

Increasing Precision and Comfort During Cancer Care Innovations at UC Irvine Medical Center Calm Fears, Improve Treatment

Soft, colored lighting flows through the room, while a wall and the ceiling are filled with the image of mountains, a sparkling lake, drifting clouds and trees moving with the breeze. It's a soothing environment conducive to meditation and relaxation – and to state-of-the-art cancer diagnosis and treatment.

Welcome to the Ambient Experience suite inside the Chao Family Comprehensive Cancer Center, located at UC Irvine Medical Center in Orange. Understandably anxious patients undergo often-lengthy imaging sessions in the room, where a high-tech CT (computed tomography) scanner helps doctors confirm the diagnosis of cancer, determine the extent of the disease, plan treatments and measure the effectiveness of therapies. But unlike in most CT rooms, patients in the Ambient Experience suite – the only one in Orange County – can control their environment in a way that can lessen their fears.

Nearby in the cancer center – Orange County's only National Cancer Institute-designated comprehensive cancer center – another world-class technological device was installed recently, also designed to increase patient comfort and lessen distress. The Trilogy linear accelerator, equipped with RapidArc™ technology, replaces conventional, time-consuming radiation therapy with a drastically faster, three-dimensional beam, which more precisely targets cancers and preserves healthy tissue.

These new high-tech improvements are especially helpful for people with claustrophobia or with discomfort from their condition for whom lying still for long periods of imaging or radiation treatment can be stressful, difficult or even require sedation.

"For example, patients with head and neck cancers sometimes have compromised breathing and swallowing, and that makes it difficult if not impossible to lie on their back for the 10 to 20 minutes needed to deliver standard radiation treatment," said Dr. Nilam Ramsinghani, medical director of radiation oncology at the cancer center.

Reducing patient uncertainty

When cancer is suspected, a diagnosis usually begins with sophisticated imaging in a CT suite. This confirms the existence of a malignancy and provides the precise location and measurements to assist in the planning of treatment, whether it includes surgery, radiation, chemotherapy, or a combination of therapies. Even after diagnosis, many cancers require repeated imaging before each new dose of radiation to ensure the treatment reaches only the targeted cancerous growths, not healthy tissue.

The design of the Ambient Experience suite helps to reduce patients' feelings of uncertainty and vulnerability while they undergo these often-lengthy imaging sessions. Gone are glaring lights, and daunting medical equipment is hidden. The curved white walls – no corners create a fluid, tranquil feeling – are lit only by soothing hues along the ceiling. The effect is clean and restful, drawing attention away from the serious business of CT scans and MRIs.

Patients control images of scenery projected onto the CT room's ceiling and walls. Their six choices include, among others: a South American beach scene, including a coconut dropping from a palm tree while clouds drift by; an African sky that transforms into twilight, com-



Lighting, imagery and the fluid design of the Ambient Experience suite inside the Chao Family Comprehensive Cancer Center aim to reduce anxiety and create an audio-visual cocoon for a patient undergoing a CT procedure.

plete with twinkling stars and darting fireflies; the Australian outback, with the occasional kangaroo hopping through the desert. It is creates a peaceful audio-visual cocoon for patients.

RapidArc offers quick, precise delivery

Once a cancer diagnosis is made, a comprehensive team of specialists collaborates in guiding the patient through treatment. In the past, radiation was delivered through repeated doses of one-dimensional beams to attack the malignant mass from every angle, a process that could take eight or ten beams over a half hour or more.

RapidArc, by contrast, delivers one 360-degree beam. It is eight times faster than conventional radiation treatment delivery – a huge boon for patient comfort and convenience. It is extremely accurate, using exactly measured doses of radiation that are computer-designed to match every dimension of a tumor. This ability is known as intensity-modulated radiation therapy, or IMRT.

Because it is so precise, RapidArc is especially well suited in treating cancers of the prostate, head and neck, and brain where damage to adjacent healthy nerves or tissue can cause devastating loss of function and appearance.

"The major advantage of RapidArc is that it treats the whole tumor volume with a single, 360-degree rotation," explained Ramsinghani.

"What used to take 10 minutes now takes less than two minutes."

Further, she said, the ability of the patient to remain motionless during treatment "is key to not damaging healthy tissue." So RapidArc is particularly good for head and neck cancer patients, who often have a history of smoking or chronic respiratory problems that cause them to easily cough or choke.

"Radiation, if not given properly, can have devastating effects by damaging the healthy surrounding tissue. And that could cause damage to muscles or bones, kidneys, liver, stomach, depending on where you are treating," Ramsinghani added. "The faster you can do the treatment without interruption, the better the outcome."

The cancer center also offers other types of radiation therapy that similarly aim to spare healthy tissue and may be more appropriate for patients, depending on the type, size and location of the cancer, along with other factors, said Ramsinghani.

Ramsinghani is part of a team of radiation oncology specialists who know the importance of using the premier technology for delivering the most compassionate care.

"Patients have so many questions going through their head and they're depressed," she said. "All during treatment they are wondering, 'When will it be over?' We do our best to make them relaxed, to make them feel calm."

The new Ambient Experience suite and RapidArc treatment are major improvements that help patients both medically and psychologically.

"We feel we can really improve the quality of life for patients," she said.

For a physician referral or information about services offered at the Chao Family Comprehensive Cancer Center, call 714.456.5651 or visit www.ucihealth.com.

Expert Team Care for Head and Neck Cancer Patients

About 40,000 new cases of head and neck cancers – the seventh most common cancer – are diagnosed each year. Despite strong survival rates, the impact can be especially challenging for patients because head and neck cancers may profoundly alter speech, swallowing and facial appearance.

"Voice and face are a person's window to the world. These types of cancers can be socially isolating," said Dr. William Armstrong, a nationally recognized head and neck cancer surgeon with University of California, Irvine Healthcare. "The location of the disease and external appearance create unique challenges for treatment. Growth and invasion of these tumors may have a devastating impact on speaking, swallowing, and a lot of the things that make us human."

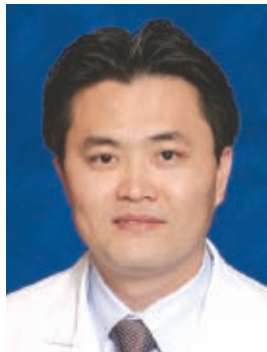
Head and neck cancers may include tumors of the tongue, tonsils, throat, jaw, mouth, eyes and lips. They are diagnosed most often in people over 60 years of age, and are found at higher rates in heavy smokers and alcohol drinkers.

But Armstrong said the past 10 or 20 years have seen an increase in head and neck cancers among people who have not used tobacco and or abused alcohol. What might be the reason? "The human papillomavirus, the same one that causes cervical cancer, may cause a viral infection in the throat that 10 or 20 years later leads to cancer in the tonsils and back of tongue, a result of the sexual revolution and increases in numbers of partners," Armstrong said.

Only a university medical center that treats a large number of head and neck cancers can support a large team that comprehensively works together. At UC Irvine, the team includes head and neck surgeons, medical oncologists, radiation oncologists, plastic



Dr. William Armstrong



Dr. Jason Kim

reconstructive surgeons, social workers and specialized dentists.

"Head and neck cancers are challenging to manage," said Armstrong. "The surgical procedures tend to be long. The postoperative care is demanding. The medical management requires a lot of coordination." Armstrong works closely with Dr. Jason Kim, a head and neck surgeon, an expert in microvascular, facial plastic and reconstructive surgery. He works to preserve and restore function as well as appearance.

Armstrong is recognized for research into agents to reverse and prevent oral cancers. Clinical trials are currently underway to study whether a soy extract can prevent or reverse oral cancers.

"We've also been doing endoscopic cancer surgery for the voice box and throat, to remove tumors with laser," Armstrong said. The surgery involves no exterior incisions, as the procedure is performed using specialized instruments inserted in the throat. Kim is developing leading-edge minimally invasive approaches to treat neck masses and tumors of the thyroid and parathyroid glands. Not every patient needs surgery. Some tumors are better treated by radiation therapy or chemotherapy,

or both.

Always of utmost importance are questions of a patient's quality of life. "That's why," Armstrong added, "we pride ourselves on not only controlling the cancer, but also preserving and restoring form and function. Survival is also about how you live your everyday life."

For more information or a referral to a UC Irvine physician, call toll free 877.UCI.DOCS or visit www.ucihealth.com.