The Anesthesiologist and the Use and Care of Laboratory Animals

ANIMAL experimentation has contributed immensely to the progress of biological sciences, not the least important of which is medicine. Mankind is indebted to historic successes made possible by animal studies in conquering diseases such as small pox, bubonic plague, cholera, typhoid fever. The growth of Anesthesiology too, for example, although initiated and aided by clinical contributions, was also dependent upon animal studies. One can only guess the role of the present-day anesthesiologist without the physiologic and pharmacologic animal studies so indispensable before clinical trial and acceptance of anesthetic drugs and techniques. It would appear that knowledge of the proper care and use of laboratory animals by anesthesiologists, especially those engaged in experimental studies, be an inescapable obligation.

Objections to animal experimentation attained national proportions in this country through the efforts of Caroline E. White with the founding of the Anti-vivisection Society in Philadelphia in 1883. By 1955, several hundred local and regional groups were organized. Curiously enough, the main opposition of these groups is to experimentation on any animals used as pets. They appear to have little objection to the use of other animals. This is difficult to reconcile in view of the significant medical achievements made with animal studies and the continued efforts of institutions of learning, philanthropic groups and the Federal Government to support medical investigations.

Those engaged in animal studies are fundamentally biologists with a profound reverence for living things. They have developed a set of standards defining the care and use of animals. Several years ago the American Physiological Society formulated the "Guiding Principles in the Care and Use of Animals." These principles have been adopted by the Editorial Board of Anesthesiology and are recommended as an obligation to all anesthesiologists. They are reproduced below for the information and edification of anesthesiologists engaged in research.

GUIDING PRINCIPLES IN THE CARE AND USE OF ANIMALS

(Approved by the Council of the American Physiological Society)

"Only animals that are lawfully acquired shall be used in this laboratory, and their retention and use shall be in every case in strict compliance with state and local laws and regulations.

"Animals in the laboratory must receive every consideration for their bodily comfort; they must be kindly treated, properly fed, and their surroundings kept in a sanitary condition.

"All major operative procedures must be done under a general anesthetic; minor operative procedures may be done under local infiltration anesthesia. If the nature of the study is such as to require that the animal survive, acceptable technique must be followed throughout the operation on dogs and cats. If the study does not require survival, the animal must be killed in a humane manner at the conclusion of the observations.

"The postoperative care of experimental animals shall be such as to minimize discomfort during convalescence. All conditions must be maintained for the animal’s comfort in accordance with the best practices followed in human medicine and surgery.

"When animals are used by students for their education or the advancement of science such work shall be under the direct supervision of an experienced teacher or investigator. The rules for the care of such animals must be the same as for animals used for research."

Director of Laboratory

The installation of adequate facilities and adherence to regulations for the proper care and use of laboratory animals is mandatory. Investigators engaged in animal research fully realize this obligation. Most have already experienced improved experimental results and greater public support for animal studies. Recently, a series of excellent articles by leading authorities has been published to guide researchers in the proper care of laboratory animals. These articles are recommended to all anesthesiologists engaged in research.

Some investigators have been accused of conducting studies during which laboratory animals undergo discomfort. Perhaps, a few may have been studying the actions of a new drug without the influences of preanesthetic medicants and anesthetic agents. Such influ-
rences can alter experimental results significantly. Other researchers may have immobilized animals with muscular relaxants rather than anesthetic agents. This procedure is unwarranted and to be condemned!

Quite likely, however, many investigators are uninformed as to adequate anesthetic procedures in animals which would obtund or eliminate pain and discomfort without interference with results of the experiment. Accordingly, there appears to be a need for a manual for the anesthetic management of laboratory animals written by one informed in this aspect of research. If this is the case, we, as anesthesiologists, can play a role in aiding investigators in their animal work. We should not escape this challenge.

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REFERENCES


The Author's Responsibility for References

Frequently in preparing manuscripts for publication, verifying references is more time-consuming than is editing the text and may delay publication of an article.

The most common fault is incomplete references. Occasionally the year of publication is omitted, making a check in the medical literature indexes impossible. In other instances, it is difficult to tell whether a number refers to the volume, issue or page. Sometimes the title is omitted or incorrectly quoted. The names of authors appear without initials and are misspelled or differ from those cited in the text. Often the names of foreign journals are not clear because of confusing abbreviations.

References to books are even more frequently incomplete. Edition number, year of publication or publisher and address are not given. Sometimes it is difficult to distinguish between a chapter and book title, between an author and editor.

Inaccurate and incomplete references cause one to wonder if these listings are included for an impressive bibliography and are not among those articles actually used in the preparation of a paper.

Complete and correct references are the responsibility of the author. The following are examples of the style used in ANESTHESIOLOGY:


Based on an editorial appearing in the February 1961 issue of A.M.A. Archives of Surgery.