

Incisionless surgery corrects swallowing disorder

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The surgical team uses a surgical knife (blue) in the esophagus to create space between the muscle layer and lining of the esophagus. It allows doctors to tunnel down and cut the muscle at the base of the esophagus so that food and liquids can more easily flow into the stomach. Credit: WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

(Medical Xpress)—By passing surgical instruments through a patient's mouth, a team of doctors at Washington University School of Medicine in St. Louis has corrected a problem that prevented a woman from easily swallowing food and liquids. The operation is one of the first of its kind

in the region performed through a natural opening in the body rather than an incision.

"The '[holy grail](#)' we've been striving for is the ability of a patient to have [surgery](#) for which they come to the hospital, go to sleep, have the procedure and wake up with no [pain](#)," said Michael M. Awad, MD, PhD, a Washington University minimally invasive surgeon at Barnes-Jewish Hospital. "With this procedure, we're getting close."

The 54-year-old woman was diagnosed with achalasia, a disorder that prevents food from easily moving into the stomach because a muscle at the base of the esophagus won't relax.

"When we swallow, it's important that foods and liquids move through the esophagus into the stomach," said Faris M. Murad, MD, an interventional endoscopist in the Division of Gastroenterology. "Patients with achalasia develop [chest pain](#), and sometimes the problems are so severe that [patients](#) get liquid in their lungs, causing [pneumonia](#). But the main difficulty is that food and liquids tend to fill the esophagus and then are regurgitated."

In the year before her surgery, the patient had lost about 100 pounds, not from dieting, but because so little of her food stayed down.

"It was limiting her ability to work, to exercise, and it severely restricted her life," said Awad. "She had been a jogger before her problems began, and when I saw her the morning after the operation, she said she wanted to get up and run. That was quite a remarkable change."

Doctors don't know what causes the condition, which affects about one in 10,000 people. Some have theorized that the disorder may be caused by a virus, but so far none have been linked to the problem.

Specialists at Washington University Medical Center treat about 100 patients with achalasia each year. Some are treated with drugs or with a procedure that involves inflating a balloon to stretch the opening between the stomach and the esophagus. About half receive laparoscopic surgery, which involves making a handful of keyhole incisions in the chest and abdomen through which the surgeon cuts the muscle that separates the esophagus from the stomach. Many with the condition may now opt for the incisionless procedure, which is similar except that the [surgical instruments](#) are passed through the mouth.

The novel procedure was first performed in Japan and is part of a trend to make surgery increasingly less invasive. Doctors are exploring and attempting to develop other natural orifice surgeries that would involve operating through the mouth, anus or vagina.

As more patients with achalasia undergo the procedure, the Washington University physicians will evaluate whether the incisionless surgery is as effective as the laparoscopic version of the operation.

"The laparoscopic surgery has a very high success rate – about 95 percent of patients have a significant, long-term improvement in swallowing," Awad said. "But there is still some pain from the small incisions and often some swelling around the esophagus and the [stomach](#) that require two to three weeks of recovery time."

In more than 400 incisionless procedures performed worldwide to repair the defect that causes achalasia, the operation seems to cause less pain and allow for a shorter recovery period than the laparoscopic version of the surgery.

"One nice thing about the gastrointestinal tract is that there are no pain fibers," Murad explained. "That allows us to operate in the GI tract without patients feeling it. So making a small [incision](#) in the lining of the

esophagus doesn't cause discomfort."

That was the experience of the patient who recently underwent the procedure in St. Louis.

"When she woke up from the anesthetic, she had zero pain," Awad said. "We had prescribed intravenous pain medicine, but she didn't use it. We also prescribed Tylenol, but she didn't need any. The only discomfort she complained about was from the IV in her arm."

It's not clear that all patients will experience so little pain following the procedure, but as the physicians study the surgery and its outcomes, they expect reduced post-operative pain will be one of its advantages when compared to laparoscopic surgery.

"Preliminary data already show that, so far, the short-term effectiveness is comparable to the laparoscopic version of the operation," Murad said. "We still don't know what the long-term data will tell us, so we will follow patients for many months after their operations to see how they do."

Provided by Washington University School of Medicine in St. Louis

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