Institutional Animal Care and Use Committee (IACUC)

Multiple Survival Surgeries for Oocyte Harvesting in Xenopus Frogs Policy

I. General:

- While multiple major survival surgeries are discouraged as a rule, there might be certain circumstances where this is scientifically justifiable. One example is multiple survival surgeries for oocyte harvest in xenopus frogs, due to marked variability in the quality of the oocytes from animal to animal and between experiments in a research project.
- In addition, the procedure is considered no more invasive than laparoscopic procedures, in that it requires a small incision directly over the area containing the oocytes which can then be collected without displacement or disturbing other visceral organs. Also, the procedure is rapid and the animals quickly return to normal feeding and activity.

II. Requirements:

- The protocol has to clarify that multiple survival surgeries are required to obtain large quantities of oocytes in the early stages, I-VI, and that there are not suitable alternatives (literature review is required). In addition, scientific justification for the need to performing multiple survival surgeries on each frog to collect oocytes is required.
- Up to six surgeries can be allowed on one animal.
  - Surgeries have to be performed on alternating sides, with the sixth surgery being a terminal procedure.
  - A minimum of one month interval between surgeries is required.
- The protocol has to contain the method used to identify animals, e.g. tattooing and tank rotation, to ensure adequate time has elapsed between surgeries.

III. Procedure:

A. Aseptic Surgery Technique:

- Aseptic technique must be used to reduce microbial contamination to its lowest possible practical level. In keeping with this mandate, and in consideration of the species, the following is deemed acceptable aseptic technique:
  - Use of sterile surgical instruments and gloves.
o Avoid disrupting the protective skin mucus by attempting to clean the surgery site - surgical prep of the skin is not permitted.
o Use of clean, well rinsed, container for inducing anesthesia.
o Use of freshly prepared and buffered anesthetic solution
o Use of sterile suture to close the coelomic cavity. Typically a dissolvable suture,
e.g., Vicryl™, which will not require removal after skin healing is used.

B. **Anesthesia:**
   • Use a general anesthesia, e.g., Tricaine (MS-222) is required. Note: chilling the animal to immobilize during induction of anesthesia is not permitted.
   • During anesthesia and recovery, ensure that the nares are not submerged in liquid and keep the skin moist.

C. **Post-operative Care:**
   • Singly housing the animals and monitoring the wound healing within 24-48 hours post surgery is required. Note: animals must be returned to the housing room within 12 hours of surgery.
   • Remove skin sutures and wound clips, if non-absorbable, 2-3 weeks after surgery.
   • Maintain records to ensure that proper animal care is occurring. Record keeping should include the number of surgeries per animal and a description of post-operative care.

D. **Euthanasia:**
   • Acceptable methods of euthanasia include anesthesia overdose or anesthesia followed by decapitation.

References

- Silverman, Jerald. Justifying Multiple Survival Surgeries. Lab Animal (39) #7 July 2010 201- 203