Atoms for Peace After 50 Years

On October 9, 2006, the People's Democratic Republic of Korea claimed that they had successfully performed a nuclear bomb test and become the ninth member of the exclusive club of nuclear powers. Just 2 wk after North Korea's announcement, I was in Seoul, South Korea, to deliver the opening address at the 9th Congress of the World Federation of Nuclear Medicine and Biology (WFNMB). Over 3,000 physicians, scientists, and other professionals from 70 different nations attended the meeting. Founded in 1973, the Federation has a mandate to extend the activities of the International Atomic Energy Agency (IAEA) to the nongovernmental support of nuclear medicine.

The President of the WFNMB is Dr. Myung-chul Lee, a distinguished alumnus of the Nuclear Medicine Division of Johns Hopkins University in Baltimore. The WFNMB was founded in Mexico in 1973, and the first World Congress was held in Tokyo/Kyoto in 1974. The Federation was founded to extend the activities of the IAEA to the nongovernmental support of nuclear medicine. Dr. Werner Burkart, IAEA Deputy Director General and Head of the Department of Nuclear Sciences and Applications, spoke at the opening of the 9th Congress.

In 2009, the celebration of the 50th anniversary of the founding of the IAEA will occur. President Eisenhower's famous "Atoms for Peace" speech was delivered on December 8, 1953, before the General Assembly of the United Nations in New York. The armistice ending the Korean War was signed the same year; the structure of DNA was published by Watson and Crick; Edmund Hilary and Tensing reached the summit of Mount Everest; and the Society of Nuclear Medicine was founded in the United States.

Half a century after the founding of the IAEA, the use of radioactive tracers in medical research and health care—called "molecular nuclear medicine"—is now a major specialty of medicine throughout the world.

These "peaceful uses" would not have occurred so rapidly if it had not been for the release of knowledge and technology by the United States to the rest of the world. Proliferation of nuclear weapons was slowed, but not stopped, by subsequent actions of governments throughout the world.

In his speech, Eisenhower stated 3 goals: (i) to work with the Soviet Union to transform military to peaceful uses of atomic energy, (ii) to negotiate nonproliferation agreements with the Soviet Union, and (iii) to involve nations throughout the world, large and small, in peaceful efforts to develop atomic energy for peaceful, rather than military, uses. He said: "It is not enough to take this weapon out of the hands of soldiers. It must be put in the hands of those who know how. . . to adapt it to the arts of peace. . . .This greatest of destructive forces can be developed into a great boon for the benefit of all mankind. . .if the entire body of the world's scientists and engineers had adequate amounts of fissionable material with which to test and develop their ideas, that this capability would be rapidly transformed into universal, efficient and economic usage." This release of nuclear material and knowledge to the rest of the world was controversial at the time. Eisenhower supported an "open" policy, and his proposals and new laws led to the establishment of the IAEA in 1959. Those of us in the specialty of nuclear medicine have taken up President Eisenhower's challenge, to adapt the secrets of the atom for the benefit of mankind.

Nuclear medicine and nuclear energy—nuclear medicine and nuclear power—have been great successes, benefiting enormous numbers of people all over the world, and advancing science based on the use of radioactive tracers. These tracers help answer the basic questions of the practice of medicine: What is the patient's problem? Where in the body is the problem? What is going to happen? What can be done about it? And is the treatment working? In the United States alone, over 20 million procedures involving these radioactive tracers are performed in medical diagnosis and treatment every year, for the great benefit of the patients.

With respect to the other benefit of nuclear energy, in South Korea, there are 20 nuclear power plants producing 40% of the electricity in the country. Four are planned for the future. There are none in North Korea. There are about 50 nuclear medicine physicians in North Korea, but radiopharmaceuticals are available for their use at the present time.

During my visit to Seoul, I observed that South Koreans are more industrious than ever, happily optimistic about the future of their prosperous economy. The 10 million hard-working residents of Seoul have become accustomed to having 10,000 artillery tubes with a 57-s flight time north of the demilitarized zone only 40 miles from their city. We hope that the new Proliferation Security Initiative, which now involves 80 countries, will permit the continuation of their optimistic, prosperous lives.

We have entered a new nuclear age, in which every rogue nation or terrorist group can seek to develop weapons that could result in the end of civilization as we know it.

At every stage of human development, people have to choose how to use new technologies, for good or evil. Given the awesome power of the atom, the rational choices are clear.

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