should be collected from the uropatagium using a 100-μl heparinized hematocrit tube (Fisher Scientific, Waltham, MA; Fig. 5).

After puncturing the vessel, the handler should apply pressure to the vessel with a single finger proximal to the puncture site. To encourage blood flow, the handler may gently flex and stretch the leg or massage the vessel. If this does not enable collection of a sufficient volume of blood, the handler may apply gentle pressure directly over the vessel near the tail and puncture the vein a second time distal to the initial site. Once the appropriate volume of blood is collected, the handler should apply direct pressure or, if needed, silver nitrate or styptic powder to stop the bleeding, and the anesthesiologist should move the Y connector of the anesthesia machine away from the bat’s face.

**Recovery**

The bat should remain on the warmed surface until it begins to move its wings and should then be gently restrained until it responds to restraint by attempting to move away from the handler or by vocalizing. The bat should then be given subcutaneous fluids (LRS) of a volume equal to that of the blood sample collected and should be offered mealworms. Each bat should then be placed in a protective enclosure (Live Monarch Foundation, Boca Raton, FL) for at least 5 min for monitoring to ensure that it is fully conscious and that hemostasis has occurred. It can then be returned to the hibernaculum. The hibernaculum temperature should be maintained at 10 °C for the next 24–48 hours to allow any hematomas to resolve and to ensure complete recovery from the blood collection and can then be returned to the torpor-inducing temperature.


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**RECRUITMENT**

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**Why GSK?**

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**TRANSGENIC UNIT MANAGER – LABORATORY ANIMAL SCIENCE STEVENAGE, UK**

In this role, you will be accountable for all aspects of the day to day operation of the GSK UK transgenic unit.

The delivery of transgenic breeding strategies and programmes is important to ensure effective and efficient delivery of studies for all customer groups. You will be expected to maintain knowledge of emerging technologies in transgenic science, awareness of the scientific literature in transgenic and laboratory animal science and have oversight and understanding of all GSK transgenic models bred internally and externally within the UK.

The successful applicant will exhibit:

- Effective communication skills, both written and oral
- The ability to liaise with R&D scientists worldwide on the ability of transgenic lines to influence the drug discovery and development process
- Active contribution as a member of programme teams and transgenic forums to provide advice to scientists on timelines associated with their breeding programmes

You will manage the supervisors and staff working within the unit, providing coaching and mentoring to the supervisors and the wider team within the transgenic unit. Ensuring health and safety is a priority, adherence to the legislation and a commitment to high standards. In addition you will work with other Unit Managers to ensure optimal use of resource across all units.

GSK is committed to high standards of humane care and treatment for our animals and compliance with regulations – ASPA, AALAC. The successful candidate will show strong focus on the care and welfare of laboratory animals, be able to initiate and drive welfare projects and act as an advocate for GSK’s values via a commitment to the external animal research community.

**The closing date for this position is 16th July 2014.**

If you would like to apply for this role, please visit www.gsk.com/careers and search for requisition number 97998.
Using farm techniques for agricultural species

Most people considered Dr. John Ballantine to be a seasoned swine veterinarian, set in his ways and not afraid to speak his mind. Some people called him crusty. Others weren't so kind. But one thing people did agree on: he knew pig medicine and surgery. So, it wasn't surprising that Conquer Pharmaceuticals hired Ballantine as the consulting swine veterinarian at its new midwestern research facility.

Ballantine was given copies of the Animal Welfare Act regulations and the Guide for the Care and Use of Laboratory Animals (the Guide), even though Conquer did not have an NIH Assurance. Much to the surprise of some people, he read pertinent sections of the guidelines and seemed to understand how research animal care can differ from farm animal care. All went well until Ballantine needed to castrate piglets for an IACUC-approved study. Rather than follow the IACUC protocol by providing a local anesthetic to the 2-week-old piglets before the castration procedure, Ballantine castrated them as he had done on farms: he used a scalpel blade to cut the scrotum and then pulled out the testicles. When the farm manager learned what had happened, he immediately notified the IACUC and asked Ballantine why he had not followed the protocol.

"What protocol?" said Ballantine. "Was that from a meeting I missed? "You told me the piglets had to be castrated when they were 2 weeks old, so I castrated them. You didn't tell me they were part of some study. If you wanted me to use an anesthetic you should have said so. Anyway, that Guide book you gave me says that castration is a routine minor surgical procedure that usually doesn't cause much pain and I agree with that. So why would I inject into the scrotum and cause more pain to the animal?"

The IACUC met to discuss the incident and subsequently notified the USDA, although the vote to do so was not unanimous. One member, who raised pigs on his own farm, referenced the position statement of the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC), which states that the IACUC, the principal investigator and the veterinarian should use a performance approach to determine whether agricultural or research standards should apply to a study (http://www. aaalac.org/accreditation/positionstatements.cfm#ag). This member believed that Ballantine had used the correct standard. The IACUC was aware of the AAALAC position statement and the passage from the Guide that Ballantine had quoted, but most committee members interpreted these statements differently, understanding that the approved protocol had not been followed and that this was a reportable incident.

How do you interpret the AAALAC and Guide statements? Do you think Ballantine's typical farm method of castration was humane?


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RESPONSE

Lack of training

Margo Barton, CPIA & Lisa D. Snider, CPIA

The IACUC at Conquer's midwestern research facility followed due diligence by discussing an incident during a convened meeting of the IACUC, further considering published statements relating to the procedure. It is unclear whether the committee discussed the humaneness of castration of 2-week-old piglets without administering a local anesthetic or whether such a discussion contributed to the committee's determination that the incident was a reportable issue of non-compliance.

The Guide for the Care and Use of Agricultural Animals in Research and Teaching states, "Castration causes clear signs of pain and discomfort for pigs... therefore, castration should be performed as early as possible and preferably between 1 and 14 days of age. After 14 days of age, local anesthetic or a combination of local and general anesthetic should be administered." The Guide for the Care and Use of Laboratory Animals states, "Minor survival surgery... causes little or no physical impairment; this category includes... routine agricultural animal procedures such as castration..."

Do these reference materials support use of the procedure followed by Ballantine? Yes. But Ballantine should have carried out the castration procedure as approved by the IACUC. The position statement of the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC; http://www. aaalac.org/accreditation/positionstatements.cfm#ag) states that a performance approach should be used to determine whether agricultural or research standards should apply to a study, but this determination must be made in advance, not at the time of the procedure, and cannot override the protocol approved by the IACUC.

AAALAC charges the IACUC with determining appropriate standards for agricultural animals on the basis of the study requirements and the proposed species and with documenting the basis for this determination. In this case, the protocol could have implemented standard production practice for castration of the 2-week-old piglets so as not to add to their stress by injecting a local anesthetic, but it was not written this way.

It is noted in the scenario that Ballantine seemed to understand how research animal procedures can differ from farm animal procedures. He should have asked the farm manager what the piglets were to be used for before castrating them. He then should have contacted the IACUC office and asked...
to read the approved protocol. At that point, he would have realized that the protocol required provision of a local anesthetic.

Ballantine carried out a procedure that was not in compliance with the approved protocol. It is appropriate to report this non-compliance to the USDA if that is Conquer's standard operating procedure or if the piglets were used in a biomedical study that was suspended by the IACUC as a result of the non-compliance.

A breakdown or lack of communications can be blamed for this incident, but the real problem seems to be the training program for new IACUC members. Simply providing copies of the Animal Welfare Act regulations and the Guide for the Care and Use of Laboratory Animals is not the best practice nor does it adhere to federal regulations. The training program for IACUC members should be reviewed and updated to include institutional policies and standard operating procedures as well as federal requirements and other applicable guidelines.

1. Guide for the Care and Use of Agricultural Animals in Research and Teaching 3rd edn. (Federation of Animal Science Societies, Champaign, IL, 2010).

Barton is an IACUC Project Manager at Indiana University, Indianapolis, IN, and Snider is the IACUC Administrator at Purdue University, West Lafayette, IN.

Making the IACUC squeal
Lon V. Kendall, DVM, PhD, ACLAM, Wendy Tuttle, DVM & Ryan Curtis, DVM

It's clear in this scenario that Ballantine did not fully understand the Animal Welfare Act regulations (AWARs) or the Guide for the Care and Use of Laboratory Animals (the Guide) when it came to the role of the IACUC and its review and approval of animal care and use. The AWARs require IACUC approval for the care and use of animals in ongoing activities. This includes review to ensure that procedures minimize discomfort, distress and pain and that procedures that cause more than momentary pain and distress be performed with appropriate analgesics or anesthetics. In this case, appropriate IACUC review had occurred, but Ballantine failed to recognize the importance of following the procedures as outlined in the protocol, leading to a protocol deviation. Failure to follow the procedure approved by the IACUC is a protocol deviation regardless of whether the non-approved method can be supported by other documentation.

What is reportable to USDA? According to the AWARs, there are very few instances in which the USDA must be notified. To our knowledge this includes change in the name, address, management or control of business ownership; IACUC suspension of a protocol; failure to correct a significant deficiency as planned during program review; the annual report; and incidents resulting in injury to cetaceans or humans in interactive programs. Protocol deviations described in this scenario, which are not pervasive in the program, do not represent a significant deficiency in the program that would require reporting to the USDA.

What is reportable to the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC)? AAALAC expects prompt reporting of unexpected animal deaths, natural disasters, animal rights activities, inappropriate euthanasia methods, allegation of animal welfare concerns, lack of veterinary care,
changes in contact, changes in unit size and OLAW/USDA investigations (http://www.aalac.org/accreditation/faq_landing.cfm#H2). Even if the institution is accredited by AAALAC, protocol deviations such as this would be reportable to AAALAC only if it is considered to constitute a lack of veterinary care.

The performance standards referred to in the Guide and the AAALAC position statement (http://www.aalac.org/accreditation/positionstatements.cfm#ag) refer to housing and care, interpreted to mean husbandry. When the protocol is being reviewed, these and other standards that apply to practices such as piglet castrations could be discussed to determine whether the proposed procedures are appropriate, but the use of performance standards does not allow deviation from the protocol once it is approved.

Regarding the use of agricultural animals in biomedical research, the Guide for the Care and Use of Agricultural Animals in Research and Teaching (the Ag Guide) is frequently used as reference material for both USDA and AAALAC. The Ag Guide states, “regardless of the teaching or research objective, the Ag Guide should serve as a primary reference document for the needs and requirements of agriculture animals.” While the Guide and the Ag Guide suggest that castration is not a major surgery, castration would constitute major surgical surgery according to the AWARs definition as it permanently impairs a physiological function. While there is evidence that castration causes signs of pain and discomfort in pigs, which can be reduced with anesthetics, results are inconsistent across experiments. The Ag Guide recommends that castration be done as early as possible to minimize the stress and recommends anesthesia for piglets more than 14 days old.

Whether or not castration without anesthesia is inhumane is a discussion for each IACUC. Conquer’s IACUC did a good job in the protocol review and approval process to require administration of a local anesthetic prior to castration. The protocol could perhaps have been further improved by including mild sedation to reduce the stress to the piglets prior to anesthetic administration and post-operative pain relief with an appropriate analgesic.

3. Guide for the Care and Use of Agricultural Animals in Research and Teaching 3rd edn. (Federation of Animal Science Societies, Champaign, IL, 2010).

Kendall is the Director of Laboratory Animal Resources and Turtle and Curtis are residents in the Comparative Medicine Training Program at Colorado State University, Fort Collins, CO.

RESPONSE

Amend or follow

Alan F. Humphreys, DVM

This scenario raises two main questions: was Ballantine’s method of castration humane, and why was Ballantine, as a swine consultant, not more involved in the development of the protocol?

There are several points to consider in answering the first question. First, the position statement of the Association for Assessment and Accreditation of Laboratory Animal Care International (http://www.aalac.org/accreditation/positionstatements.cfm#ag) that the IACUC member quoted refers to husbandry and housing standards, not to veterinary procedures and is not relevant in determining how castration should be done by the veterinarian. Second, Ballantine alluded to the Guide for the Care and Use of Laboratory Animals (the Guide) as stating that castration “usually doesn’t cause much pain” because it is a minor procedure. However, the Guide does not specifically say that castration does not cause pain but rather states that animals do not show significant signs of post-operative pain with minor procedures like castrations.

Furthermore, the Guide for the Care and Use of Agricultural Animals in Research and Teaching indicates that castration is considered to cause clear signs of pain and discomfort in pigs that can result in behavior changes. Finally, Ballantine would have been willing to provide additional anesthesia, as he himself stated, “If you wanted me to use an anesthetic you should have said so.” His statements tell us more about what he is used to doing rather than what is humane. So, was his method humane? Administration of local anesthetics can reduce both behavioral and physiological responses of piglets to castration. If a refinement to an existing method is able to reduce pain and distress, then the old method would not be considered humane. Proper justification would be needed in order for the IACUC to approve a study in which piglets are castrated without administration of a local anesthetic. Such justification should ideally be determined in collaboration with Ballantine.

That brings up the second question of why Ballantine was not involved in this veterinary decision in the first place. Because Conquer Pharmaceuticals is not an NIH Assured institution, its IACUC needs only three members, as defined by the Animal Welfare Act regulations, one of them being a veterinarian trained in laboratory animal medicine. Perhaps a different veterinarian was in charge of developing this protocol, explaining why Ballantine was not legally required to be a part of the process.

The Guide makes it very clear that all personnel, including consulting veterinarians, must have adequate training in laboratory animal science, which should include information regarding IACUC protocol review. It is the IACUC’s responsibility to ensure that Ballantine understands what is expected to take place in an approved procedure. His failure to follow the protocol constitutes an oversight on the part of the IACUC as well as on his part. Ballantine should have followed the protocol or requested an amendment.

2. Guide for the Care and Use of Agricultural Animals in Research and Teaching 3rd edn. (Federation of Animal Science Societies, Champaign, IL, 2010).

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