CMC-HMC IACUC Surgery Guidelines

Purpose and scope

This policy sets minimum requirements for surgical procedures on vertebrate animals at CMC and HMC. It applies to all covered species and to survival and non-survival surgery. Species-specific methods, drugs, and doses are described by the PI in the protocol and are subject to IACUC and veterinary review.

Responsibilities

The PI is responsible for ensuring that everyone performing surgery or providing perioperative care under the protocol is trained and follows this policy and the approved protocol. Surgery may begin only after the IACUC has approved the surgical procedures in the protocol and the location in which they will be performed. Any change to the procedures, anesthesia, analgesia, or post-operative care requires prior IACUC approval.

Requirements

1. **Anesthesia.** Animals must be anesthetized with agents and doses approved in the protocol. Anesthesia must be sufficient to prevent pain throughout the procedure.
2. **Depth of anesthesia.** Depth must be confirmed before the first incision and monitored throughout the procedure using a method appropriate to the species. The animal must remain at a surgical plane until the procedure ends. Physiologic status (for example, respiration or body temperature) must be monitored and supported as needed.
3. **Pain management.** Analgesia must be provided before, during, or after surgery as described in the approved protocol and must be continued for as long as the animal is expected to experience pain. Analgesia may be withheld only if the IACUC has approved scientific justification in the protocol. Dosing may be adjusted based on clinical observations and veterinary guidance.
4. **Aseptic technique.** All survival surgery must be performed using aseptic technique, including sterile instruments and implants, appropriate preparation of the surgical site, and appropriate PPE for the surgeon. Surgeries must be performed in a clean location approved by the IACUC. Non-survival surgery does not require aseptic technique, but should be performed using clean technique and at minimum with clean instruments.
5. **Instrument sterilization.** Instruments and supplies must be sterilized before use. Sterilized packs must be labeled with the sterilization date. Autoclaved packs expire six months after the autoclave date and must be re-sterilized before use after that date.
6. **Post-operative monitoring and care.** Animals must be continuously observed until they have recovered from anesthesia and are ambulatory, and must not be left unattended during recovery. Post-operative monitoring must occur at least daily until wound closures are removed or the wound has healed, and must include assessment of pain, distress, and surgical site condition. Supportive care and analgesia must be provided as needed. Animals with unrelieved pain, wound complications, or other adverse signs must be evaluated by the attending veterinarian. Humane endpoints in the protocol must be followed.

7. **Documentation.** A surgical record must be maintained for each animal and kept where it is available to the veterinarian and the IACUC. It must include the date, procedure, personnel, anesthetic and analgesic agents and doses, and post-operative observations and treatments, including the date wound closures were removed. Unanticipated complications, morbidity, or mortality must be reported to the attending veterinarian and the IACUC.

Deviations
Any deviation from this policy must be described and justified in the protocol and approved by the IACUC in advance.

Reference
National Research Council. *Guide for the Care and Use of Laboratory Animals*, 8th ed. National Academies Press, 2011.