



October 11, 2023

Brent C. Morse, D.V.M.
Director
Division of Compliance Oversight
Office of Laboratory Animal Welfare
National Institutes of Health

Via e-mail: MorseB@mail.nih.gov

Dear Dr. Morse:

I'm writing on behalf of People for the Ethical Treatment of Animals—PETA entities have more than 9 million members and supporters globally—to request that your office investigate possible noncompliance with the Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS Policy) and the *Guide for the Care and Use of Laboratory Animals* (the *Guide*) related to the treatment of animals at Princeton University (Animal Welfare Assurance ID D16-00273).

According to a March 23, 2023, U.S. Department of Agriculture (USDA) animal welfare complaint for Princeton (attached), a 2-centimeter piece of a ceramic screw was left inside a rhesus macaque's head for eight months. On June 13, 2019, the monkey self-explanted his cranial implant. He was then taken to surgery. The complaint doesn't specify whether the surgery was to clean the area where the monkey had removed the implant or to replace the implant. Eight months later, in February 2020, the veterinary staff performed exploratory surgery on the monkey after a course of antibiotics and a structural MRI that showed an abscess. During the surgery, the veterinary staff discovered the 2-centimeter piece of screw in the temporalis muscle. He then died of complications related to the surgery.

Additionally, this incident isn't included in the Princeton case reports that we have received from your office via Freedom of Information Act requests, indicating that the Institutional Animal Care and Use Committee (IACUC) and the institutional official (IO) didn't send a report to the Office of Laboratory Animal Welfare (OLAW).

The issues raised in the USDA's complaint for Princeton—failure of veterinary staff to provide appropriate care during and after surgery, failure of the IACUC and attending veterinarian (AV) to ensure and monitor the administration of appropriate veterinary care, and failure of the IACUC and IO to send a report to OLAW—also indicate noncompliance with PHS Policy and the *Guide*. These issues include the following:

PEOPLE FOR
THE ETHICAL
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- PETA Asia
- PETA India
- PETA France
- PETA Australia
- PETA Germany
- PETA Switzerland
- PETA Netherlands
- PETA Foundation (U.K.)

1. Failure of veterinary staff to provide appropriate care during and after surgery

The *Guide* states, “Successful surgical outcomes require appropriate attention to presurgical planning, personnel training, anesthesia, aseptic and surgical technique, assessment of animal well-being, appropriate use of analgesics, and animal physiologic status during all phases of a protocol involving surgery and postoperative care” (p. 115). Additionally, care after surgery should include “behavioral signs of postoperative pain [and] monitoring for postsurgical infections” (p. 120). Furthermore, “[s]urgical outcomes should be continually and thoroughly assessed to ensure that appropriate procedures are followed and timely corrective changes are instituted” (p. 115) and “[a]ll animals should be observed for signs of illness, injury, or abnormal behavior by a person trained to recognize such signs. As a rule, such observation should occur at least daily, but more frequent observations may be required, such as during postoperative recovery” (p. 112).

The *Guide* also provides that the “investigator and veterinarian share responsibility for ensuring that postsurgical care is appropriate” (p. 116). Furthermore, “[t]o be effective in providing clinical care, the veterinarian should be familiar with the species and various uses of animals in the institutional research, teaching, testing, or production programs and have access to medical and experimental treatment records” (p. 114).

At Princeton, the veterinary staff didn’t take the necessary steps to have a successful surgical outcome or provide appropriate postsurgical care in light of the fact that they left a 2-centimeter piece of a ceramic screw inside the monkey’s head during the surgery—and that eight months had passed before they undertook the actions needed to find and remove the piece of screw.

This timeline and the presence of an abscess by the time the screw was removed indicates repeated failures to appropriately monitor and care for the monkey. Common symptoms associated with brain abscesses include persistent headaches, fever, altered mental status, nausea and vomiting, and hemiplegia (weakness on one side of the body).¹ Seizures, visual difficulties, poor balance, and cognitive problems are also common symptoms associated with brain abscesses.² In nonhuman primates, brain abscesses have been associated with decreased appetite,

¹Mathisen GE, Johnson JP. Brain abscess. *Clin. Infect. Dis.* 1997;25(4):763–781; Carpenter J, Stapleton S, Holliman R. Retrospective analysis of 49 cases of brain abscess and review of the literature. *Eur. J. Clin. Microbiol. Infect. Dis.* 2007;26(1):1–11; Felsenstein S, Williams B, Shingadia D, et al. Clinical and microbiologic features guiding treatment recommendations for brain abscesses in children. *Pediatr. Infect. Dis. J.* 2013;32(2):129–135; Kao PT, Tseng HK, Liu CP, et al. Brain abscess: clinical analysis of 53 cases. *J. Microbiol. Immunol. Infect.* 2003;36(2):129–136; Huang J, Wu H, Huang H, et al. Clinical characteristics and outcome of primary brain abscess: a retrospective analysis. *BMC Infect. Dis.* 2021;21(1):1245; Su J, Hu B, Zhang Y, Li Y. Clinical and radiological characteristics of brain abscess due to different organisms in hospitalized patients: A 6-year retrospective study from China. *Heliyon.* 2023;9(5):e16003; Kanu OO, Ojo O, Esezobor C, et al. Pediatric brain abscess—etiology, management challenges and outcome in Lagos Nigeria. *Surg. Neurol. Int.* 2021;12:592.

²Corsini Campioli C, Castillo Almeida NE, O’Horo JC, et al. Bacterial brain abscess: an outline for diagnosis and management. *Am. J. Med.* 2021;134(10):1210–1217.e2; Moorthy RK, Rajshekhar V. Management of brain abscess: an overview. *Neurosurg. Focus.* 2008;24(6):E3; Wu S, Wei Y, Yu X, et al. Retrospective analysis of brain abscess in 183 patients: a 10-year survey. *Medicine (Baltimore).* 2019;98(46):e17670.

fever, vomiting, lethargy, ataxia, disorientation, seizures, and visual impairments (including blindness).³

Furthermore, this failure led to the monkey having to endure the conditions and procedures of going through a subsequent surgery—which resulted in his death—that never would have been needed if veterinary care had been appropriate.

2. Failure of the IACUC and AV to ensure and monitor the administration of appropriate veterinary care

The *Guide* instructs that an institution’s animal care and use program must include adequate policies, procedures, and practices “to achieve the humane care and use of animals in the laboratory and throughout the institution” (p. 6). Additionally, the institution must maintain an environment in which the IACUC can “function successfully to carry out its responsibilities” and the institution is responsible for ensuring that “IACUC members are provided with training opportunities to understand their work and role” (pp. 6 and 17). Furthermore, the IACUC is responsible for “assessment and oversight” of the institution and should have “sufficient authority and resources (e.g., staff, training, computers, and related equipment) to fulfill this responsibility” (pp. 14–15).

The IACUC, along with the AV, is “responsible for determining that personnel performing surgical procedures are appropriately qualified and trained in the procedures” (p. 116). Additionally, the *Guide* outlines that the AV “is responsible for the health and well-being of all laboratory animals used at the institution. The institution must provide the AV with sufficient authority, including access to all animals, and resources to manage the program of veterinary care” (p. 14).

Under this responsibility of the IACUC and AV, the *Guide* addresses the importance of the proper training for staff involved in animal care and surgeries. It states, “Personnel caring for animals should be appropriately trained ... and the institution should provide for formal and/or on-the-job training to facilitate effective implementation of the Program and the humane care and use of animals. Staff should receive training and/or have the experience to complete the tasks for which they are responsible” (p. 16). Additionally, “[t]he institution should provide appropriate education and training to members of research teams—including principal investigators, study directors, research technicians, postdoctoral fellows, students, and visiting scientists—to ensure that they have the necessary knowledge and expertise for the specific animal procedures proposed and the species used” (pp. 16–17). In regard to surgeries, the *Guide* specifically states, “Researchers conducting surgical procedures must have appropriate training to ensure that good surgical technique is practiced—that is, asepsis, gentle tissue handling, minimal dissection of tissue, appropriate use of instruments, effective hemostasis, and correct use of suture materials and patterns” (p. 115).

³Villano JS, Ogden B, Goh A, et al. Cerebellar abscess in a cynomolgus macaque (*Macaca fascicularis*). *J. Med. Primatol.* 2008;37 Suppl. 1:82–87. doi:10.1111/j.1600-0684.2007.00254.x; Ferrecchia CE, Ducore RM, Colgin LM, Lewis AD. Spontaneous nocardial brain abscess in a juvenile rhesus macaque (*Macaca mulatta*). *J. Med. Primatol.* 2015;44(1):45–48; Leblanc M, Berry K, McCort H, Reuter JD. Brain abscess in a rhesus macaque (*Macaca mulatta*) with a cephalic implant. *Comp. Med.* 2013;63(4):367–372; Doane CJ, Zimmerman PE, Putnam PT, et al. Silicon foreign body in the cerebrum of a rhesus macaque (*Macaca mulatta*). *Comp. Med.* 2018;68(2):182–186.

The IACUC also has the responsibility—under federal law, regulations, and policies—to continually monitor the use and care of animals (p. 33). Post-approval monitoring includes “observation of animals by animal care, veterinary, and IACUC staff and members” (p. 33).

The failure of the IACUC and AV at Princeton to ensure and monitor that veterinary staff provided appropriate veterinary care—which resulted in a 2-centimeter piece of screw being left in the monkey’s head during surgery and for the following eight months, the development of an abscess, and a subsequent surgery that should not have been needed and resulted in his death—illustrates that the institution didn’t maintain an environment in which the IACUC could successfully carry out its responsibilities and that the IACUC and AV failed in their oversight of animal care.

3. Failure of the IACUC and IO to send a report to OLAW

The *Guide* makes clear that “the institution must develop methods for reporting and investigating animal welfare concerns, and employees should be aware of the importance of and mechanisms for reporting animal welfare concerns. In the United States, responsibility for review and investigation of these concerns rests with the IO and the IACUC” (p. 23). Additionally, OLAW instructs, “The PHS Policy, section IV.F.3., requires that: ‘The IACUC, through the Institutional Official, shall promptly provide OLAW with a full explanation of the circumstances and actions taken with respect to’” the following:

- Any serious or continuing noncompliance with this policy
- Any serious deviation from the provisions of the *Guide*
- Any suspension of an activity by the IACUC⁴

This incident—which involved serious deviation from multiple provisions of the *Guide*—should have been reviewed and investigated by Princeton’s IACUC and IO, and then the IO should have sent a report to OLAW. OLAW records illustrate that the IO didn’t provide OLAW with an explanation of the circumstances and actions taken in regard to the 2-centimeter piece of screw left in the monkey’s head for eight months, the development of an abscess, and the subsequent surgery required.

In conclusion, we urge you to investigate the concerns summarized in this letter and to take swift and decisive action against Princeton University. Thank you for your time and consideration.

Sincerely,



Amanda Schemkes, J.D., M.S.
Laboratory Oversight Specialist
Laboratory Investigations Department
PETA

⁴Office of Laboratory Animal Welfare. (2023, June). *Reporting Noncompliance*. National Institutes of Health, Office of Laboratory Animal Welfare. <https://olaw.nih.gov/guidance/reporting-noncompliance.htm>.



USDA-APHIS-Animal Care



ANIMAL WELFARE COMPLAINT		
Complaint No. AC23-0405	Date Entered: March 23, 2023	Processed By: Samantha Jones
Referred To: Tonya Hadjis		Reply Due: May 7, 2023
Facility or Person Complaint Filed Against		
Name: PRINCETON UNIVERSITY	Customer No.: 176	License No.:
Address: P O BOX 36		Email Address:
City: PRINCETON	State: NJ	Phone No.:
Complainant Information		
Name: Anonymous		Organization:
Address:		Email Address:
City:	State:	Phone No.:
How was the Complaint received? Email		
Details of Complaint: See attached		
Results: A focused inspection was conducted by Jessica Gowins and Gloria McFadden on April 20, 2023. The complainant alleged that the vets knowingly left hardware in a NHP during an explant surgery. This resulted in a foreign body abscess reaction that was treated for more than 8 months. The NPH underwent exploratory surgery to remove the hardware and died of complications related to the surgery and anesthesia. USDA officials reviewed surgical and clinical records for the non-human primates (NHPs) at the facility. It was determined that there was a rhesus macaque that self-explanted his cranial implant on 06/13/2019. The macaque was immediately reviewed by veterinary staff and then taken to surgery. According to surgical records pre-operative medications included: sedatives, anti-emetics, and pain medications. Anesthesia was performed by the LAR veterinary technician anesthesiologist. The anesthesia logs document was complete and the parameters in the protocol were monitored. The veterinary staff performed x-rays and aerobic and anaerobic cultures of the explant site after surgery. According to records, a treatment plan was established by the LAR veterinary staff and followed by the laboratory staff and veterinary technicians. Records indicated that explant site was monitored daily, and any sign of infection was reported to the veterinarians. Cultures were performed and treatment plans, which included antibiotics, would be changed according to the results. Cleanings of the explant site were documented as well as any surgical interventions. In February 2020, the LAR vets decided to perform an exploratory surgery after a course of antibiotics and a structural MRI showed an abscess. A 2cm piece of ceramic screw was found and removed from the temporalis muscle. A treatment plan was established by the LAR veterinarians and followed by the clinical veterinarians and veterinary technicians.		



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The complainant alleged that the vets failed to adequately monitor the depth of anesthesia as recommended by an outside anesthesia expert and the IACUC. According to the complainant the vets failed to identify prolonged and severe hypotension during anesthesia. According to the IACUC approved protocols, anesthesia is performed by the LAR veterinary trained technicians. USDA officials reviewed the anesthesia logs of nonhuman primates that had cranial implant or explant surgeries at the facility. The records were complete and captured the monitoring parameters as defined in the protocol. Records reviewed did not show prolonged and severe hypotension during anesthesia. The complainant alleged that the vets failed to remain current with established veterinary practices including. They did not perform routine bloodwork and urinalysis pre-operatively as described in their SOPs. USDA officials reviewed medical records of non-human primates that underwent surgery. According to the IACUC approved protocols and SOPs, the LAR veterinarian must pre-approve the surgical procedure. A physical exam is performed 14 days before surgery. A diagnostic work-up that includes clinical pathology and urinalysis were performed. The medical records reviewed matched the requirements in the SOPs and protocols.

The complainant alleged that the veterinarians failed to remain current on the pre-operative use of analgesics. According to the complainant the vets used meloxicam that predisposed a NPH to acute renal failure. Meloxicam is approved for use in the IACUC approved protocol.

The complaint alleged that the veterinarians failed proper monitoring and identification of an appropriate surgical plan of anesthesia. According to the complainant the veterinarian failed to monitor blood pressure, respiratory function and blood gasses as recommended by the outside anesthesia expert and the IACUC for long surgical procedures. USDA officials reviewed the anesthesia logs of nonhuman primates that had cranial implant or explant surgeries at the facility. The records were complete and captured the monitoring parameters as defined in the protocol. The anesthesia logs document was complete and the monitoring parameters of were captured as defined in the protocol.

The complainant alleged that the vets failed to fully disclose many of these issues (severe and prolong hypotension and other lab results) to the pathologist at the time of tissue submission. This omission did not allow the pathologist to properly account for factors in determining cause of death. USDA official reviewed the necropsy reports of non-human primates at the facility. Each report had a history of the animal that matched the medical record of the non-human primate. IACUC approved tissues or organs that were requested by the lab were identified by the veterinary staff to the pathologist.

According to the complainant an outside panel was brought in by the University to review the NHP research program which concluded that the veterinarians had not kept current with the advanced neurosurgical models in use at Princeton University. According to the IACUC representative, the IACUC contacted three outside veterinarians after the IACUC investigation into the model. After the investigation, the University decided to hire a non-human primate veterinarian who is solely responsible for the animals.

The complainant alleged the veterinarians allowed a solution that was not a sterilant to be used to sterilize electrodes that are placed into the brain during experimentation. According to records and laboratory staff, electrodes were sanitized in accordance with the IACUC approved protocol.

The complainant alleged that the veterinarians failed to treat cylinder infections in a number of cases. According to medical records any signs of infection was documented, reported, and treated by the veterinary staff. Cultures were taken and treatment plans were adjusted depending on the results. Animal Care will continue to inspect this facility to ensure that past non-compliances are corrected and that AWA-regulated animals are protected to the fullest extent of Federal law.

Application Kit Provided:

Yes: No:

Inspector:
JESSICA GOWINS

Date:
April 27, 2023



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Reviewed By: Jeffrey Shepherd	Date: May 3, 2023
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