

Surgery without external scars is gaining traction

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When Patricia Manrique was told she needed her gallbladder removed she immediately thought about the classroom full of children who rely on her to teach them tap and ballet each day. The Chicago Park District physical instructor needed a way to get the surgery performed without being laid up for weeks so she opted for an innovative minimally invasive procedure called Natural Orifice Translumenal Endoscopic Surgery (NOTES) that would allow surgeons to perform organ removal surgery without any visible incisions and have her back on her feet the same day. Northwestern Medicine physicians were among the first in the U.S. to perform several types of the procedure and are leading the charge in organ removal through the mouth or vagina.

"Millions of women in the United States suffer from gallbladder disease, and many of those women, like Manrique will eventually need [surgery](#) to remove the organ which can often be painful and have a lengthy recovery time," said Nathaniel Soper, MD, chair of surgery and director of the minimally invasive surgical program for Northwestern Medicine.

NOTES offers a means of reducing and ultimately eliminating the need for incisions to gain access to the abdominal cavity. With NOTES, a flexible endoscope and accessory instrument are inserted transvaginally (vagina) or transgastrically (mouth) and passed through the wall of the organ to reach the [abdominal cavity](#). By reducing or eliminating the need for incisions, NOTES provides a less invasive surgical option that can reduce pain, recovery time, complications and hernias even further compared to a traditional laparoscopic surgical approach.

"We believe that this type of procedure is laying the groundwork for truly incision-less surgery, which could offer patients many benefits," said Eric Hungness, MD, minimally invasive gastrointestinal surgeon and assistant professor of surgery for Northwestern Medicine.

Aside from Manrique's physically demanding job, she also prefers not to take [pain medication](#). So when given a choice between traditional laparoscopic surgery and NOTES, she said it was a no brainer. "I had my surgery on Wednesday and went home that day. I was up and walking around the next day and back to work on Friday—all without pain medicine," said Manrique.

"Transvaginal surgery is one of the safest alternatives to traditional laparoscopic surgery because it uses an easily accessible natural orifice that has proven safe for over a century," said Magdy Millad, MD, director of gynecologic endoscopy and professor of obstetrics and gynecology for Northwestern Medicine.

Factors contributing to the growing interest in incisionless surgery include the fact that the stomach and GI tract have very few nerves that register pain. In the future, this may allow surgeons to carry out NOTES procedures with the patient under sedation, rather than general anesthesia.

"Surgical standards of practice continue to evolve towards less invasive surgical approaches. It's an evolution from one way of doing things and we think it holds great promise" added Hungness.

To date, published human NOTES cases include removal of the appendix and kidney along with hernia repair and much more. The optimal orifice for NOTES has not been determined, yet physicians say transvaginal access is the least complicated to perform. The only approach currently available to male patients is the removal through the

mouth. However, transrectal (anus) access has recently been proposed as a potential alternative access route for the procedure in men.

"I feel very lucky to have had this choice and would recommend that people educate themselves about the options available to them," added Manrique.

Provided by Northwestern Memorial Hospital

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