Eisenhower — One of the First in the United States: New prostate treatment protocol

Each seed used in brachytherapy is about the size of a grain of rice.

Radioactive seeds have been used to cure thousands of cases of prostate cancer since their first use 40 years ago. Now, the Arnold Palmer Prostate Center at Eisenhower Lucy Curci Cancer Center is the first center to combine the use of External Beam Radiation Therapy (EBT) with a powerful new kind of radioactive, cancer-destroying isotope "seed" made from Cesium-131. Among the many options available to men with prostate cancer, this combination of EBT with stranded Cesium-131 seeds offers state of-the-art radiation treatment to the prostate gland.

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Earlier this year, the Arnold Palmer Prostate Center was the first center on the West Coast to use the IsoStrand™ to strand seeds on its own premises, reducing waiting times for treatment from several weeks to just days. In brachytherapy, radioactive seeds are implanted directly into the prostate gland in an outpatient procedure that is fast and convenient. The patient typically returns to normal daily activities within two to three days.

Stranding of seeds, the process of linking them together mechanically, keeps the seeds in the prostate in a uniform pattern, and prevents their movement or displacement. Eisenhower's on-site IsoStrand seed stranding of Cesium-131 reduces the risk of migration of seeds to other parts of the body, and results in improved radiation dose distribution. "Cesium-131 and the on-site use of IsoStrand technology have changed the face of brachytherapy."

EBT delivers radiation to a precise location — in this case, the prostate gland — to stop the growth and reproduction of cancer cells while sparing the surrounding healthy tissue. The ExacTrac X-ray system at Eisenhower, also at such prestigious institutions as Harvard, UCLA, and the M.D. Anderson Cancer Center, provides precise localization within a fraction of a millimeter. "By focusing on implanted reference markers or analyzing anatomical landmarks, our system calculates the location of the prostate in seconds," said John Stevenson, MD, Medical Director of the Arnold Palmer Prostate Center. "Image guided radiation therapy has revolutionized our ability to increase the radiation dose delivered to cancerous tissue, and to minimize the side effects of treatment." The new isotope Cesium-131, approved by the Food and Drug Administration, offers a promising alternative treatment for many cancer patients. Seed brachytherapy has a proven high cure rate in prostate cancer patients, particularly in early stages of the disease (T1 and T2). Cesium-131 is only available at 15 locations in America, and differs from other brachytherapy treatments in several ways: Faster acting — it delivers 90 percent of the total dose in just 33 days, compared to 58 days for the more commonly used Palladium-103, and 204 days for the most commonly used Iodine- 125, resulting in a fast and aggressive radiation treatment that destroys the cancer cells before they have a chance to reproduce. Reduces the chances of normal tissue damage — Cesium-131 has a 9.7 day half-life, compared to 17 days for Palladium-103, and 60 days for Iodine- 125, delivering significantly less total radiation to the patient. Better tumor penetration — the energy level of the isotope is 29 KeV (kiloelectron volts), providing more than 30 percent greater penetration of the cancerous tissue than Palladium-103. "We are proud to offer the newest combination of treatments for prostate cancer," says Dr. Stevenson. "Cesium- 131 and the on-site use of IsoStrand technology have changed the face of brachytherapy. Combined with EBT, we know we are offering men with prostate cancer the best, most effective treatment options for their condition and quality of life."

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