Invitation Lecture VII

Nuclear Medicine in the Philippines

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Nuclear Medicine has been introduced in the Philippines almost 26 years ago with the establishment of the first Radioisotopes Laboratory at the Philippine General Hospital in 1955 through the financial assistance of the Philippine Charity Sweepstakes office. The International Atomic Energy (IAEA) in Vienna subsequently assisted the pioneering radioisotope laboratory with research assistance for the different research projects involving the use of radioisotopes.

It was not until the middle of 1960 before other hospitals were able to put up their own Radioisotope Laboratories with the Rizal Provincial Hospital topping the list, whose Radioisotope Laboratory was established in 1966 with the technical assistance from the IAEA. Other laboratories were then set up especially in private hospitals. Today, there are about 22 hospitals all over the country with one kind or another of nuclear medicine facilities, thus widely varying the nuclear applications in the field of medicine.

Provision or acquisition of radiopharmaceuticals was once a problem but now with the help of the Philippine Atomic Energy Commission, importation of radiopharmaceuticals has been made easy and at a lesser cost.

Progress in nuclear medicine in the country can be considered as barely satisfactory inspite of the presence of trained physicians and nurses technicians along this field. One main reason is the high cost of nuclear equipment and its maintenance.

In this country, training is not only provided locally such as those courses offered by the Philippine Atomic Energy Commission and other local hospitals but also training in other countries such as study grants and on the job training courses in various medical centers abroad. Professionals such as nurses, medical technologists, nuclear engineers, chemists and pharmacists whose services are vital in nuclear medical laboratories are likewise given the opportunity to train.

Brain drain has also affected the progress of nuclear medicine in this country. In most cases, once the medical doctors and support staff have gained proper training and knowhow, they migrate to foreign countries or transfer to more lucrative positions thus making it necessary to train new personnel to keep the nuclear medical units going. Brain drain, lack of technical equipment and lack of opportunities for mere advanced training prevented more active participation in the field of nuclear medicine.

In most government hospitals maintaining a nuclear medicine unit, routine imaging using rectilinear scanners are carried out in addition to in vitro tests. In contrast with big private hospitals, whose facilities include the latest innovation in nuclear medicine technology such as gamma camera.

Inspite of the various limitations to the continuing progress of nuclear medicine in this country, it will not be long and one will see a better future of this field with the help of the various agencies such as the IAEA, our local atomic energy agency and the national government as a whole. Being aware of the benefits being offered by this branch of medicine, time will come that our local laboratories will be well-equipped and supported by a strong work force whose training in atomic energy can be put into practice.

Invitation Lecture VIII

Usefulness of Pinhole Scintigraphy in Bone and Joint Diseases

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The field-size-enlargement technic using a pinhole collimator has been widely practised in the clinical study of the thyroid gland and its superiority over the rectilinear scanning has been well documented (Hurley et al, 1971; Sostre et al, 1978). A recent review of the literature reveals however that the application of this technic to the diagnosis of organs and systems other than the thyroid gland has been much limited.

With the understanding of the facts that pinhole-collimator scintigraphy (PCS) is qualitatively advantageous over the rectilinear scanning and multihole scintigraphy in studying the thyroid gland, we have carried out a systematic test to evaluate the clinical usefulness of PCS in bone and joint diseases.

MATERIALS AND METHODS

Seventy-two consecutive cases with various bone diseases referred to the Nuclear Medicine Section of the Department of Radiology at St. Mary's Hospital, Catholic Medical College, Seoul were subjected to clinical statistical analysis. Diagnosis was established in each case on the basis of clinical examination, roentgenography, biopsy or surgery.

Bone scintigraphy was performed 4 hours after the intravenous injection of 30 mCi MDP-technetium-99m. Routine anterior and posterior single-pass-area scanning (SPAS) of the whole skeletal system were followed by single-spot scintigraphy (SSS) and pinhole-collimator scintigraphy (PCS) of the structures of interest. The gamma camera was an Ohio-Nuclear Sigma 410 with a pinhole-collimator whose aperture was 3 mm in diameter. PCS image was obtained with the collimator face from 5 to 10 cm above the target bone or joint. Radioactive counts were accumulated from 400,000 to 500,000 over a period of 20 to 30 minutes.

The quality of each image of SPAS, SSS and PCS was assessed and scored by 3 qualified image specialists on the basis of an arbitrary scale of 0, 1, 2, and 3 according to anatomicospatial resolution and pathological details in terms of "hot or cold" area. Thus, 0 represented normal; 1 suspicious