Editorials

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Humaneness and Humanity

Medical research is being influenced by a variety of pressures, among which is a concerted effort to limit the availability of pound dogs for research.

At the national level, five bills are before the House of Representatives and one in the Senate to restrict the use of dogs and cats or to define alternatives for the use of animals for research. In the State of Michigan, both Macomb and Monroe counties have passed specific laws forbidding the release of pound dogs for medical research. Despite the testimony of many professional witnesses and invitations to visit their research facilities, the Board of Commissioners of these two counties succumbed to local lobbyists. The arguments for such restrictions are based on undocumented and unfounded allegations that medical researchers traumatize and/or torture dogs and cats in the process of fulfilling their scientific objectives. In a recent Michigan Humane Society News, Mr. David K. Wills stated, "We don't understand how people can support colleges and institutions that perform needless cruelty and untold suffering on thousands of pets in the name of education and scientific progress." He added, "We must stop that nightmare."

At issue is whether it is humane to use animals for research. Contrary to what is contended, research laboratories are committed to excellent animal husbandry and follow standards embodied in the National Institutes of Health publication, "Principles for the Use of Animals," and the Department of Health and Human Services publication, "Guide for the Care and Treatment of Laboratory Animals." At Henry Ford Hospital, every protocol is reviewed by the Care for Experimental Animals Committee to ensure that the animals are not subject to pain or injury, or used needlessly.

The fact is that pound animals are unwanted, stray dogs and cats who have been rejected by their former owners and doomed to death, if unclaimed. In this country, approximately 20 million dogs are put to death annually, of which fewer than 200,000 are required for medical research. Although proposed alternatives such as tissue culture and computers are being used in biomedical research, it is clear that such in vitro techniques or modeling systems will never replace the need for animals. Moreover, the dog specifically bred for research not only increases the cost of medical research but does not provide the anatomical and physiological variability essential for the experimental approach. How many of the developments in medicine have grown out of the use of animals in the research laboratory? Every diabetic who uses insulin, every person who has received a kidney transplant, and every recipient of a cardiovascular bypass is beholden to animal research for their very lives.

Recently, the Michigan State Medical Society (MSMS) House of Delegates unanimously approved a resolution in support of this aim. It states:

Whereas, experimental animals are essential to the conduct of medical research and
Whereas, continued medical research is fundamental to better human and animal health, and
Whereas, unwanted stray dogs and cats, some of which could serve mankind through research, currently are being destroyed by city and county animal pounds and shelters; therefore be it
RESOLVED: That MSMS supports the humane use of such animals for medical research and encourages municipal and county governments to facilitate such use in accordance with Michigan law and public policy.

Support of this MSMS resolution is essential, especially at the community level. Those who share these concerns may wish to call or write their city councils or county boards of commissioners and emphasize the importance of animals for medical research. Moreover, a number of physicians, veterinarians, and researchers have organized the nonprofit Michigan Society for Medical Research (MISMR) to inform the public of the importance of biomedical and biological sciences. Support for this group would be helpful as well.

Medical research derives its very existence from a primary concern for humanity and the welfare of society. A corollary of that concern is the humane treatment of animals. No medical researcher interested in improving the health of other humans would be wantonly cruel to the animals in his/her care. A humane concern for one's own kind is synonymous with a humane respect for all life.

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Fads in Medicine

In the Clinical Laboratory

Fads are as common in medical practice as they are in society as a whole, perhaps even more so. Nowhere is this more apparent than in the use of the laboratory to aid in diagnosis and management. A new technique is “discovered” and applied successfully to a small, very select group of patients. The technique is subject to peer review by presentation to the appropriate specialty society, and after acceptance there and further trial by enthusiasts (or skeptics), it is more widely publicized in the medical literature. The practicing clinician, always on the lookout to improve diagnostic accuracy, pressures his/her own clinical laboratory to make the test available, and the vogue catches on. The technique is now applied haphazardly to a much larger group of less well selected patients, and further pressure is placed on the laboratory to produce more and more results more and more quickly. Refinements in sensitivity are made, often at the expense of specificity. Before long the laboratory director is besieged with complaints about the increasing frequency of false positive or false negative results. The test falls out of favor as rapidly as the new vogue started, until the clinician learns by trial and error the correct selection of patients on whom to order the test and the correct interpretation of the test result. Finally, a new equilibrium is reached which firmly establishes the true value of the test in relation to clinical practice.

This pattern of response is well illustrated by two articles in this issue of the Journal. In the article by Drs. Di Paolo and Rival on “Acid Phosphatase: Clinical utility of the first tumor marker,” one can see clinical pitfalls that develop from the inappropriate application of isoenzyme assays for acid phosphatase. In the article by Dr. Foreback on “Isoenzyme update: Creatine kinase and lactate dehydrogenase,” one can trace the development of sophisticated isoenzyme studies in the diagnosis of myocardial infarction.

It is appropriate that this latter topic was selected as the first article of the new series, “From the Laboratory,” that begins with this issue of the Journal. This series will become a regular feature and will provide a vehicle for our colleagues in the clinical laboratories to keep abreast of developments in laboratory medicine. It is hoped that this series will enable our readers to distinguish between laboratory tests that are merely passing fads and those that have reached their true diagnostic equilibrium.

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In Clinical Diagnosis

The article by Drs. Haas, Akhtar, and Kobylak in this issue of the Journal on “Compression of the Duodenum by the Root of the Mesentery” is an example of one of several disease entities which wax and wane in popularity. When the disease is popular, the diagnosis is made so frequently that one wonders where the disease was lurking before its recent resurgence. When it is out of style, skeptics write scathing articles about individuals who made the diagnosis of a nonexistent entity. Out of 38,000 upper gastrointestinal roentgenograms performed at the Lahey Clinic Foundation for patients with symptoms referable to the upper gastrointestinal tract, a diagnosis of superior mesenteric artery syndrome was made only five times, for an incidence of .013% (1). On the other hand, the published experience of Goin and Wilk indicates one case in 300 upper gastrointestinal roentgenograms (2). The truth must lie somewhere between the extremes.

Although Haas, et al indicate that the superior mesenteric artery is not responsible for compression of the duodenum, everyone does not agree. Biplanar arteriographic studies with contrast material in the duodenum make a strong case for the acuity of the aortic-superior mesenteric artery angle as causally related to the syndrome (3). The relief of symptoms by feeding in the prone position of many patients with the syndrome is often impressive and further supports the concept. A history of rapid weight loss and forced supine or lordotic position may precede the onset of symptoms. Some investigators believe the loss of the fat pad around the aortic-superior mesenteric artery angle allows the acuity of that angle to increase and the duodenum to ride in its crotch. But some patients with a narrow angle do not have the
syndrome, and many people with a large duodenum and a visible impression probably caused by the superior mesenteric artery are asymptomatic. Some writers believe that a neuromuscular derangement is responsible for the syndrome, and support for this is gained from a report of a family with megaduodenum and megalocystis (4). Two cases have also been reported in which a megaduodenum with symptoms of superior mesenteric artery syndrome occurred, but there was nonrotation of the colon; the superior mesenteric vessels, therefore, did not cross the duodenum (5). Even when nonoperative treatment fails, opinion is not unanimous about the appropriate management. Some favor the withdrawal of the duodenum from beneath the angle of the artery, as was performed in this patient, but others make a strong case for duodenojejunostomy as a more reliable approach.

As with so many entities, until the pathogenesis is understood, the diagnosis and therapy will remain controversial.

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References