

Cancer radiation treatments today and tomorrow

It is estimated more than 1.5 million Americans will be diagnosed with cancer in 2011. Although cancer diagnosis can be shocking and frightening, today newer



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cancer treatments are curing many patients and extending the lives of patients.

In the past 50 years we have learned that cancer treatment requires multimodality management. Multiple medical specialties — such as pathology, radiology, surgery, chemotherapy and radiation treatment — all come in to play to properly diagnose and treat a cancer patient. Significant advances have been made in all the above medical branches. Most notably, modern

radiation oncology employs many radiation therapy techniques for patient treatments:

- The RapidArc radiation therapy is the newest approach to deliver image-guided intensity-modulated radiation therapy (IG-IMRT). An on-board imager takes images of the tumor, immediately before each radiation treatment is delivered.

- CyberKnife uses a noninvasive image-guided localization system and robotic delivery of stereotactic radio surgery to treat the patient. It is the robotic arm of the CyberKnife that gives this technique an unprecedented access to tumor sites with an ease that is difficult to achieve with conventional radiation therapy technique.

- Particle radiation therapy using proton and neutron beams is in use to treat certain tumors that are difficult to cure with photon radiation therapy. Proton beams deposit most of the radiation dose at a certain depth within the body (Bragg peak), which then better spares the underlying normal tissue; neutron beams have a greater relative biological effectiveness on the tumor than a similar dose of photon radiation therapy.

- A nonsealed radionuclide such as ^{153}Sm is used intravenously to treat widespread, painful bony metastatic lesions. On the other hand, radioimmunotherapy is a form of infusible treatment available for lymphoma cancer patients.

Bay County cancer patients have many of these techniques available for cancer treatments. If you are diagnosed with cancer, before undergoing any treatment, talk with several cancer specialists including a radiation oncologist to find out which treatments are best for you.

Dr. Hasan Murshed is a cancer specialist and board-certified radiation oncology consultant at Gulf Coast Medical Center and Bay Medical Center. Reach him at 850-747-6972 or www.BayRegionalCancerCenter.com. This information is for education only. For treatment, seek advice from your physician.