overall condition and have no other serious illness, and must not have excessive neurologic problems. The pet owner must be presented with all available treatment options for the diagnosed cancer and must have either declined or had their pet fail other therapies.

Procedures: The canine patient will undergo an initial brain surgery that will allow for tumor biopsy, placement of the acoustically transparent cranial window (ATW), and subsequent treatment of the brain tumor with histotripsy. The ATW is a small piece of a plastic-like polymer that has been approved for medical use. The ATW will be inserted on the surface of the patient's brain to allow sound waves to pass through. Immediately after the histotripsy treatment, an MRI will be performed and the dogs will be recovered from anesthesia. Two days after the histotripsy treatment, the dog will be anesthetized for brain ultrasound and MRI examinations and surgical removal of the brain tumor. The dogs will be then evaluated on scheduled recheck visits with physical and neurologic examinations on day 14 and 42 post treatment, and brain ultrasound and MRI scans will be performed on days 14 and 42. We will analyze the safety and effectiveness of the therapy using brain images and tests performed on the tumor tissue we remove.

Associated Risks: The tolerability and safety of histotripsy, when combined with conventional therapies such as surgery, has not been fully studied. The experimental therapy in this study has inherent risks, including unexpected death. Other risks include:

> **Cancer (Brain Tumor) Progression**: Neurologic signs such as a depressed level of consciousness, visual problems, limb weakness/incoordination, or seizures could develop or get worse.

Histotripsy or Surgery associated adverse events: Neurologic signs such as a depressed level of consciousness, visual problems, limb weakness/incoordination, or seizures could develop or get worse. Other possible risks include the development of pneumonia, post-operative urinary tract or surgical site infections, and severe respiratory compromise that requires use of a mechanical ventilator.

We hope that minimal adverse events will be experienced by your pet. However, this is an experimental clinical trial so all potential adverse events associated with study cannot be completely predicted. Any sign of illness in your dog should be reported to your attending clinician immediately and may require return to the Veterinary Teaching Hospital for evaluation.

Compensation: Once the dog is deemed eligible, the study will cover costs associated with surgery to biopsy the tumor, implant the cranial window, and administer the histotripsy treatment, as well as the second surgery to remove the tumor, anesthesia for repeated MRI scans, and clinical visits during the study period.

☐ I acknowledge that I, the pet owner, am responsible for the cost of medications and associated veterinary fees necessary to treat secondary effects of my dogs's brain tumor (such as seizures and brain edema) that existed prior to enrollment in the trial, as well as for travel and related expenses that may be incurred by participating in this trial.

☐ I understand that my animal(s) participation in this study is entirely voluntary. Refusal to participate or to continue to participate carries no medical penalty, and I am free to withdraw my animal from this study at any time without medical penalty or prejudice.

☐ I understand that my voluntary removal will constitute disqualification from further participation in this study, however if I do withdraw my pet prior to the study's conclusion, then I forego further financial support.

☐ I understand that my animal may be required to withdraw from the study for violation of eligibility requirements, or noncompliance with restrictions and/or procedures during the study. This also constitutes disqualification.

☐ I may also be required to withdraw from the study to protect my animal's health (such as with the occurrence of significant injury, adverse reactions, or illness whether or not a consequence of the study), or if the study is terminated prematurely.

☐ I have not withheld information regarding my animal's medical history. I acknowledge that I have read and understand this consent form and all my questions have been answered to my satisfaction.

☐ I have been given a copy of this consent form *if I* have requested a copy.

☐ I am aware that this research has been reviewed and approved by the Institutional Animal Care and Use Committee of Virginia Tech.

☐ I have been informed of the possible benefits and risks associated with this treatment. I understand that potential side effects of the histotripsy are not fully understood.

☐ I have been informed of the possible risks associated with biopsy and surgical removal of my dog's brain tumor.

☐ I understand the risks of general anesthesia needed for MRI imaging studies and surgery for my pet (including death).

☐ I will administer prescribed doses of any medications as prescribed by my veterinary attending clinician.

☐ I understand the need to return for all appropriate follow up care at the Veterinary Teaching Hospital as scheduled including:

- Day 0 evaluation (surgical visit)
- Day 14 evaluation
- Day 42 evaluation

☐ I have been informed of the study costs provided through participation in this study.

☐ I agree to return to Virginia Tech for evaluation if directed by my attending clinician or if my dog experiences any illness.

☐ I acknowledge that in the event of acute medical complications associated with the histotripsy or surgical treatment, study funds will cover their management (up to $2000.00 per dog). This accounts for the study period only (42 days).

☐ I understand that information; case materials, photos and patient information gathered in this study may be used for scientific presentations and publications.

☐ I have disclosed all medications my dog is receiving and I will not administer any new (not prescribed) medications during the course of this study (including vitamins, supplements, pain medications, novel NSAIDS, aspirin, etc.).

☐ I understand that in the unexpected event of my pet's death while on study a post-mortem examination will be required.

☐ By signing below I agree to permit my dog _____ (insert name) to participate in this clinical study and understand the information provided herein. I understand that a copy of this document will be provided to me upon request.

Owner or Agent Signature:_____ Date: _____

Owner or Agent Printed Name: _____

Attending Clinician Signature: _____ Date: _____

Attending Clinician Printed Name: _____

Please don't hesitate to contact us if you have any questions or concerns about this study.

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

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