

## Colon cancer patients benefit from robot, fluorescent imaging

By **MATT TOMSIC**  
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The combination of two technologies is giving colon cancer patients at Roper St. Francis Healthcare shorter hospital stays and quicker recovery times following cancer surgery.

On Jan. 2, Roper began using a da Vinci robot outfitted with Firefly fluorescent imaging, which makes surgery less invasive and more precise. Roper is one of six centers nationwide that is using the combination of the robot and Firefly imaging. The Jan. 2 surgery was the first of its kind in South Carolina.

"Robotic-assisted surgery provides surgeons with a higher level of visualization and therefore, accuracy," said Lisa Horvath, director of perioperative services. "Now, with the integration of Firefly fluorescence imaging during robotic procedures, surgeons can observe tissue even more clearly, further improving surgical precision. The process involves the injection of a fluorescent dye that helps surgeons identify healthy, viable tissue."

Dr. Jorge Lagares-Garcia performed the first surgery and said the combination of the technologies advances the way surgeons operate on colon cancer.

"One complements the other between the vision you can have with the scope versus the addition of seeing the tumors light up with the Firefly," said Legares-Garcia, who practices at Charleston Colorectal Surgery.

The da Vinci robot gives surgeons more maneuverability and magnifies the area being operated on. The robot also is less invasive by using smaller incisions.

The Firefly imaging colors healthy tissue green, making it easier to identify tumors and other damaged tissue within the colon.

"Firefly technology will allow the most accurate assessment of the intestine prior to performing very delicate colon surgeries of any kind, improving the quality of the surgery," Lagares-Garcia said. "The



Dr. Jorge Lagares-Garcia operates the da Vinci robot used in colon cancer surgery. (Photo/Leslie Burden)

ability to use Firefly for this application is especially good news for our patients with colon cancer."

The surgery works by injecting the fluorescent dye into the body. The dye emits an infrared signal when hit by laser light. New hardware in the da Vinci robot then reads those signals and displays them for

the surgeon to see. A surgeon can use the robot to switch between fluorescent imaging and white light.

Lagares-Garcia said Firefly imaging has been used in kidney operations, and the dye lights up the healthy kidney while the tumor stays black. The increased visibility allows the surgeon to perform the

operation more safely and to preserve the healthy parts of the kidney, he said.

Other benefits include low blood loss, less pain, less scarring and a quicker return to normal diet and normal activities.

During the Jan. 2 operation, Lagares-Garcia said the Firefly imaging worked as it does in kidney operations and lit the healthy colon tissue green. But to the right side of the colon, he could see a different contrast for the less healthy tissue.

Horvath said the operation is similar in cost to existing colon cancer surgeries, but the benefit comes from a shorter hospital stay, which saves the patient and hospital money. The hospital has also attracted patients from outside of South Carolina because of the da Vinci robot and Firefly imaging.

Horvath said patients have traveled from as far away as Rhode Island in anticipation of the new surgery.

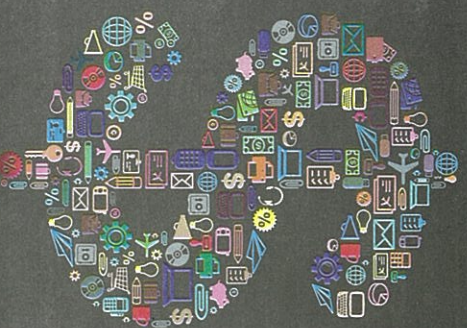
Lagares-Garcia said he will incorporate the technology in as many surgeries as possible and will begin training other surgeons to use the same techniques.

"My goal is to help train enough surgeons that eventually each patient who is a candidate for da Vinci surgery has the opportunity to take that course of action," Lagares-Garcia said.

Lagares-Garcia said re-admission rates with the da Vinci robot and Firefly imaging are between 12 and 16% compared to 20 to 30% before, though more studies will need to be performed to better understand re-admission and complication rates. Wound infection rates are less than 1%, he said, which is pretty low for colorectal surgery.

The technology also led to a special recognition for Roper St. Francis. Seven days after the da Vinci robot and Firefly imaging were used, Roper St. Francis was named a Colorectal Epicenter based on its host surgeon completing 100 cases and its use of the latest da Vinci system, among other criteria. ■

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