

John Clark (right), CEO of American Radiosurgery Inc., with Dr. Kevin Waldron, a neurosurgeon. Eduardo Contreras / Union-Tribune photos

A changing market

Several companies offering alternative radiation therapy

By Terri Somers
STAFF WRITER

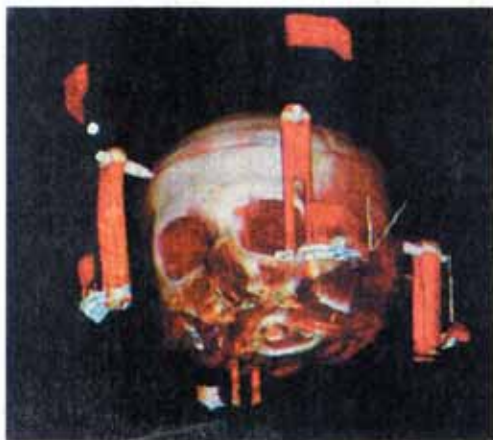
For decades, people with tumors in the head and neck had few treatment options that didn't require surgery.

There was general radiation therapy, which had plenty of side effects such as hair loss and damage to healthy tissue.

And there was the Leskell Gamma Knife, a technology out of Sweden. It was the long-favored technology of radiologists and neurosurgeons because it applied a precisely focused beam of radiation at a tumor to destroy it, with little to no damage to surrounding tissue.

But capitalism, drugs and technology have started to change the market.

Now several companies are vying for physician and patient dollars by offering alternative radiation-therapy technologies.



A CT scan would be used by a neurosurgeon when determining how to use the Rotating Gamma System for noninvasive radiosurgery of a tumor in the head.

One of them is San Diego-based American Radiosurgery Inc., a company founded in 2000 by medical-device salesman John Clark. The

company's Rotating Gamma System, which uses cobalt to produce radiation that kills tumors, is trying to grab a piece of the gold-standard Gamma Knife's market.

With the friendly, energetic ease of a salesman, Clark describes his mission to expand his 30-employee company, which had about \$10 million in revenue last year, as a typical David versus Goliath battle. Clark has his own money and that of fewer than 50 small investors riding on the battle, though he will not say how much.

Elekta, the publicly traded Swedish company that makes the Gamma Knife, employs 2,000 people and has multiple products that earned \$598 million in sales last year, according to Deloitte & Touche. The Gamma Knife has been around since 1972, and 80 of them are in use in the United States.

American Radiosurgery, which bought its patented technology from a Chinese company for an undisclosed sum in 2000, has sold five systems in the United States, Hungary and

► RADIATION

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S.D. company wants 25% of rival's market

Vietnam. This year, it is aiming for 10 sales of its \$2 million systems.

Clark hopes to capture a 25 percent share of Gamma Knife's market. But other emerging technologies are hoping to get a piece of the long-held Gamma Knife monopoly.

They include the Trilogy, used at the University of California San Diego Medical Center, and the Cyber Knife, used at independently owned radiation centers. These systems use a technology known as linear accelerators, which use electricity to create radiation.

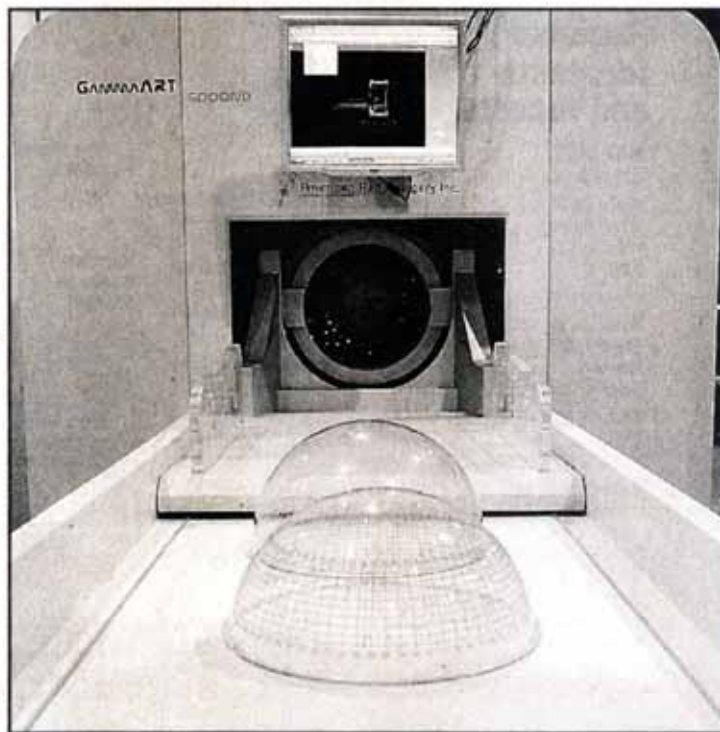
The market is attractive because it continues to grow, thanks to improvements in cancer drugs that are helping people with lung, breast and colon cancer live longer. Living longer with the cancers brings an increased risk of the disease metastasizing to the brain, said Dr. John Alksne, a neurosurgeon at UCSD.

Chemotherapy drugs cannot pass the body's blood-brain barrier, a membrane that protects the brain from chemicals in the blood, while still allowing essential metabolic functions, Alksne said. That creates the opportunity for cancer cells to develop there outside the drugs' reach.

But once they are diagnosed, radiosurgery can be used to get rid of the tumors, Alksne said.

Improved radiation treatments have helped perpetuate the market by making doctors more hesitant to risk injuring someone further by operating to remove a tumor, Alksne said.

Another factor is the mass-media promotion of new radiation products, he said. Patients are often exposed to the options of radiosurgery when they scan the Internet to learn about a disease and then visit a doctor armed with brochures and printouts of technology that they want to discuss, he said.



American Radiosurgery, which bought its patented technology from a Chinese company in 2000, has sold five systems in the United States, Hungary and Vietnam. Eduardo Contreras / U-T

"This online marketing of new companies I like to compare to the car industry: Everyone says mine is best and their cars are swinging around in a circle. But what does any of that have to do with driving to work?" Alksne said.

Determining the best method of treatment largely depends on the physician's experience and preference, the location of the area to be treated and the size of the tumor, Alksne said.

There are no head-to-head studies that compare 100 patients treated with a Gamma Knife or Rotating Gamma System versus 100 patients treated with Cyber Knife, he said.

Alksne was involved in UCSD's decision to go with the Trilogy system, a linear accelerator. Price and the ability to use it on more than just head procedures were key factors in the decision, he said.

Proponents of each system claim their machine of preference has the best accuracy.

"But show me a neurosurgeon that would not use the Gamma Knife or Rotating Gamma System for his own tumor," Clark said.

And if the field is limited to just those two options, Clark said the price and flexibility of

the Rotating Gamma System, or RGS, sells it.

A basic Gamma Knife system generally costs about \$3 million, and a RGS system costs about \$2 million, he said.

The technologies appear similar to the patient — like an MRI system in which a bed for the patient is topped by a tunnel from which the radiation is directed into the patient's head.

But the RGS costs less because it uses 30 cobalt sources of radiation, versus the Gamma Knife's 200 sources. Since the cobalt must eventually be replaced, maintenance of the RGS is cheaper than that of the Gamma Knife, Clark said.

The Gamma Knife and RGS systems are approved only for use on the head. The Food and Drug Administration is considering an application from American Radiosurgery for its next-generation system, the Orbiter, which treats the head and neck.

Ultimately, Clark said, his company will seek to have it approved for use on the entire body.

Price is a key marketing point for American Radiosurgery because it is one of the most important considerations weighed by administrators at cash-strapped hospitals.

Along with price, administra-

tors look at a system's flexibility, said Dr. Damon Smith, a radiation oncologist in San Diego. In other words, can it treat a number of patients with different needs and pay for itself?

Many hospitals won't buy the systems doctors would like to have, Smith said. So doctors have formed their own companies and opened practices that provide the different technologies, he said.

Smith is one of several physicians who opened the Radiation Medical Group in San Diego, with two Cyber Knife facilities in the county. He said he looked at the Rotating Gamma System and the Gamma Knife before deciding he preferred the Cyber Knife.

That system costs about \$5 million.

The Rotating Gamma System has its own devotees. Neurosurgeon John Seelig preferred the Gamma Knife and influenced Scripps Mercy Hospital to buy one, he said. But now he is a convert to the Rotating Gamma System and bought it for his private facility, which is under construction on Ruffin Road and is expected to open during the second quarter of 2008.

"RGS supplants the Gamma Knife, as far as I'm concerned," Seelig said, citing the ease of use of RGS and the cost savings.

Clark has developed another opportunity to expand his sales and revenue stream by helping physicians who decide to team up and create a private facility for radiological services.

In a hospital setting, a physician treating a patient on a radiological system would receive a fee for his or her service. The hospital would receive a much larger fee for use of its machine, Clark said.

By teaming up and creating a private facility, physicians receive fees for treating the patient and use of the system, he said.

"We maintain the partnership and sell the machine to it at a discounted rate, giving us ongoing revenue," Clark said.

Library researcher Denise Davidson contributed to this report.

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