

THE JOURNAL OF NUCLEAR MEDICINE (ISSN 0161-5505) is published monthly by The Society of Nuclear Medicine, Inc., 136 Madison Avenue, New York, NY 10016-6760. Second Class Postage paid at New York, NY and additional mailing offices. *Postmaster*, send address changes to *The Journal of Nuclear Medicine*, 136 Madison Avenue, New York, NY 10016-6760.

EDITORIAL COMMUNICATIONS should be sent to the Editor: H. William Strauss, MD, The Journal of Nuclear Medicine, Room 5406 MGH-East, Bldg. 149, 13th St., Charlestown, MA 02129 (617) 726-5786. *Books and monographs* covering the use of nuclear medicine and its allied disciplines will be reviewed as space is available. *Send review copies to the Editor.*

BUSINESS COMMUNICATIONS concerning advertising, subscriptions, change of address, and permission requests should be sent to the publisher, The Society of Nuclear Medicine, 136 Madison Avenue, New York, NY 10016-6760 (212)889-0717. Advertisements are subject to editorial approval and are restricted to products or services pertinent to nuclear medicine. Advertising rates are available from the publisher. Closing date is the first of the month preceding the date of issue.

SUBSCRIPTION RATES for 1990 calendar year are \$120 within the United States; \$130 for Canada and Pan American countries; \$160 elsewhere. Student subscriptions are \$70 (with proof of student status). Single copies \$10.00; foreign \$11.00; convention issue (May) \$12.00; foreign \$13.00. Make checks payable, in U.S. dollars drawn on U.S. banks, to The Society of Nuclear Medicine. Notify the Society of change of address and telephone number at least 30 days before date of issue by sending both the old and new addresses.

COPYRIGHT © 1990 by The Society of Nuclear Medicine, Inc. All rights reserved. No part of this work may be reproduced or translated without permission from the copyright owner. Because the copyright on articles published in *The Journal of Nuclear Medicine* is held by the Society, each author of accepted manuscripts must sign a statement transferring copyright. See Information for Authors for further explanation, which appears on the second page preceding the Calendar.

Untruth

The handwriting on the wall may be a forgery.

Ralph Hodgson

Recently, a professor of radiology at an eastern university told me of a seminar presented by a medical student on the "false false-positive." This phenomenon occurs when a test has a "positive" result not due to the disease usually detected by the procedure, but related to the pathophysiology measured by the test. An interesting approach to the false-positive problem, to say the least.

The problem begins when test results are associated with detection or characterization of a disease, instead of describing the pathophysiology measured by the procedure. When the test is "positive" and the index disease is present, a "true" positive results; when the test is "positive" and the index disease is not present, but an alternative condition causes a positive test, a "false false-positive" occurs; finally, when the test is "positive" and neither the index disease nor an alternative condition that could cause the finding is present, a "true false-positive" exists. Using this logic, there are also three types of negative results: the "false false-negative," "true false-negative," and the "true-negative."

These befuddling concepts reflect the increasing complexity of clinical imaging and laboratory testing, where we apply a term to a positive result, appropriate for the test, which is not indicative of the disease under investigation. Remembering how this should be handled is somewhat like Danny Kaye's predicament in the film, *The Court Jester*. Kaye had two goblets of wine—one containing poison (to kill the evil knight), the other, only wine. Kaye thought he had a perfect method for remembering which was which—a rhyme:

The pellet with the poison's in the vessel with the pestle.

The chalice from the palace holds the brew that is true.

But at the last moment, Kaye is informed that the chalice from the palace has been broken. Another goblet has been substituted for it, so he must memorize a new rhyme.

Now the pellet with the poison's in the flagon with the dragon.

The vessel with the pestle holds the brew that is true.

Alas, there's many a slip between the chalice and the lip. Perhaps we should simply not equate a specific test finding to the presence of a specific disease. A constellation of laboratory and clinical findings are usually required to arrive at a specific diagnosis. The additive nature of many findings from multiple modalities, each pointing to the same diagnosis, lends credibility to the presumptive diagnosis and suggests convergence on the truth.

The concept of the "false false-positive" is a major flaw in our thinking about tests. To avoid the problem, the actual parameter measured should be known and clearly stated. Consider referring to the rate of monovalent cation transport into the myocardium when discussing a thallium scan or to the relative transferrin/lactoferrin space for a gallium scan. While this may obfuscate the apparently clear but misleading current mind set, it might avoid the "false false-positive." Then we can avoid drinking from the flagon with the dragon.

H. William Strauss

Editor, *The Journal of Nuclear Medicine*