

Jerald Silverman, DVM, Column Coordinator

Quick action for an injured mouse

People who work with male BALB/c mice know that these animals are prone to fighting. That is exactly what happened in Dr. Holly Stein's aggression study—but it was supposed to happen. Stein had been studying aggression and its prevention in mice for many years and was competent in allowing little more than skin wounds to occur. Today, however, two mice quickly began fighting, and before they could be separated, one of them suffered a significant wound to his eye. Although Stein had treated superficial eye wounds in the past as part of her IACUC-approved protocol, this time the eye was badly proptosed (displaced forward) from the orbit and Stein didn't know what to do. It was a Saturday afternoon. The school's veterinarian could be called in to treat the animal, but Stein was very upset and didn't want the animal to suffer or to euthanize a valuable study animal. Therefore, she anesthetized the mouse with ketamine and xylazine and snipped the few tissues that

were still keeping the eye attached to the mouse's body. She applied direct pressure to the orbit area for about a minute to stop the small amount of blood loss, applied an antibiotic ointment over the ocular skin, breathed deeply, then sat down and cried. Stein really cared about her animals, and she was devastated about what had just occurred.

After a few minutes she composed herself, called the veterinarian and told her what had happened. The veterinarian reassured Stein that she very likely would have given the same treatment to the mouse had she been there but also told Stein that the condition was not life-threatening and that she should have contacted her, the veterinarian, before doing anything.

On Monday, when the IACUC was apprised of the incident, the chairman reviewed Stein's protocol and saw that the anesthetic drugs she had used were approved but for a different purpose. The ocular antibiotic ointment was approved for

minor wounds to the eye. There were two key questions before the IACUC: whether Stein, an experienced researcher, should have known that a proptosed eye was serious but did not represent an immediate life-threatening condition, and whether Stein carried out a procedure without IACUC approval.

The committee struggled with these questions. If Stein truly believed there was an emergency that required immediate intervention, perhaps she should be praised rather than castigated for acting. Alternatively, if she acted recklessly, the IACUC would probably take a very different position. But, as one member commented, it seemed to him that she panicked and did what she truly believed was in the best interest of the animal, even if it was the wrong thing to do. He said, "Do we punish the Good Samaritan?"

How would you proceed with the issues facing this IACUC?

RESPONSE

Compassion is in the eye of the beholder

David M. Moore, DVM, DACLAM,
Stephanie Trout & Louisa Gay

To cut, or not to cut? The answer to the question may lie in local policy rather than in federal regulations. Stein's protocol allowed for use of anesthetics, but the scenario did not indicate whether they would be used for surgery or a different procedure. Stein was an experienced researcher, but did she have prior training, experience or expertise in rodent surgery? The *Guide for the Care and Use of Laboratory Animals*¹ recommends that in emergency situations, the appropriate course of action requires veterinary medical judgment but also states that some aspects of

the veterinary care program can be carried out by personnel other than a veterinarian. Does Stein's IACUC have a policy in place that addresses clinical and surgical treatment of animals by non-veterinarians with or without initial veterinary consultation and direction?

Because the approved study involves evaluation of aggression, the protocol should have addressed animal welfare concerns, such as what would be done if an animal became injured. If the protocol did not address this issue, then the IACUC didn't do its job.

Should the IACUC throw the book at her? No. It might hit her in the eye, but more likely, doing so would only encourage her (and maybe her colleagues) to treat problems themselves without notifying the attending veterinarian (AV) or the IACUC.

Stein did, commendably, report the problem. She should be counseled in a

positive way, and the AV should work more closely with her to detail the importance of professional (veterinary) judgment on assessing emergency situations, appropriate timing and techniques for surgical correction of the problem, proper post-operative analgesia and follow-up assessments. If Stein is convinced that the AV is equally concerned about the well-being and welfare of her animals and is present and available to provide timely emergency care, she may be more likely to call the AV in the future to provide professional care for her animals.

1. Institute for Laboratory Animal Research. *Guide for the Care and Use of Laboratory Animals* (National Academies Press, Washington, DC, 2011).

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RESPONSE

Crossed the line

Rhonda S. Griess, BSc, ALAT & Kathy Ellenbolt, BSc, ALAT

Animal researchers must be objective in their actions and diligent in following the rules and mandates established by regulatory authorities. The purpose of an Animal Use Protocol is to put into place the exact procedures for a given study and to ensure that they comply with the established guidelines.

In this scenario, Stein crossed the line. As an experienced researcher, she should have known that this injury was not life-threatening and that any injury occurring during a study requires a call to the veterinarian before treatment. She should have also been fully aware that it is not acceptable to use drugs that are not approved for a study. Her experience as a researcher should not have allowed these mistakes to occur. We also wonder how valuable this research animal is with only one eye.

The word ‘panicked’ is key to this breach in protocol. To work outside the approved protocol is unacceptable, especially in this case, where Stein apparently responded emotionally instead of logically and systematically. It is stated in the scenario that she became very upset over the situation, even devastated. This is not a good emotional state to be in when making decisions or carrying out surgery. A few minutes after carrying out the unauthorized surgery, she pulled herself together and successfully contacted the veterinarian. If she had consulted the veterinarian first, then perhaps she could have carried out the same procedure, under clinical care, to assist her injured animal. This should have been her first response to an emergency rather than an afterthought.

Stein allowed her emotions to guide her response in a non-emergency situation and to cloud her professional judgment. Or is there another explanation? Is it possible that, working alone on a Saturday afternoon, she became distracted and didn’t observe the mice with enough diligence to stop the fighting before this injury occurred? Then, after the unfortunate injury, perhaps she realized the need to cover up her negligence

A word from USDA and OLAW

In response to the questions posed in this scenario, the United States Department of Agriculture, Animal and Plant Health Inspection Service, Animal Care (USDA/APHIS/AC) and the Office of Laboratory Animal Welfare (OLAW) offer the following clarification and guidance:

Although this scenario involves rodents, which are not USDA-covered species, it is important to consider how the USDA/APHIS/AC requirements would apply to a similar scenario involving USDA-covered species.

Section 2.33(b) of the Code of Federal Regulations on Attending Veterinarian and Veterinary Care¹ states, “Each research facility shall establish and maintain programs of adequate veterinary care that include...the use of appropriate methods to prevent, control, diagnose and treat diseases and injuries, and the availability of emergency, weekend and holiday care” and states that “a mechanism of direct and frequent communication is required so that timely and accurate information on problems of animal health, behavior, and well-being is conveyed to the attending veterinarian.”

In addition, the *Guide for the Care and Use of Laboratory Animals* requires that animals are cared for by qualified personnel every day and that emergency veterinary care is available and provided².

The research facility should have a mechanism in place for veterinary contact and care on weekends and holidays or in the event of an emergency. This information should be clearly conveyed to facility personnel and investigators to ensure that they are familiar with the appropriate personnel and procedures for handling veterinary emergencies.

1. Code of Federal Regulations, Title 9, Chapter 1, Subchapter A — Animal Welfare: Part 2 Regulations (§2.33b).
2. Institute for Laboratory Animal Research. *Guide for the Care and Use of Laboratory Animals* 46 (National Academies Press, Washington, DC, 1996).

Chester Gipson, DVM
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and used an elaborate emotional story to try to sway the IACUC into believing that she was doing a good deed.

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RESPONSE

Should no good deed go unpunished?

Randall J. Nelson, PhD

Stein took action to make a bad situation with aggressive mice better. She did this with the best intentions and with genuine concern for animals. Should the IACUC deal aggressively with her noncompliance? Or should this good deed go unpunished?

Stein anesthetized an injured animal, enucleated one eye and treated that animal appropriately. Only then did she contact the weekend call veterinarian. She had the expertise and approval to anesthetize mice and treat wounds, just not under these circumstances. After the fact, the veterinarian agreed in principle with the treatment. However, the injuries were not so severe that immediate treatment precluded veterinary consultation.

This is a question of timing. Had Stein contacted the veterinarian first, the situation would have been less problematic for the IACUC. The *Guide for the Care and Use of Laboratory Animals* reminds us that “[a] veterinarian or the veterinarian’s designee must be available to expeditiously assess the animal’s condition, treat the animal, investigate unexpected death, or advise on euthanasia”¹. Hindsight is 20/20, but if the veterinarian had been consulted before the mouse was treated, she could

have evaluated the severity of the situation and perhaps designated Stein to act as her designee. Stein is an experienced investigator, has appropriate expertise and has approval to use the proper anesthetic drugs and do similar procedures. By acting before consulting, however, she carried out unapproved procedures.

The spirit of the law and animal welfare should temper IACUC actions. The IACUC shouldn't second-guess whether or not Stein appreciated that a proptosed eye is not immediately life-threatening. It also shouldn't overlook the fact that she carried out unapproved procedures. The committee should not hesitate to report this noncompliance appropriately. Whether Stein acted recklessly or with great concern is interesting but not germane.

The IACUC should look at adherence to regulation and should evaluate outcome when determining necessary mitigation. The IACUC should consider that Stein improved animal health and welfare in a potentially emergency situation.

It would be best practice for the IACUC to convene as soon as possible² to discuss Stein's actions. She carried out unapproved procedures but bettered the welfare of an injured animal. The committee should remind her of both of these things and perhaps offer her supplemental training. The IACUC should report this noncompliance appropriately (e.g., to OLAW if the study is PHS-funded). PHS funds cannot be used to pay for unauthorized animal activities³. Good deeds should not go unpunished, but the punishment should fit the crime. The

animal was helped, but Stein would not be if the IACUC's actions were overly punitive.

1. Institute for Laboratory Animal Research. *Guide for the Care and Use of Laboratory Animals* 114 (National Academies Press, Washington, DC, 2011).
2. Public Health Service. *Policy on Humane Care and Use of Laboratory Animals* Section IV, B, 4: Functions of the Institutional Animal Care and Use Committee. (US Department of Health and Human Services, Washington, DC, 1986, amended 2002).
3. Office of Laboratory Animal Welfare. *Guidance on Confirming Appropriate Charges to NIH Awards during Periods of Non-compliance for Activities Involving Animals*. Notice NOT-OD-10-081. (National Institutes of Health, Washington, DC, 15 April 2010). <<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-10-081.html>>

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