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(EDITORS: A San Francisco press showing of the medical linear accelerator will be held for reporters and photographers at 2:30 p.m. Wednesday, April 24, in the Radiology Department of Stanford University Hospital, Clay & Webster Streets. The story cannot be released until the afternoon of April 29, however, following the presentation of Dr. Kaplan's paper at Los Angeles.)

Stanford Medical School radiologists are "extremely gratified" with their first year's use of a baby atom smasher for treating deep-seated cancer.

In two thirds (48) of 74 patients treated, all traces of tumor growth have disappeared.

In five other patients the tumors disappeared, but cancer already had spread to other parts of the body. In 21 cases the treatment failed to help.

Although all traces of cancer have been erased in the "apparent control" cases, the Stanford radiologists said new tumor growth could begin at any time. It will be five to ten years, they cautioned, before use of the word "cure" may even be considered.

The Stanford report was presented today (APRIL 29) by Dr. Malcolm A. Bagshaw and Dr. Henry S. Kaplan at the annual meeting of the California Medical Association in Los Angeles. It was the first announcement of cancer therapy results with the six-million-volt linear electron accelerator since it began operating at Stanford Medical School in January, 1956.

The medical accelerator is a scaled-down version of the University's 700-million-volt linear accelerator used in nuclear research. The small machine was designed and built for cancer therapy by Stanford physicists under the direction of Professor Edward L. Ginzton, director of the Microwave Laboratory, and Professor Kaplan, who heads the Medical School's Radiology Department.

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Support for the project has amounted to more than $250,000 in grants from the American Cancer Society, the National Cancer Institute of the U.S. Public Health Service, and the James Irvine Foundation of San Francisco.

The machine's principal advantage is its high energy. The six-million-volt X-rays deliver a deeper-level maximum dose than conventional 200-300,000-volt X-rays, thus minimizing damage to the skin surfaces.

Moreover, the high-energy beam penetrates bone, fat, and other tissues with equal ease, eliminating "bone shadows" and simplifying treatment in such areas as the jaw or pelvis.

A wide variety of tumors--throat, lung, prostate, kidney, bladder, bone, brain, etc.--were represented in the report of the accelerator's first year of therapy.

Tumors that vanished following accelerator treatment ranged from football-size down to tiny retinoblastomas of the eye, Dr. Bagshaw said. All were cancerous except in seven papients with non-malignant tumors of the pituitary, the "master gland" at the base of the brain.

Of the 21 patients the medical accelerator failed to help, eight had been treated earlier with conventional X-rays. Results of using the accelerator to re-treat such patients have been discouraging, he said.

Three others in the "failure" group, also treated previously with conventional X-rays, were given only a small, palliative dose from the accelerator. For various reasons no attempt could be made to cure them with a larger dose of high-energy X-radiation.

Three additional patients were counted "failures" because they have not been available for follow-up reports. This leaves seven patients for whom there is definite evidence that the accelerator could not control tumor growth.

The machine has been operating "nearly at the saturation point," Dr. Bagshaw said, handling 15-25 patients a day. The Stanford radiologists have tried to select patients with varied types of cancer for whom they feel the accelerator offers

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"the greatest chance of cure."

Most patients received 30-35 treatments with the accelerator, usually over periods of 5-8 weeks. The average total dose was about 6,000 roentgens, the highest was 7,500. These are not much higher than conventional X-ray doses.

Basic studies for developing the Stanford linear accelerators were sponsored earlier by the Office of Naval Research. Unlike most atom smashers that whirl atomic particles in a circle, the linear accelerator fires them in a straight line making them as easy to use as "water from a spigot."

Inside a six-foot-long copper tube, the medical accelerator speeds electrons to almost the speed of light. Emerging from the tube, the electron beam is converted to X-rays by passing it through discs of gold and brass. A lead shutter adjusts the beam to a mere pinpoint or spreads it out as required for therapy.

Experimental tests of a higher-energy accelerator, the 70-million-volt Mark IV, have been going on for some time on the Stanford campus. The radiologists plan to use the Mark IV's electron beam without converting it to X-rays, hoping to treat deep tumors that overlie vital structures which might be damaged by X-radiation. Electrons would have the advantage of destroying tumors at a precise depth without affecting deeper tissues.

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