PUBLIC HEALTH

Heart X-Rays Advised

➤ X-RAY MOVIES of the heart have been advised for all persons over 40 years of age even if they are not aware of any heart trouble. Flecks of calcium in the coronary arteries can frequently be seen, warning of potential heart disease.

Dr. John P. Tampas of the University of Vermont College of Medicine, who reported a study of 1,097 patients at the University Hospital in Burlington, told SCIENCE SERVICE that he had done the calcium-detecting research in collaboration with the head of the department of radiology, Dr. A. Bradley Soule.

"We found signs of calcium in the coronary arteries of 165 of the patients who came to the hospital as bed patients or outpatients, many of them for treatment or diagnosis of conditions other than heart disease," Dr. Tampas said. "In following up the case histories of the entire group with their private physicians, we discovered 397 with heart disease."

Persons of 60 do not have as much heart disease related to calcium in the arteries as those of 40, Dr. Tampas said.

"There was a strikingly high incidence of calcium in the younger group," he said. "Once the persons were over 60, the incidence of coronary artery disease was about equal between those with and without calcium deposits."

The Vermont radiologists have made no attempt to treat the persons found with calcium deposits, leaving possible diet therapy and other treatment to the individual personal doctor. However, they do plan to follow up all available living persons in the entire group of 1,097 in from three to five years to see whether or not the calcium has increased. They hope to find a slowing down of the usual increase in deposits because the patients and their doctors are conscious of the condition.

Dr. Tampas reported the unpublished study to the meeting of the American Roentgen Ray Society in Washington, D.C., going into statistical detail concerning the age, sex, symptoms, electrocardiographic changes and routine chest radiographic findings. The findings included calcification not only of the coronary arteries, but deposits in the carotid arteries on either side of the neck, which supply blood to the head.

Also reported was calcification of the big aortic artery originating from the left ventricle of the heart. Its branches carry blood to all parts of the body. The study revealed that 52% of the patients with calcium had other evidence of heart disease at the same time.

A total of 98 of the 522 men had calcium deposits compared with 67 of the 575 women.

• Science News Letter, 88:242 October 16, 1965

PUBLIC HEALTH

X-Ray Risk Kept Small

➤ X-RAY STUDIES in the United States do not involve any serious risk, but the exposed area should be limited.

A three-year study of more than 36,000 patients receiving diagnostic X-ray examinations at the Johns Hopkins Hospital, Baltimore, was reported at the American Roentgen Ray Society meeting in Washington, D.C., by Dr. Russell H. Morgan, chief of the department of radiological science.

Chest X-rays account for the most "abuse" in limits of the X-ray field size, Dr. Morgan warned. However, because the air in the lungs allows easy passage of X-rays, the amount of radiation needed for normal chest studies is small.

Under X-ray treatment, the abdomen gets the largest amount of radiant energy. Unlike the chest, spaces in the abdomen are usually filled with liquid.

Chest examinations plus the barium enema for colon study and the intravenous pyelogram, or kidney study, account for more than half of the X-ray energy given to patients.

Other less common examinations involve much greater amounts of radiation but contribute less to the total exposure because they are infrequent. These examinations include blood-vessel studies of the spine and body section procedures, usually involving multiple film exposures and fluoroscopy, plus frequent, X-ray movie recording.

A radiation dose carefully limited to the head or arms has no significant effect on the sex organs. Radiation has no genetic effect on a woman past child-bearing age, of course, but the dose may be important to her health.

The Johns Hopkins study is believed to be representative of the entire population, Dr. Morgan said. The average yearly dose to the reproductive organs amounted to 23.1 millirads in the persons studied. A millirad is one thousandth part of a rad, which is the standard measure of absorbed radiation dose.

Most examinations of children under 10 years of age are of the head, neck and chest. Dr. Morgan said that in his hospital the technologists are careful to limit the beam size when X-raying youngsters.

Another report dealt with the freezing technique in treating ulcers. Dr. Harold O. Peterson, chief of radiology at the University of Minnesota Hospitals in Minneapolis, said that four years after the method was introduced, doctors have found it effective and not harmful in any way. It is especially effective for patients with ulcers of the duodenum.

The technique, developed by Dr. Owen Wangensteen at the University, was hailed as a breakthrough in ulcer treatment when it was first announced.

The patient swallows a deflated balloon connected to a thin tube. The balloon is then inflated in his stomach and filled with liquid nitrogen at sub-zero temperature. About 85% to 90% of the stomach lining is sloughed off as a result of this. With destruction of the lining, most of the acid producing glands and many nerve endings are also destroyed. In two or three weeks some of the stomach lining begins to grow back.

In cases of duodenal ulcer, the site itself is not frozen, but the production of irritating acid is blocked.

"It is far less damaging to a patient than surgical resection, the routine approach in treating such ulcers," Dr. Peterson said. He reported on a study of 530 patients treated a total of 731 times by the freezing method. One patient has now had eight treatments. For the most part, the treatment can be repeated as often as is needed without any permanent damage.

• Science News Letter, 88:242 October 16, 1965

GENERAL SCIENCE

New Surgeon General Seeks High Quality Staff

➤ NO CHANGES will be made in the U.S. Public Health Service organization, Dr. William H. Stewart, newly appointed 44-year-old Surgeon General said at his first news conference in Washington, D.C. His main challenge, he said, is to make sure health services are all they ought to be.

The former director of the National Heart Institute, Bethesda, Md., told SCIENCE SERVICE that he expected better cooperation from the American Medical Association than the organization has given in the recent past. Medicare and the heart, cancer and stroke program will be given a chance to work before they are expanded.

Dr. Stewart was introduced by the retiring Surgeon General, Dr. Luther L. Terry, who began work Oct. 4 as vice president of the University of Pennsylvania. Dr. Stewart said he supported his predecessor's stand on the Smoking and Health Report, one of the most controversial studies to come out of Dr. Terry's four-and-a-half year tenure.

Dr. Stewart had no comment to make, however, in answer to a question on progress in getting acceptance of the main thesis of the report by the tobacco industry, that smoking causes lung cancer and other serious ailments. Research continues under the auspices of the tobacco industry, the AMA and others.

Dr. Stewart said he planned to study the birth control problem with intensity and to follow up the Government's efforts to provide more doctors, dentists and nurses.

Like Dr. Terry, Dr. Stewart has had a long career as a commissioned officer of the Public Health Service. Dr. Stewart's appointment by President Lyndon B. Johnson was made Sept. 24, subject to Senate confirmation. Dr. Terry was appointed by the late President John F. Kennedy on Jan. 15, 1961.

• Science News Letter, 88:242 October 16, 1965