

It's Time for Us to Intervene

With the dawn of the 1980's, nuclear medicine is evolving from an imaging modality to a more integrated imaging-clinical specialty than it has been in the past. With regard to such an integrated specialty, one implies the interaction between the physician and the patient for a therapeutic or diagnostic purpose. In our departments we have amassed a large body of sophisticated instrumentation, and it frequently represents a sanctuary. Images or laboratory findings are evaluated from a distance with regard to the patient, and this information is integrated with the patient's medical history and laboratory findings to derive a "diagnosis."

The ability to quantify, i.e., to measure relative phenomena with a degree of precision heretofore not available, not only opens new perspectives in nuclear medicine, but also places certain obligations on nuclear medicine physicians. It is now appropriate that the nuclear medicine laboratory take the lead in making maximum use of the available diagnostic information in a given nuclear medicine study. The question then arises—how shall this goal be accomplished?

Over the last two or three years some implementation of this goal has been attained through the use of interventional studies. The first of such studies was developed in cardiology-related procedures with the use of stress testing. Laboratories now perform drug interventional studies with nitroglycerin, dipyridamole, or other cardioactive drugs. For those involved in interventional studies, the results have been exciting (1). With the same radiation exposure, additional physiologic and pathophysiologic information is obtained, which is very useful in patient management. Currently in our laboratory interventional cardiac studies outnumber the noninterventional type.

Cardiology is not the only area in which interventional studies are appropriate. The introduction of radioisotopic cystography, in which the intervention used is the production of vesico-ureteral reflux (2), is another example; and a second type of genitourinary study that shows considerable promise is furosemide-augmented renography. In this procedure the diuretic is administered at the conclusion of a standard renogram to attempt to convert an equivocal study to a positive or negative one by evaluation of the diuretic on the slope of the renogram.

The interest in applying intervention techniques for improved diagnostic information is expanding rapidly. Interest in gastrointestinal nuclear medicine has hardly resurfaced, yet interventions associated with these GI nuclear medicine procedures are appearing in the literature. For example, in this issue of the *Journal*, Domstad et al. (3) demonstrate that patients with diabetic gastroenteropathy, secondary to gastric atony, may be evaluated by the use of a technetium-labeled resin in oatmeal to predict which patients will benefit from a pharmacologic intervention. The basis of the intervention is that of a dopamine antagonist to stimulate gastric motility. Certainly, direct patient benefits result from this type of measurement rather than from the empiric use of a pharmacologic intervention without prior knowledge of whether such intervention is likely to produce amelioration of symptoms.

Although the analogy may be premature and overly optimistic, the introduction of interventional studies in nuclear medicine could have the same relationship to the future of our specialty as did the introduction of dynamic imaging some years ago. We should be alert to those areas of nuclear medicine in which our ability to quantify, to study physiology and pharmacology by interventional techniques, will benefit the patients entrusted to us.

The obligations of the nuclear medicine physicians increase markedly with the use of interventional studies. For each such study performed, additional preparations must be undertaken. In the case of stress testing, certainly the management of common arrhythmias, and the recognition of stress-related ECG abnormalities is of prime consideration. For all interventional studies it is mandatory that we familiarize ourselves with the physiology and pharmacology of the agents used,

including their expected actions and reactions.

Once again, the nuclear medicine physician will emerge from the background and stand by the side of the patient to plan and supervise the procedure as well as to evaluate the results. The future of interventional imaging is promising. As virtually the only medical specialty that lends itself readily to the measurement of physiological changes, we can contribute significantly to patient care.

With adequate preparation in the basic sciences and intelligent application of appropriate means of intervention, we in nuclear medicine must continue to develop the field.

ROBERT E. HENKIN
Loyola University Medical Center
Maywood, Illinois

REFERENCES

1. STRAUSS HW, MCKUSICK KA, BOUCHER CA: Of linens and laces—The eighth anniversary of the gated blood pool scan. In *Cardiovascular Nuclear Medicine*. L Freeman and MD Blafox, Eds. New York, Grune and Stratton, 1980
2. NASRALLAH PF, CONWAY JJ, KING LR, et al: Quantitative nuclear systogram. Aid in determining spontaneous resolution of vesicoureteral reflex. *Urology* 12 (6): 654-658, 1978
3. DOMSTAD PA, KIM EE, COUPAL JJ, et al: Biologic gastric emptying time in diabetic patients, using Tc-99m-labeled resin-oatmeal with and without metoclopramide. *J Nucl Med* 21: 1098-1100, 1980

MIDEASTERN CHAPTER SOCIETY OF NUCLEAR MEDICINE 11th ANNUAL MEETING

April 9-11, 1981

Uniformed Services
University of Health Services

Bethesda, Maryland

ANNOUNCEMENT AND CALL FOR ABSTRACTS

The Scientific Program Committee of the Mideastern Chapter of the Society of Nuclear Medicine solicits the submission of abstracts from members and nonmembers of the Society of Nuclear Medicine for the 11th Annual Meeting to be held April 9-11, 1981 in Bethesda, Maryland. The program will include submitted papers, invited speakers, teaching sessions, and exhibits.

Abstracts should not exceed 300 words and should contain a statement of purpose, the method used, results, and conclusions. The name of the author presenting the paper must be underlined.

Original abstracts and four copies should be sent to:

Charles D. Teates, M.D.
Div. of Medical Imaging
Dept. of Radiology
Box 486
Univ. of Virginia Medical Center
Charlottesville, VA 22908

The program will be approved for credit toward the AMA Physician's Recognition Award under Continuing Medical Education, Category 1, through the Society of Nuclear Medicine.

For further information concerning the program, write or telephone (804) 924-5201 the Program Chairman listed above or E.U. Buddemeyer, Sc.D. at (301) 528-6890.

ABSTRACTS MUST BE RECEIVED BY FEBRUARY 1, 1981.