Policy on Surgery

This document establishes the policy of the IACUC regarding the performance of surgical procedures at the University of Kentucky. Specific research requirements that deviate from this document must receive IACUC approval prior to initiating.

Policy

Successful surgical outcomes in research animals of all species (including mice and rats) require the application of current standards of veterinary care. Proper aseptic techniques must be employed to prevent surgical-related infections, and appropriate anesthetics and analgesics must be used to prevent or mitigate pain, distress and discomfort. Researchers performing surgical procedures in all animals must adhere to the following:

- All survival surgeries (major and minor) must be performed using aseptic techniques.
- Non-survival surgical procedures do not require aseptic techniques or dedicated facilities, but should be performed in a clean, clutter-free area.
- Major survival surgical procedures on non-rodents for biomedical research must be performed in dedicated surgical facilities.
- A single animal may not undergo more than one major survival surgery unless the multiple procedures are required for the health of the animal or to meet the objective of a single animal research activity, justified for scientific reasons, and approved by the IACUC.
- All surgeries must be performed by qualified, trained personnel using techniques that avoid or minimize pain (e.g., adequate anesthesia and analgesia).
- Research personnel must maintain adequate intra-operative (e.g., during the surgery) and postoperative monitoring records. IACUC members and veterinary staff may request copies of all such records for review without prior notice.
- Surgery conducted in the field on agricultural species or wildlife require use of aseptic technique and use of appropriate anesthesia and analgesia.

The linked document (see references) provides guidelines for the performance of surgical procedures. Please note that these requirements may differ between USDA-regulated species (dogs, cats, non-human primates, guinea pigs, gerbils, hamsters, etc.) and non-USDA-regulated (rats (Rattus), mice (Mus), etc.) species.

In general, principles of aseptic surgery apply to all animals. The minimum requirements for surgical procedures are detailed in the Animal Welfare Regulations (AWR's) [9 CFR, Chapter 1, Subchapter A - Animal Welfare], the *Guide for the Care and Use of Laboratory Animals (Guide)* and the *Guide for the Care and Use of Agricultural Animals in Research and Teaching (Ag Guide).*

Definitions

Non-survival Surgery (Terminal Surgery) – Non-survival surgery is a procedure where the subject animal is placed in a surgical plane of anesthesia prior to starting the procedure and maintained in the surgical plane of anesthesia until the animal is euthanized at the termination of the procedure. At no point during the procedure is the animal permitted to regain any level of conscious pain perception. Examples of non-survival surgery include perfusion or tissue collection that lead to death of the animal.

Survival Surgery – Survival surgery is any surgical procedure where the animal is permitted to regain any level of pain perception either during or after completion of the surgical procedure.

Minor Survival Surgery – "Minor survival surgery does not expose a body cavity and causes little or no physical impairment" (Guide p 117). Examples of minor surgical procedures include skin biopsies, vascular catheter implantation, subcutaneous implants (osmotic minipumps, tumor cells, etc.), routine agricultural procedures such as castration, and wound suturing. Laparoscopic surgeries and procedures may be classified as either minor or major surgical procedures depending upon the impact of the procedure on the animal (Guide p 117).

Major Survival Surgery – "Major survival surgery penetrates and exposes a body cavity or produces substantial impairment of physical or physiologic functions (such as laparotomy, thoracotomy, craniotomy, joint replacement, and limb amputation)" (Guide p 117). Strict attention to aseptic surgical technique is required to prevent postoperative infections and resulting animal pain and distress. Consultation with the attending or clinical laboratory animal veterinarian is encouraged if you have questions regarding appropriate techniques, anesthesia, aftercare, or other aspects of the procedure.

Multiple Major Survival Surgery – Multiple major survival surgeries involve two or more temporally separate major survival surgical procedures on the same animal.

Multiple Survival Surgery – Multiple survival surgeries involve two or more temporally separate survival surgical procedures on the same animal. Multiple procedures conducted under a single anesthetic episode are not considered to be Multiple Survival Surgery.

References

Institute of Laboratory Animal Resources (U.S.). 2011. Guide for the Care and Use of Laboratory Animals. Washington, D.C.: National Academy Press.

United States., United States. Animal and Plant Health Inspection Service. 2017. Animal Welfare Act and Animal Welfare Regulations. Washington, D.C.: U.S. Dept. of Agriculture, Animal and Plant Health Inspection Service.

Guidelines and References for Meeting Policy 102 Surgery

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