New technology from Covidien adds predictability to tumor ablation

By Amanda Pedersen, Senior Staff Writer

Covidien (Dublin, Ireland) said it has overcome a significant roadblock to predictable ablation of soft tissue with its new advanced ablation system. According to the company, the system offers physicians predictable results regardless of the target location or tissue type. The Emprint ablation system with Thermosphere technology is designed to precisely heat and destroy diseased soft tissue (including liver, lung and kidney), and non-resectable liver tumors.

The company said it received FDA 510(k) clearance for the Emprint system in April and has completed all European requirements to CE mark the product. Covidien expects to fully launch the Emprint system in the U.S. and the European Union during the current quarter.

“It’s really been a technology challenge,” Kurt Smith, VP and general manager of Advanced Ablation Systems at Covidien, told Medical Device Daily. While physicians have been using ablation technology to attack tumors for two decades, Smith said, they’ve always had a “gleam in their eye to be able to create predictable ablation zones, to provide the kind of care that they wanted to.”

Smith said existing ablation technologies, including Covidien’s own radiofrequency and microwave ablation systems, just haven’t been able to give physicians the predictability they wanted, until now. Overcoming that roadblock had to do with being able to control the energy coming off the tip of the antennae in three different ways, he said.

Covidien noted that the Emprint system with Thermosphere technology provides clinicians with three kinds of spatial energy control (thermal, field, and wavelength) to create predictable and spherical ablation zones regardless of target location, tissue type or changes in tissue properties during a procedure.

“The magic of it, if you will, is really in how we’ve designed that antennae, 10 years of very hard work, over 50 patents that have allowed us to gain these three types of control,” Smith said. He added that the technology represents a trifecta of different advancements coming together.

Developing the Emprint ablation system with Thermosphere technology was the result of collaboration from a Covidien team that consisted of people based all over the world, but Smith said the inventor behind this breakthrough is Joe Brannan, a principal development engineer at Covidien. “It’s really his genius that was able to bring these three different advances into one antennae,” Smith said.

When physicians are shown what the device can enable them to do, Smith said, it tends to earn a jaw-dropping reaction. “They’re high-fiving in the operating room because they’re able to achieve what they’ve always wanted to,” he said.

From a patient care standpoint, the predictability that comes with the technology allows the physicians to go home at the end of the day really feeling good about what they have done, Smith added.

“This innovative technology enables physicians to deliver precise ablation directly to soft tissue, including liver tumors,” said Chuck Brynelsen, president of Early Technologies at Covidien. “By providing predictable spherical ablation zones, this technology gives physicians more choices in terms of approach, further simplifying needle placement and saving planning and procedure time.”