
This Standard Operating Procedure (SOP) describes procedures for general surgery of large animal species such as swine, dogs, rabbits, cats, non-human primates (NHP).

It outlines pre-, peri- and post-operative procedures for surgery on non-rodent species and therefore does not apply to mice, rats, gerbils, guinea pigs, chinchillas and hamsters.

Principal investigator (PI) and their research staff, veterinary care staff and all qualified personnel who perform surgery on non-rodent species, or assisting in the procedures.

- 4.4.8. Transfer the patient to the designated surgical suite only after the animal has been shaved and coarsely cleaned with a disinfectant scrub. Perform final preparation of the surgical site after the animal has been positioned on the surgery table.
- 4.4.9. Antiseptic skin preparation:
 - 4.4.9.1. Use aseptic technique when performing skin antiseptics.
 - 4.4.9.2. Start at the center of the surgical site and move to the outside of the prepared area in a circular manner.
 - 4.4.9.3. Perform three scrubs with a non-soap solution (e.g., alcohol, diluted non-soap antiseptic or sterile water) and three alternating rinses with an antiseptic soap solution (e.g. 2% chlorhexidine solution or povidone-iodine solution).
- 4.4.10. Sterile surgical draping:
 - 4.4.10.1. Drape the animal with a sterile, impermeable covering to isolate the disinfected area. This is performed by the gloved and gowned surgical team.
 - 4.4.10.2. Fix the drape in place with clamps.
 - 4.4.10.3. Cover a stand or table with a sterile drape on which sterile instruments, gauze and suture are placed.
- 4.4.11. The use of antibiotics prophylactically is to be established with the clinical veterinarian.
- 4.4.12. Prior to surgery, verify the depth of anesthesia by loss of the palpebral reflex, pedal withdrawal reflex, and jaw tone, heart rate and blood pressure.
- 4.5. Surgical Procedures, Monitoring, and Supportive Care:
 - 4.5.1. Maintain aseptic conditions during all survival procedures.
 - 4.5.2. Continuously monitor physiological parameters, e.g., heart rate and rhythm, blood pressure, respiratory rate and depth, oxygen saturation, temperature, capillary refill time (less than 2 seconds), end tidal CO₂.
 - 4.5.3. Document these parameters at least every 10 minutes.
 - 4.5.4. Maintain normal body temperature by the use of warm circulating water blankets, thermal pads, and/or warm IV fluids. Do not use electric heating pads as they are a less consistent, safe, and reliable source of heat.
 - 4.5.5. Administer IV fluids to maintain adequate hydration and blood pressure.
 - 4.5.6. Adjust the depth of anesthesia according to the monitored parameters (presence of reflexes, respiratory rate and breathing pattern, and heart rate).
 - 4.5.7. In the case of respiratory or cardiac arrest, stop anesthesia, administer oxygen, and begin resuscitation efforts immediately. Calculate the dosage of emergency drugs before the start of anesthesia.
 - 4.5.8. Use efficient surgical planning to decrease surgical time, tissue contamination, and tissue damage.
 - 4.5.9. Handle tissues gently.
 - 4.5.10. Use a scalpel blade or scissors to make the smallest possible incisions.
 - 4.5.11. Use appropriate suture technique:
 - 4.5.11.1. Use absorbable suture if the suture will be buried in tissue.
 - 4.5.11.2.

- 4.5.11.5. Use an alternative to skin sutures, such as a subcutaneous/intradermal closure technique, if skin sutures are not necessary. Skin sutures can cause an animal to chew or scratch at the incision site.

4.6. Postoperative Care:

- 4.6.1. Postoperative care begins with recovery from anesthesia, and may extend from days to weeks depending on post-surgical outcomes.
- 4.6.2. Place animals in a clean, quiet environment for anesthetic recovery.
- 4.6.3. Continuously observe the animal and monitor temperature, heart rate and respiratory rate until the animal can maintain a patent airway and sternal recumbency. Emergency airway equipment must be available in the anesthetic recovery area. Administer oxygen as needed.
- 4.6.4. Keep the animal warm and dry in order to prevent hypothermia. Care should be taken to not overheat or burn the animal. Over-the-counter heating pads are prone to burning animals and cannot be used for this reason. Examples of surgical thermoregulation devices include:
 - 4.6.4.1. Water-circulated heating pad
 - 4.6.4.2. Air circulating heating blanket
 - 4.6.4.3. Surgical thermal barrier

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DATE	NEW VERSION
2015.09.10	4.2.10 The use of antibiotics prophylactically is to be established with the clinical veterinarian.
2017.08.31	4.2.8.3.Perform three scrubs with an antiseptic soap solution (e.g. 2% chlorhexidine solution or povidone-iodine solution) a non-soap solution (e.g. alcohol, diluted non-soap antiseptic or sterile water) and three alternating rinses with a non-soap solution (e.g. alcohol, diluted non-soap antiseptic or sterile water) an antiseptic soap solution (e.g. 2% chlorhexidine solution or povidoneiodine solution).
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