NON-VIOLENCE IN SURGICAL TRAINING

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The following is to stimulate thought about the dilemma of developing the psychomotor skills necessary to do surgery without resorting to 'practice' nonhuman animals in veterinary medicine. It is not intended to be a precise method of how to develop these skills, rather it is intended to argue that it is possible to achieve these skills without killing healthy nonhuman animals and to urge those facing this dilemma to voice their opposition and demand they be allowed to work towards a solution (alternative).

It must be understood at the outset that the surgical training veterinary medical students currently receive prior to obtaining their degree does not make them surgeons and, perhaps, we should not even teach this discipline to all students.[15] At best, for the average student, it may increase their confidence as it initiates them to the complexities of surgery. It has the potential, however, of reducing the student's confidence because of the confusion and frustration the students may experience during the very limited exposure they receive during school. Contrariwise, it may inspire overconfidence making the student a serious liability to patients and clients upon graduation, until experience improves the new graduate's skills.

Although these problems will not be overcome simply by instituting alternatives, certain alternatives such as inanimate objects may allow for increased exposure to basic skills which are fundamental to more complex procedures.[2,4,5,7,12,14] Because these materials are not associated with the logistical problems live nonhuman animal use entails, they can be used repeatedly and at the student's convenience. Increased experience with knot tying boards and suturing of foam rubber models cannot help but improve proficiency thereby making any subsequent live nonhuman animal experience that much more rewarding.

As an example, at the Ohio State University College of Veterinary Medicine, Dr. Dan Smeak taught students how to ligate blood vessels by using foam pads and red string to simulate incisions. He and his coworkers found that students who practiced on these inanimate models did better when faced with a real surgery than students who had learned on the animals themselves.[21,22] Others have also developed models that have been effective in teaching hemostasis.[8]

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This paper is part of a series on exploitation of nonhuman beings by human beings. See the first paper, entitled 'Serious moral concern is not species-limited,' for arguments on the moral value of nonhuman animals.

Whereas one must at some point use live nonhuman animals to improve the skills necessary to do surgery, it does not follow that one must purposefully kill these animals in the process. In this respect the typical manner in which surgical skills are taught to veterinary medical students in this country is ethically indefensible. Nonhuman animals taken from pounds or purchased from dealers or breeders are used and killed like so many disposable commodities. This is in stark contrast to the situation in human medicine in which people aspiring to become physicians do not kill humans (nor, as is increasingly becoming the case, nonhuman beings) in the name of education.

The killing of nonhuman animals in veterinary medical education continues, unfortunately, out of convenience and habit, not because it is pedagogically necessary. There are several alternatives to the killing of healthy nonhuman animals in surgical training. Bear in mind that the British veterinary medical schools use cadavers and an apprentice system. The fact that many of their graduates compete successfully for residency and faculty positions in this country attests to our respect for their abilities.

In this country, however, when students have requested alternatives to the killing of healthy nonhuman animals, they usually have been met with ridicule and sarcasm. Their personal life-styles have been attacked as if absolute consistency is required in order to give credibility to a moral premise. Some faculty, apparently having only 'heard' the word alternative, have made sarcastic statements to the effect that one cannot learn surgery using vegetables. Some students have also been told that they should reconsider their career choice. This type of demeaning behavior towards these students not only is unprofessional, it also discourages a search for more humane methods of teaching.

Anything which involves a nonhuman animal or simulates certain anatomical features should be acceptable for the acquisition of basic skills such as suturing, some aspects of tissue handling, and the like. This can include knot tying boards or similar mechanical devices, especially when combined with visual aids such as photographs or videotapes for use during times when personal supervision is inconvenient. Models simulating various organs also have been shown to be feasible in preparing students for the real patient, even with more difficult surgery such as microneurosurgery or microvasular surgery.[1,4,5,7,8,9,10,12,17,19,20] A cadaver can provide the added dimension of learning surgical anatomy at the same time. There is evidence that students training on cadavers develop proficiency equal to those using live animals.[3,18,23]

It should be obvious that the source of the cadaver is important if one is proposing an alternative for moral or ethical reasons. It would not do to use cadavers from the pound, for example, if one is opposed to using these animals in the living state even though the procedures may be terminal (non-survival surgery) and, therefore, would result in the same outcome for the animal (death). As in human medicine, cadavers can be obtained by developing willed-body programs at the institutions and surrounding private veterinary practices.[16]

Sharpening of one's skills in hemostasis and critical tissue handling seems unlikely to be accomplished except on living animals. One way this can be done is by using a patient who needs the surgery, under strict supervision by a surgical instructor.[13] Initial involvement by the student may be limited to fairly simple steps such as skin incision or suturing. As her or his skills improve, the student gradually could increase the level of involvement until he or she was able to do some of the more common procedures in their entirety. This would mean more work on the part of those involved in the training of the students. In addition, it would be desirable, although not necessary, to increase the clinical part of the curriculum from the current average of less than a year to something longer in most situations in order to increase the students' exposure to clinical surgery. Any perceived 'disadvantages' to such a program should be viewed in the context that the program would help nonhuman animals who needed the surgery and would be ethically defensible and less desensitizing to the students.

An alternative could be the use of a patient dying of cancer or other hopeless situation. This is, in principle, no different from willing one's organs for use after death. After getting permission from the client, the patient would be deeply anesthetized. The various procedures would be done and then the patient would be euthanatized without allowing recovery from the anesthetic. It should be obvious that this is no different in any meaningful respect from the manner in which it is done on healthy animals who are killed afterwards. Postoperative care skills can be developed on any patient, including those who actually needed the surgery. It largely is immaterial from a pedagogical aspect that someone else did the surgery.

Another alternative which would provide not only surgical experience for students, but also would give the students experience in caring for animals after surgery involves cooperating with local animal shelters. Under this system, potentially adoptable animals would be transferred from a local shelter to a school of veterinary medicine. The animals would be attended to by veterinary medical students. Physical examinations, diagnostic procedures and treatments would be rendered by the students, with supervision by experienced faculty. Those animals not already neutered would be castrated or spayed by the students. After the animals have recovered and when it is safe to have them leave the hospital, they would be transferred back to the shelter. These animals have been shown to have a higher adoption rate. As with programs using patients already having human companions, this program would be beneficial to all.[11] The castration and spay aspects of such a program are a standard part of the curriculum at Washington State University, the University of California and a few other schools.

The AVMA, which is responsible for accreditation of veterinary medical schools in this country, does not dictate the manner in which surgery is taught. Its concern lies primarily in ensuring that students are exposed to sufficient numbers of patients in order to have an experience base that will provide for continued learning after graduation. As mentioned, they have accredited at least one school which does not harm or kill nonhuman animals in its programs. Although sometimes used as a reason for

disallowing alternatives, one can see that any such plea to AVMA accreditation problems is vacuous.

Because the majority of veterinary medical schools in this country utilize dogs or cats from pounds, it is appropriate to address this issue with respect to surgical training. The mind-set is that these dogs and cats are going to be killed anyway, so why not utilize them to some meaningful end? If it was that simple, it would be illogical to argue against this. There are, however, many factors that make the continued use of animals from pounds for surgical training a problem regardless whether the animals were actually going to be killed on the day of the proposed surgery laboratory.

One of the most compelling reasons for not using animals from the pound is that it institutionalizes our dependency upon a source of animals which all should be decrying and attempting to prevent. All would agree that the 'overpopulation' of dogs and cats, with its attendant mass destruction of 'surplus' individuals, is a societal ill due to human irresponsibility. If, however, it is maintained that animals from the pound are necessary for teaching, it may be unlikely that a concerted effort will be made to eliminate this tragic situation. The conflict of interest could be too great.[b]

Another compelling reason for discontinuing the use of pound derived animals is that it fosters confusion and insensitivity in students and faculty. There are no morally relevant differences between dogs from the pound and dogs who might have a human guardian. Dogs from either group have the same capacity to suffer or to enjoy life. The statement by many who support using pound derived animals that the latter animals are 'going to die anyway' ignores the principle of the matter. Veterinarians should have the highest sensitivity for nonhuman life and should be fostering a reverence for life in those aspiring to be veterinarians. Viewing and using other animals as simple teaching tools with no meaningful regard for their lives is the antithesis of this principle.

Another consideration is the stress placed upon the dogs or cats during transportation from the pound to the school. Whereas it may not seem like much to a human observer, one needs to be empathetic to the other animals' situation. Having already been caught and transported to a strange place by strangers, any further handling and transportation by other strangers undoubtedly will cause further stress. The animals in question do not know, like a human observer would, that the trip is finite. If this was being done for the sake of these animals, as in the case of benevolent transfer, one could effectively argue that any additional stress would be outweighed by the prospect of a long life in a good home. Although killing these individuals rather than

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[b] I realize one could argue that using this source of animals for spays and castrations is just as objectionable, in principle, if one *depends* upon this source. One might ask, If dog and cat overpopulation is eliminated, from where would individuals for surgical training come? I believe the situation needs to be seen as a temporary method until we alter our attitude so that we simply would *never* consider it acceptable to allow the killing of healthy animals in education. When we rise to this plane of sensitivity and compassion, we will find other methods to teach surgery.

subjecting them to further handling and transportation may seem 'wasteful,' it is in the animals' best interests, if it is decided that death is the final disposition.

Finally, it is specious to argue that the pound derived animals were 'slated for death.' Only the most socialized and docile dogs are chosen for use in surgery laboratories. These individuals also would have the highest chance of being adopted if there were resources available to keep them at the pound for a longer period of time. To say, therefore, that these dogs were 'going to die anyway' ignores the fact that their fate is heavily dictated by financial considerations and logistics. The situation is compounded when there is an agency ready and willing to purchase these animals.

In conclusion, there are no pedagogical reasons why nonhuman animals must undergo unnecessary surgery followed by death in order to teach the principles of surgery to veterinary medical students or others. Humane alternatives are available and require only a change in mind-set to facilitate their use.[6] Students cannot legally be forced to harm or kill nonhuman animals as part of their education. There is ample precedent for this. It will take, however, continued effort by students to prevail upon various professors to provide an alternative program at all the schools. It can be very intimidating to do so. Take heart, however, in the fact that there is nothing the professors can do to you that is as bad as what they expect you to do to the other animals.

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   "Models of the canine spleen, kidney, and liver were made from soft plastic to simulate the organs of the live animal as closely as possible in appearance and tissue handling properties. Each organ model was independently evaluated by five small animal surgeons who performed several common surgical procedures on each model. All models had a realistic appearance and, with the exception of one tissue handling problem with the kidney model, and one with the liver model, tissue handling properties of the models were comparable to those of the organs in the live animal. All models were useful for teaching each of the procedures evaluated."

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Discusses the modification of their surgical training curriculum to meet animal welfare and student conscience concerns. Have met with approval by faculty and students and still evolving.

“At The University of Illinois, we have made humane issues a priority in our surgical teaching program and we have taken a pro-active attitude.”

“Over the next few years, our surgical laboratory curriculum will continue to evolve to the point of having no nonsurvival surgical laboratories. The elective neutering procedures on humane shelter animals will be used for all instruction of live-animal surgery and postoperative patient care during the 3rd-year surgical laboratories.”

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“The use of large and in some cases unrealistic models were superior to live animals for demonstrating basic concepts and allowing the students to gain basic skills. ... Students readily accepted alternative models as long as clinical relevance had been demonstrated by the instructor.”

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    Medical and diagnostic procedures assessed were: Transtracheal aspirate, Urinary catheterization (male), Urinary catheterization (female), Bone marrow aspiration, Venipuncture, Needle aspirate, True cut needle biopsy, Ophthalmic examination, Otic examination, Cerebrospinal fluid tap, Cystocentesis, Venous catheter placement, Other"

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