

Novel Cancer Surgery Enabled by NOTES Tools

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Surgeons at UC San Diego Health System have identified a new application for “scarless” surgery tools that are normally used for natural orifice transluminal endoscopic surgery (NOTES). In what is believed to be the first case in the United States, the surgical team used an existing incision from a previous colon surgery, through which they passed the long, flexible NOTES instruments into the abdomen to treat metastatic liver cancer. The new technique – termed LESSOnc (Laparo-Endoscopic Single-Site Oncologic surgery) by the team – promises to be a new surgical option for patients with certain liver cancers.



L-R: Drs. Sedrak, Sicklick, and McLemore performed minimally invasive surgery using an existing incision and NOTES instruments.

“Classically, we use large or multiple incisions to remove liver tumors. But with this hybrid approach, we were able to use NOTES tools and an existing small incision from the patient’s colon surgery to remove the liver tumor without additional incisions,” said Jason Sicklick, MD, surgical oncologist at Moores UC San Diego Cancer Center, who led the surgery.

“The patient, who was diagnosed with stage 4 colon cancer, had an ostomy site –a small opening made in the abdomen to temporarily divert bodily fluid away from the area where the cancerous colon section had been removed,” said Elisabeth McLemore, MD, colorectal surgeon at Moores UC San Diego Cancer Center. Instead of closing the inch-and-a-half site once the ostomy was reversed, the surgeons used the incision as a port to treat the liver tumor.

During traditional laparoscopic surgery, approximately three to five incisions would be made in the abdomen. Instead, through this single small opening, the surgeons inserted an endoscope to examine the liver at high magnification. This port was also utilized to insert the NOTES tools, used to successfully remove the liver lesion with clear surgical margins.



[click on the above photo to watch a video of surgeons explaining this novel cancer surgery.](#)

“The added benefits of minimally invasive surgery are a faster recovery with less pain, as well as lower potential for hernias or wound healing problems,” said Sicklick. “The goal is to have the patient recover as quickly as possible and return to their normal activities.”

The patient said she felt very little pain after the surgery, and she was released from the hospital after four days.

“The Center for the Future of Surgery at UC San Diego has pioneered new approaches for less invasive surgeries to remove the appendix and gallbladder,” said Michael Sedrak, MD, minimally invasive surgeon at UC San Diego Health System. “The use of NOTES tools for cancer surgery is just another step in the evolution of this revolutionary technique.”

The surgical team says the next step is to perform a “scarless” NOTES liver resection through either an oral or vaginal approach.

UC San Diego Health System has performed more than 100 NOTES procedures. Under the leadership of Santiago Horgan, MD – chief of minimally invasive surgery and director of the Center for the Future of Surgery – the NOTES team was the first in the U.S. to perform appendix and gallbladder removals, as well as weight loss surgeries through the mouth.

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