

MEDICINE

Uterine Cancer Curable

► **CANCER OF THE UTERUS** will be 100% curable, Dr. Emerson Day, director of the Strang Cancer Prevention Clinic, New York, predicted at the clinical meeting of the American Medical Association in Washington, D. C.

He reported that there had been no deaths following removal of uterine cancer from 12 patients after a period of five years or more following surgery.

Dr. Day reported on a sampling of 60 cases among 21,156 men and women examined since 1954.

The three major locations for operable cancer are the colon-rectum, the breast and the uterus, he said. Of 25 cases of colon-rectum cancer removed, 22 of the patients were free of the disease five or more years later. Of 23 patients who had breast cancer removed, 20 were alive and without evidence of the disease five or more years later.

Dr. Day said there is a stage at which

every tumor that arises "from a primary focus" is localized at the site of its origin, and that for most sites the cancer is removable and curable.

Shortcomings in cancer detection are largely responsible for fatalities, he reported. Variations and diffusion of cancer control programs throughout the United States are reasons for ineffectiveness.

Dr. Maurice Fremont-Smith of Massachusetts General Hospital, Boston, said that a vaginal smear is necessary to detect cancer of the uterus. Just seeing the tumor is not enough.

To justify hysterectomy, or removal of the uterus for cancer, he said, not only should there be a positive smear but a positive biopsy, diagnosis of tissue under microscope.

Of 436 women with negative smears followed for two to 15 years, only two were positive later on.

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SURGERY

Surgery in Liver Patients

► **RESULTS OF SURGERY** in patients with cirrhosis of the liver can be diagnosed with a new technique developed by Drs. Donald G. Mulder and John F. Murray of the University of California Medical School in Los Angeles.

The technique involves obtaining multiple blood samples from the vessels that take blood to and from the liver. Small amounts of injected fluorescent dyes and other chemicals can thus be traced through the complex liver circulatory system.

In cirrhosis of the liver, there is blockage within the liver of the portal vein, which normally carries blood from the intestine to the liver. The pressure in this vein becomes very high so that severe bleeding may occur, usually into the esophagus and stomach.

The surgical treatment of this condition involves making an opening between the portal vein and the large vein (inferior

vena cava) that drains blood from the lower body and is not involved in the disease process. The vessels are joined side to side, allowing blood to flow freely out of the portal vein and thus lowering the pressure.

Some authorities have questioned whether diverting blood away from the liver by such an operation might be detrimental to liver function.

Using the new technique, the UCLA investigators were able to demonstrate that this type of surgery was beneficial. The patient is protected from further hemorrhage by lowering the pressure in the portal vein and in the liver. In addition, the changes in liver circulation following the operation are not harmful, and the nourishment of the liver may even be improved.

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PUBLIC SAFETY

Heavy Shield Unnecessary

► **HEAVY SHIELDING** as protection for an astronaut against space radiations may not be necessary, at least for trips of less than 50 hours and at distances not greater than 618 miles from earth, the Air Force School of Aviation Medicine at Brooks Air Force Base, Texas, has announced.

Lightweight aluminum provides acceptable shielding, and, in fact, heavy shielding, such as lead or gold, would be more harmful than no shielding at all, Dr. George W. Crawford, nuclear physicist of the school's department of radiobiology, reported. (Other recent reports show that living organisms are killed at a height of 1,180 miles.)

His findings were based on examination of the biological specimens encased in a three-pound aluminum capsule as part of the payload of Discoverer XVII satellite launched in November. The specimens, including human eye and bone tissue, bacterial spores and algae, spent 50 hours in orbit during a gigantic solar flare. The satellite whirled about the earth 31 times before it was returned and recovered in the earth's atmosphere in the air near Hawaii by a USAF C.119 aircraft.

Previous estimates by scientists of radiation levels had indicated that solar flares might be of such intensity as to deliver a



DECORATES THE TREE—Christmas tree decorating with the master-slave manipulators (what the master does the slave does) gives practice to operators who will work with high-level radioactive materials in the new radiochemistry cells at the Atomic Energy Commission Laboratories at Hanford, Wash., operated by General Electric Company.

lethal dose to astronauts unless protected by heavy shielding.

"Our specimens received not more than 32 to 35 rads during the 50 hours they were in space," Dr. Crawford said. "They were in space during one of the largest solar flares ever recorded and were exposed to radiation from the flare for 50 hours starting just seven hours after the flare began."

This is the first time specimens from this country were exposed to such intensities and concentration of radiation for an extended time at such an altitude and recovered for analysis.

The biological specimens were encased in different types of metal to test their effectiveness as shielding materials. Some specimens were shielded only by the thin aluminum covering of the specimen capsule and the comparatively thin shell of the recovery capsule. Radiation dosimeters showed that aluminum provided better shielding properties than lead and that any heavy metal such as gold or lead becomes a hazard during a solar flare as high energy protons interact with these heavy metals to create damaging X-rays, Dr. Crawford explained. This does not occur with the lighter metals or plastics.

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